

Koch Methanol St. James 5181 Wildcat Street St. James, LA 70086

> Post Office Box 510 Vacherie, LA 70090

July 12, 2023

St. James Parish Government Permitting and Planning 5800 Canatella Street PO Box 106 Convent, LA 70723

#### RE: Koch Methanol St. James, LLC (KMe) KMe Facility St. James Parish Land Use Application

Dear Sir or Madam:

Koch Methanol St. James, LLC (KMe) operates a methanol production facility (the KMe Facility) in St. James, St. James Parish, Louisiana. KMe is proposing changes to the KMe Facility associated with two separate projects: the KMe Optimization Project and the Oxygen Back Up Supply Project. Enclosed is a land use permit application for the two projects prepared in accordance with St. James Parish Council, Louisiana – Code of Ordinances Sec. 82-25.

The objective of the KMe Optimization Project is to increase the KMe Facility's design production rate of refined methanol, primarily by further optimization of existing plant equipment. This will be achieved via a raw material feed upgrade to add ethane into the natural gas feed stream, improvements to plant cooling capabilities, and other equipment upgrades with the collective primary goal of increasing the utilization of existing assets. The KMe Optimization Project is intended to achieve a 25% increase in the refined methanol design production rate from 4,950 metric tons per day (MTPD) to 6,200 MTPD.

The Oxygen Back Up Supply Project is a separate project to provide a backup supply of oxygen  $(O_2)$  in the event of loss of  $O_2$  feed from the existing Air Separation Unit. This project is in the early phases of design and is expected to include oxygen storage tanks and equipment to vaporize oxygen prior to feeding the KMe Facility. The Oxygen Back Up Supply Project is a reliability improvement project aimed at reducing plant trips and downtime due to loss of O2 feed. This project will not provide additional plant capacity.

If you or your staff have any questions or require additional information during your review of this application, please contact me at (580) 478-7621, or <u>Kevan.Reardon@kochind.com</u>.

Sincerely,

Kevan Reardon EH&S and Security Leader

Enclosure

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#### APPLICATION FOR

# St. James Parish Industrial Land Use



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SUBMITTED BY

# Koch Methanol St. James, LLC.

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## St James Parish Industrial Land Use

St James Parish Planning & Permitting Office P.O. Box 106 Convent La. 70723 Office: 225-562-2500

Name of Corporation: Koch Methanol St. James, LLC (KMe)

Representative: Kevan Reardon

Mailing Address: 5181 Wildcat Street, St. James, LA 70086

Representative email address: Kevan.Reardon@kochind.com

Phone Number: (Office) <u>580-448-2768</u> (Cell) <u>580-478-7621</u> (Fax) <u>N/A</u>

#### 1. Attach Preliminary Plat

- a. Location of Site 5181 Wildcat Street, St. James, LA 70086
- b. Section-Township-Range <u>Section 16 Township 12 South, Range 16 East Louisiana Principal</u> <u>Meridian; Section 16 - Township 13 South, Range 16 East Louisiana Principal Meridian; Section</u> 06 - Township 13 South, Range 16 East Louisiana Principal Meridian
- c. Current use of site <u>The site is currently used primarily for industrial purposes as a methanol</u> production facility (KMe Facility), with portions of the undeveloped land leased for agricultural purposes, specifically for sugar cane farming. The KMe Facility, which was referred to as Phase 1 in prior land use applications, includes the Methanol Plant and associated Methanol Terminal. An administration building associated with the KMe Facility is located on the southeast side of the property. Third-party-owned pipelines, including an existing underground ethane pipeline, run generally north-south along the west side of Hwy 3127, with portions on KMe property.
- d. Total acreage of site <u>1,277.36 acres</u>
- e. Acreage of development and elevation <u>Prior land use approvals approved the development of</u> <u>portions of the 1,277.36 acres of land (see Figure 3) with an elevation of approximately 7 feet</u> <u>above sea level. KMe is not seeking approval for the development of any additional land, except</u> <u>portions of land separately owned by KMe and Plains Marketing LLP under/on which a pipeline</u>

and access road will be constructed to connect an existing third-party ethane pipeline to the KMe <u>Plant (the pipeline will also be constructed under Hwy 3127)</u>. Otherwise, the proposed project work will occur within the existing areas previously approved for development.

f. Current land use designation by Parish <u>Pursuant to map provided as Exhibit 1 in the St. James</u>
<u>Parish Council, Louisiana – Code of Ordinances Sec. 82-25(a)(1), the overall site contains land</u>
<u>designated as Industrial, Commercial/Residential Mixed, Residential Growth, and Wetlands.</u>
<u>However, the projects will only affect land currently designated for Industrial Use and Wetlands</u>
(see Figures 1 and 3). The majority of the development will be constructed on land designated as
<u>Industrial. The land where the connection to the existing ethane pipeline and associated access</u>
<u>road will be constructed is designated as Wetlands.</u> The existing Administration Building is
<u>located on the land designated Commercial/Residential Mixed but will not be impacted by the</u>
<u>projects. Other pre-existing structures are located on land designated for Residential Growth, but</u>
<u>the projects will not impact these structures.</u>

Pursuant to the St. James Parish Council, Louisiana – Code of Ordinances Sec. 82-25(g)(3)a., Figure 4 provides a map showing the location of sites listed in § 82-25(g)(3)a. within 2 miles of the outer extent of the proposed project areas, and a list of these sites is included in the table below.

Parks	None
Playgrounds	None
Churches	St. Paul Baptist Church
Schools	None
Community or Senior Citizen Centers	None
Nursing Homes	None
Hospitals	None
Other Places of Public Assembly	None
Historic Sites	Sugar Mill Archaeological Site
	Graugnard Farms Plantation House
	Cabahanoce Plantation

Section 82-25(g)(3)a. Sites within 2-Mile Radius

A Phase I Cultural Resource Survey was performed prior to original construction of the KMe Facility in August and September 2014. The September 2014 Phase I Cultural Resource Survey included evaluation of cultural resources situated within or immediately adjacent to the site. With respect to cemeteries and historic structures, the survey included a review of the area within 1 mile of the site location. Other than the Graugnard Farms Plantation House, no other historic structures identified met the criteria for listing in the National Register of Historic Places. The State Historic Preservation Office (SHPO) agreed with these findings in a letter dated April 17, 2015.

The Phase I Cultural Resource Survey identified the Graugnard Farms Plantation House, a property listed on the National Register of Historic Places, located on property near the KMe Facility that is not owned by KMe. In a letter dated July 22, 2015, SHPO concurred that the initial construction of the KMe Facility would not adversely impact the plantation home. KMe is not proposing any construction activities near the house in association with the proposed Projects. referred to as Site 16SJ82. The survey was reviewed and approved by SHPO in letters dated February 20 and April 17, 2015. Phase II Archeological Testing and Evaluation to further define Site 16SJ82 with respect to its eligibility for nomination to the National Register of Historic Places was conducted in February 2015, under a site investigation plan approved by SHPO. Based on the results of the Phase II Evaluation, an Avoidance Plan was developed to set aside the area of archeological Site 16SJ82 to protect it from any future ground-disturbing activities. The area has been fenced off and secured to prevent entry by unauthorized personnel, and the area has been fallow since completion of the historic resource evaluation. SHPO approved the Avoidance Plan by letter dated July 22, 2015. KMe is not proposing any construction activities near Site 16SJ82 in connection with the proposed Projects. The area will remain protected in accordance with the Avoidance Plan.

A Phase IA Desktop Study of the 240-acre parcel owned by KMe and bordered to the east by Highway 3127 under/upon which a pipeline and access road will be constructed to connect an existing third-party ethane pipeline to the KMe Plant as part of the KMe Optimization Project was performed in July 2023. The study consisted of a review of previously conducted cultural resources surveys, previously recorded archaeological sites, cemeteries, and properties listed on the Nation Register of Historic Places situated within 1 mile of the 240-acre parcel. The Desktop Study concluded that the parcel, which is situated within a freshwater cypress swamp, has a very low to negligible probability of containing undisturbed cultural resources. g. Distance between proposed facility and nearest residential properties <u>The existing Administration</u> <u>Building is the structure at the site nearest to residential properties. It is located 0.10 miles from</u> <u>the nearest residential properties. The center of the methanol production area (KMe Plant), where</u> <u>the majority of the project work will be conducted, and the center of the methanol product tanks</u> <u>(KMe Terminal) are located approximately 1.60 and 0.36 miles, respectively, from the nearest</u> <u>residential properties. The proposed projects will not change these distances to the nearest</u> <u>residential properties.</u>

#### 2. Facility Description

 a. Description of facility and proposed operations (attach additional sheets if needed) <u>The KMe Facility is located along the West Bank of the Mississippi River about 30 miles south</u> <u>of Baton Rouge in St. James Parish. The site is bordered by St. James Co-op Road and is</u> <u>traversed by the Union Pacific Railroad and Highway 3127. See Figure 2 for a property</u> <u>boundary layout.</u>

The KMe Facility produces refined Grade AA methanol using natural gas as a feedstock. Product-grade methanol is sent offsite directly by pipeline for loading and distribution to customers via barge or ocean-going vessel or stored in tanks before loading on-site for distribution via truck or rail.

Figure 3 includes an updated plot plan that shows the KMe Facility as it was built and delineates the land areas that were approved for development with the prior land use approvals. The previously approved and developed areas include the methanol production plant (KMe Plant), methanol product storage and loading areas (KMe Terminal), methanol and raw material pipelines, supporting utilities/buildings such as retention ponds, warehouses, guard shacks, and the administration building area.

The proposed changes are associated with two separate projects - the KMe Optimization Project

and the Oxygen Back Up Supply Project. With the KMe Optimization Project, KMe intends to increase the KMe Plant's design production rate of refined methanol, primarily by further optimizing existing plant equipment. This will be completed via a raw material feed upgrade to add ethane into the natural gas feed stream (includes constructing an underground ethane pipeline and a metering station to connect the KMe Plant to an existing third-party ethane pipeline and vaporizing the ethane for injection into the feed stream), improvements to plant cooling capabilities (such as upgrading air cooled heat exchangers and cooling tower equipment, including adding a cooling tower cell), and other equipment upgrades (such as burner efficiency improvements, upsizing process safety relief valves and other components, improved process monitoring, and adding or modifying piping and process equipment) with the collective primary goal of increasing the utilization of existing assets and methanol production. The KMe Optimization Project is intended to achieve a 25% increase in the refined methanol design production rate from 4.950 metric tons per day (MTPD) to 6.200 MTPD.

Additionally, a separate project is planned for providing a backup supply of oxygen (O<sub>2</sub>) in the event of loss of O<sub>2</sub> feed from the existing Air Separation Unit. This project is in the early phases of design and is expected to include oxygen storage tanks and equipment to vaporize oxygen prior to feeding the KMe Plant. The Oxygen Back Up Supply Project is a reliability improvement project aimed at reducing plant trips and downtime due to loss of O<sub>2</sub> feed; it does not provide additional plant capacity.

- b. Include anticipated future expansions <u>No specific expansion projects are planned other than the</u> <u>KMe Optimization Project described above, although minor changes or improvements within the</u> <u>approved footprint may be undertaken in the future.</u>
- c. Estimated permanent full time employees / part time employees / contract employees
   <u>The existing KMe Facility provides approximately 114 direct jobs to operate the facility. With the</u>

proposed projects, these existing jobs will be retained. The proposed projects are expected to create 400 temporary jobs and 2 new permanent jobs.

- d. Estimated contractor employees during construction <u>400 temporary jobs are anticipated during the</u> <u>construction of the projects.</u>
- e. Length of construction <u>The initial KMe Optimization Project construction is planned to occur</u> from November 2023 to July 2024. The remaining KMe Optimization Project scope is expected to be constructed over the next 3 to 5 years, with construction occurring intermittently over that period. Construction of the Oxygen Back Up Supply Project is anticipated to take approximately <u>13 months starting in February 2024.</u>
- f. Proposed date of construction <u>See response to 2.e. above.</u>
- g. Proposed date of operations <u>The KMe Facility is currently operational. The KMe Facility will be</u> <u>shut down for a planned maintenance turnaround in the first quarter of 2024, during which some of</u> <u>the KMe Optimization Project construction will occur. The KMe Facility will resume operation</u> <u>after the turnaround is complete. Operations of other project components will begin shortly after the</u> construction dates described in 2.e above.

#### 3. Substances Produced and/or Stored

a. List any and all types of substances the proposed facility is projected to produce and/or store. (attach additional sheets if needed)

The types of materials included in methanol production at the KMe Facility are raw materials,

products, catalysts, maintenance products, water treatment chemicals, lab chemicals, fuels, and

firefighting foam. This covers the types of substances the facility produces and/or stores. See

Attachment 2 for a list of the existing substances produced or stored at the facility, along with

their associated Safety Data Sheets (SDS). Ethane has been added to the list of substances

produced or stored onsite to account for the proposed KMe Optimization Project.

b. Attach any pertinent Material Safety Data Sheets (MSDS).

See Attachment 2 for the SDSs for the substances produced or stored onsite, including ethane, which is the only new substance that will be produced or stored onsite as a result of the proposed projects. Note that SDSs are retained onsite and submitted to the LEPC (Local Emergency Planning Commission) and local fire department anytime a new hazardous material is brought onsite.

- c. Include National Fire Protection Association (NFPA) 704 reference. See Attachment 1
- 4. Is the proposed facility projected to produce and/or store any substances related to the *Emergency Planning and Community Right-to-Know Act* (EPCRA)?
  - a. Facility Type:
    - i. EPCRA Facility Type 302 <u>Yes. The KMe Facility currently produces and/or stores EPCRA</u> Section 302 substances in excess of the Threshold Planning Quantity (TPQ), which varies depending on the substance, and will continue to do so following the completion of the projects. Therefore, the KMe Facility will continue to be subject to EPCRA Section 302. The facility will not produce or store any new EPCRA 302 substances as a result of the projects.
    - ii. EPCRA Facility Type 311/312 Yes. The KMe Facility is currently subject to Tier II reporting since the amount of hazardous chemicals present at the facility exceeds the Tier II reportable quantity (RQ). Ethane will be the only new substance resulting from the proposed projects that will exceed RQ thresholds. Per LAC Title 33, Part V, Subpart 2, Chapter 101, §10109.B., the RQ for Tier II reporting in Louisiana is 500 pounds unless the RQ for an extremely hazardous substance is lower. For those substances at the facility with a lower RQ, the RQs are noted below. All other substances have an RQ of 500 pounds.
      - ARTIC 3X3% ATC FOAM CONCENTRATE
      - TRANSFORMER OIL
      - METHANOL
      - ETHANE
      - UNIVERSAL GOLD<sup>®</sup>C6 1%/3% ALCOHOL RESISTANT AQUEOUS

- ACETYLENE RQ: 100 LB
- ACTISORB<sup>®</sup> S2 EXTR 4.5
- ACTIVATED ALUMINA
- AMBERLYST 40 WET RESIN
- AMMONIA HYDROXIDE RQ: 100 lb
- AQUACHLOR 12.5% NSF SODIUM HYDROXIDE
- ARGON RQ: 100 lb
- CHEMTREAT BL124
- CHEMTREAT BL1260
- CHEMTREAT BL1303
- CHEMTREAT BL1559
- CHEMTREAT BL1744
- CHEMTREAT BL1746
- CHEMTREAT BL1797
- CHEMTREAT CL1495
- CHEMTREAT CL2150
- CHEMTREAT CL2840
- CHEMTREAT CL4132
- CHEMTREAT CT907
- CHEMTREAT P8281L(N)
- CO2/ARGON SHIELDING MIX RQ: 100 lb
- DEF
- DIESEL RQ: 100 lb
- UNLEADED GASOLINE RQ: 100 lb
- HDMAX<sup>®</sup> 200 TRX 2.5
- MEGAMAX<sup>®</sup> 800 TAB 6X4
- NATURAL GAS (METHANE)
- NITROGEN RQ: 100 lb
- OXYGEN
- PHOSPHORIC ACID
- PROPANE RQ: 100 lb
- PUROLITE CT252
- QUADRASPERSE CL5859
- REFORMAX<sup>®</sup> 100 TAB 4.7X4.7
- REFORMAX<sup>®</sup> 330 LDP 19X16
- REFORMAX<sup>®</sup> 420 EXTR 30
- CAUSTIC SODA 20%
- CAUSTIC SODA 50%
- SULFURIC ACID
- UMICORE CATALYST DNX

- iii. EPCRA Facility Type 313 Yes. The facility is currently subject to EPCRA 313 reporting. Methanol and ammonia exceed their respective TPQ. Methanol is the main product produced at the facility, and ammonia (aqueous) is used as a reagent to control nitrogen oxide emissions prior to being emitted to the atmosphere. For future EPCRA 313 reporting, the site may also exceed the TPQ for zinc, copper, and nickel compounds, which are EPCRA 313-reportable components of catalysts contained in process vessels used in the methanol production process – the catalysts are changed out over time, and the catalysts that are removed are accounted for in the relevant reports. Due to the KMe Optimization Project, the amount of methanol and ammonia produced/used and their related emissions are anticipated to increase. However, the only new substance resulting from the projects, ethane, is not an EPCRA 313-reportable chemical.
- iv. EPCRA RMP Site Yes, the KMe Facility is currently subject to the Risk Management
   Program (RMP) due to methane in natural gas which is onsite above the Threshold Quantity
   and is subject to RMP for Flammable Materials. This will continue to be the case after the
   proposed projects are completed. Ethane will also be added to the RMP as a part of the KMe
   Optimization Project, as it will be stored above the Threshold Quantity. A summary of the
   results of the RMP worst-case scenarios is included in item #5 below.

#### 5. What is the facility's average, most probable worst case scenario for both RMP and non-RMP facilities?

The KMe Facility's current RMP includes the worst-case scenario for methane, a flammable

material. The worst-case scenario is the loss of containment of methane from the main natural gas

line in the KMe Plant, leading to a vapor cloud explosion. This worst-case scenario has the largest

hazardous impact radius compared to other alternative scenarios.

An analysis of the worst-case scenario impacts for methane was conducted using the Environmental

Protection Agency's (EPA's) RMP\*Comp<sup>TM</sup> modeling software, which determined the maximum

distance impacted originating from three representative areas, as shown in Figure 5. This impact radius extends 813 feet beyond the KME Facility's property boundary on the northwest side. However, the potentially impacted area outside the property boundary is designated as Industrial and only contains a railway track and a small section of above-ground piping. Therefore, this scenario would not impact any public receptors, such as residences, schools, churches, hospitals, etc., or any sensitive environmental receptors, such as National or State Parks, Forests, Monuments, Federal Wilderness Areas, or Officially Designated Wildlife Sanctuaries, Preserves, or Refuges. Ethane is the only new substance due to the projects subject to RMP. A preliminary worst-case scenario for ethane was evaluated using EPA's RMP\*Comp<sup>™</sup> modeling software based on the planned project ethane-containing process and piping components. The worst-case scenario for ethane is a vapor cloud explosion since it also is a flammable material. The modeling of this scenario for ethane determined the maximum distance impacted originating from three representative areas, as shown in Figure 5. The potentially impacted areas extend 1,347 feet beyond the KMe Facility's property boundary on the northwest side and 90 feet on the southeast side. However, the potentially impacted areas outside the property boundary are designated as Industrial, and they too only contain a railway track and a small section of above-ground piping. Therefore, none of the public or sensitive environmental receptor types listed above would be impacted by this scenario.

- 6. What is the proposed facility's Emergency Operation Plan for the prevention, preparation, response, mitigation, and recovery of the following:
  - a. Fire- to include manpower, fire water, cooling water, and appropriate fire suppression agent, i.e., foam, dry chemical.
     <u>The KMe Facility is staffed 24 hours per day, 365 days per year. KMe Facility operations staff</u> and a 3<sup>rd</sup> party emergency response team (ERT) currently handle any emergency events. The facility has a fire brigade and HAZMAT capability and facility operations staff is First Aid and CPR trained. The 3<sup>rd</sup> Party ERT can also provide on-site rescue services and trained EMR/EMTs

on shift.

Two underground fire water distribution networks are provided, one at the KMe Plant and the other at the KMe Terminal tank farm. One distribution network supplies fire water to hydrants, fixed monitors, water/foam spray systems, and automatic sprinkler systems located around the KMe Plant, and the second system supplies the KMe Terminal tank farm.

The KMe Plant contains 4 fire water pumps, 3 of which are diesel driven to ensure capability is maintained in the event of a power loss. These pumps supply fire water to the KMe Plant from the fire water tank. The fire water tank has a storage capacity sufficient to provide the maximum fire water demand for a minimum of four hours. If additional firewater is needed, the firewater tank can be bypassed, and water from the Mississippi River can be directly routed to supply the plant firewater system. Foam deluge systems are in place for the KMe Plant methanol intermediate tanks and truck and rail loading racks.

<u>The KMe Terminal has 3 electrically driven fire water pumps, two of which are supported by</u> <u>diesel generator backup to ensure capability is maintained in the event of a power loss. These</u> <u>pumps pull fire water directly from the Mississippi River and supply the water to the KMe</u> <u>Terminal tank farm. The KMe Terminal area has a foam deluge system for all four methanol</u> <u>storage tanks, fire water manifolds, and monitors.</u>

In addition to fixed fire water capabilities, the plant fire brigade operates an industrial foam pumper truck with a 6,000-gallon per minute (gpm) rated fire pump and a 1,000-gallon foam tank.

Fire extinguishers are provided throughout the process areas and within buildings in accordance with National Fire Protection Association (NFPA) 10 standards for portable fire extinguishers and the International Building Code (IBC). The KMe Plant and KMe Terminal have a sophisticated fire and gas detection system. These systems are intended to rapidly and reliably detect a hazardous situation due to flammable vapors/gases, low oxygen levels, toxic gases/vapors, and fires.

i. Is the facility's water supply designed for twice the water supply needed?

Yes. The KMe Plant's firewater pumps pull from treated firewater tanks but also have a bypass intake in the Mississippi River, providing the KMe Plant with a continuous water supply. For the KMe Terminal, two of the fire water pumps are provided with backup power by diesel-fired generators that can be utilized even during a power loss event. This ensures that twice the water supply demand can be met. The third pump is available solely for additional capacity in the case of an emergency.

- ii. Does the facility have twice the needed fire suppression agent, i.e., foam, dry chemical? <u>The KMe Facility has approximately 15,000 pounds of firefighting foam, more than twice</u> <u>the amount required for the facility.</u>
- b. Releases- to include manpower and resources, i.e., water, foam, dry chemical.

The KMe Facility is designed with operating controls that safely handle releases. This includes but is not limited to routing process safety valves to equipment that mitigates the release of process fluids that would otherwise vent to the atmosphere. Also, staff at the facility are HAZMAT trained to respond to hazardous material releases. Emergency spill kits are located throughout the KMe Facility to aid in response. Additionally, KMe has a 3<sup>rd</sup> party environmental spill response company available on stand-by for response in case of an emergency.

c. Spills- to include manpower and resources, i.e., water, foam, dry chemical.

The KMe Facility's activities are performed in accordance with applicable state requirements of LAC Title 33, Part IX, Chapter 9 for Spill Prevention and Control (SPC) and federal Spill

Prevention, Control, and Countermeasure (SPCC) requirements of 40 CFR Part 112. In tandem,

these regulations cover all liquids and solids listed under LAC Title 33, Part I, § 3931, as well as oils

that could be immediately transported to the waters of the state in the event of a release. Such rules

apply to any container storing 55 gallons or more of subject fluids that may be present on site either

permanently or temporarily. The rules require routine inspection of containers of stored oils and

chemicals to ensure that all are in working order with no signs of maintenance needs or imminent

failure. The KMe Facility's existing SPCC/SPC Plan will be amended to include any additional

subject containers brought on-site as a result of the proposed projects.

The facility has a stormwater pollution prevention plan (SWPPP) for managing and monitoring

stormwater, incorporating Best Management Practices (BMP). The SWPPP also ensures that the

potential adverse environmental effects associated with generating solid and/or hazardous wastes

from spills of oil or hazardous substances are minimized to the maximum extent possible. The

specific BMPs and/or good housekeeping measures in the SWPPP include, but are not limited to:

- <u>Containment dikes provided for chemical storage tanks, with visual inspections prior to the</u> release of accumulated stormwater;
- Minimization of exposed bare soils;
- Wastes and chemicals are stored in covered containers or designated storage areas under roofing to prevent contact with stormwater;
- Immediate cleanup of spills prior to next storm event; and,
- <u>Maintenance operations conducted under roof where practicable and maintenance-related</u> <u>fluids stored indoors or within covered containers.</u>

<u>The containment areas in the KMe Plant and KMe Terminal truck and rail area have a higher</u> potential for contamination compared to other areas of the KMe Facility. Therefore, in the areas,

KMe utilizes a "first-flush" protocol to protect against potentially contaminated stormwater being

sent directly to offsite waters. This protocol requires stormwater that is generated within these areas

from the first inch of rainfall to be collected in a separate, segregated sewer system (the Potentially

Contaminated Sewer System, or PCSS) and to be routed to the onsite wastewater treatment plant

(WWTP) for treatment prior to discharge to the Mississippi River. After the first inch of rainfall, to

prevent overwhelming the wastewater treatment plant, the PCSS is diverted to a lined pond that can discharge to the Mississippi River (this stream is not discharged to the St. James Canal). Note that after the first inch of rainfall, the potential for contamination is low; therefore, treatment at the WWTP is unnecessary.

KMe does not anticipate significant changes to the footprint of current tanks or building new equipment for chemical storage as a result of the proposed projects.

d. Weather events.

The facility has a Standalone Hurricane Plan and a Severe Weather Policy. A 3<sup>rd</sup> party service also monitors the weather for excessive heat, severe weather, lightning, and other weather-related events and provides real-time updates.

- e. Air monitoring at the facility's perimeter (fence line) to assure public safety.
  - If there were to be a release or spill at the KMe Facility, trained facility personnel are available 24/7 to respond with portable monitors within the plant and along fence line areas as needed to determine if there are detectable levels of materials and to take other appropriate actions based on the monitor readings. Additionally, based on feedback KMe proactively requested from community members, prior to the start-up of the raw material feed upgrade portion of the KMe Optimization Project, KMe will install a fence line monitoring system that will monitor volatile organic compounds (VOC) or methanol along the KMe Facility property boundary or other facility perimeter. KMe anticipates that the Louisiana Department of Environmental Quality will include this voluntary commitment to install the fence line monitoring system as a requirement in the air permit for the KMe Optimization Project.
- f. Does the proposed facility agree to provide Emergency Response Plan(s) to, at a minimum, the respective fire department and Parish Office of Emergency Preparedness for proper public safety planning?

Yes, the KMe Facility has previously provided, and agrees to continue to provide, the Fire

Department and Parish Office of Emergency Preparedness annual or more frequent updates as

changes are made to the Emergency Response Plan.

g. The proposed facility projected operating schedule other than normal downtime for routine maintenance?

The KMe Facility currently operates and will continue to operate 24 hours per day, 7 days per week, and 365 days per year, except for routine maintenance, following the proposed projects.

- 7. Will the proposed facility be manned 24/7/365? Yes, the KMe Facility is currently and will continue to be manned at all times following the proposed projects. Guards are stationed in the building located at Hwy 3127. Cameras allow the guards to continuously monitor the facility gates, process areas, truck loadout, administration, and warehouse buildings. Rounds are conducted every two hours during the overnight shift starting at 4 pm each night.
  - a. If not, what procedures are proposed for emergency notifications for the duration of unmanned hours?  $\underline{N/A}$

#### 8. Does the proposed facility have a Facility Security Plan? Yes, the KMe Facility has a Facility Security Plan.

- a. Does the Facility Security Plan incorporate prevention, preparation, response, mitigation, and recovery from chemical, biological, radiological, and inclement weather threats?
   <u>The Facility Security Plan addresses anticipated security threats in a variety of ways. It</u> incorporates perimeter barriers, restricted areas, security devices, control of access and entry, and authorization for product loading. The facility has a camera system to monitor the facility during the day and night. Security guards are staffed 24 hours per day, 7 days per week, and 365 days per year. Rounds are made routinely during the overnight shift.
- b. Does the Facility Security Plan incorporate remote sites, i.e., docks, off-site locations, rail service, marine services, or pipelines?
   Yes, rounds on the dock are made routinely, by security, during the overnight shift. Operations conduct routine rounds, at minimum, twice per shift.

Please note: This application, one electronic copy, and payment to St. James Parish Government for Planning Commission review shall be presented to the St. James Parish Planning Office at least thirty

(30) days prior to a regular meeting of the Planning Commission. Include letters indicating the availability of service and adequate capacities from affected utilities, including water/sewerage, electricity, gas, telephone and cable television. In areas lacking sewerage, letters indicating the alternate disposal method has been approved by the state office of public health. The St. James Parish Planning Commission reserves the right to request additional information and may include hard copies of voluminous materials.

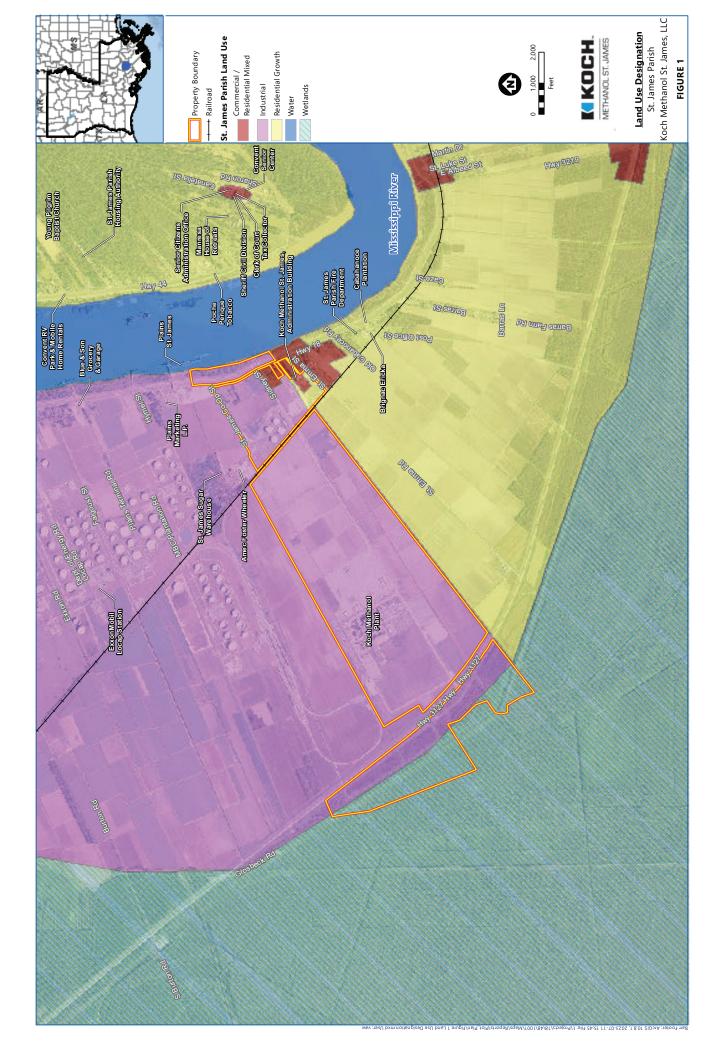
Additional permits may be required by St. James Parish Permitting Office, Louisiana Department of Health and Hospitals, Louisiana State Fire Marshal and other Federal, State and Local regulating bodies.

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### Figure 1

#### Land Use Designation





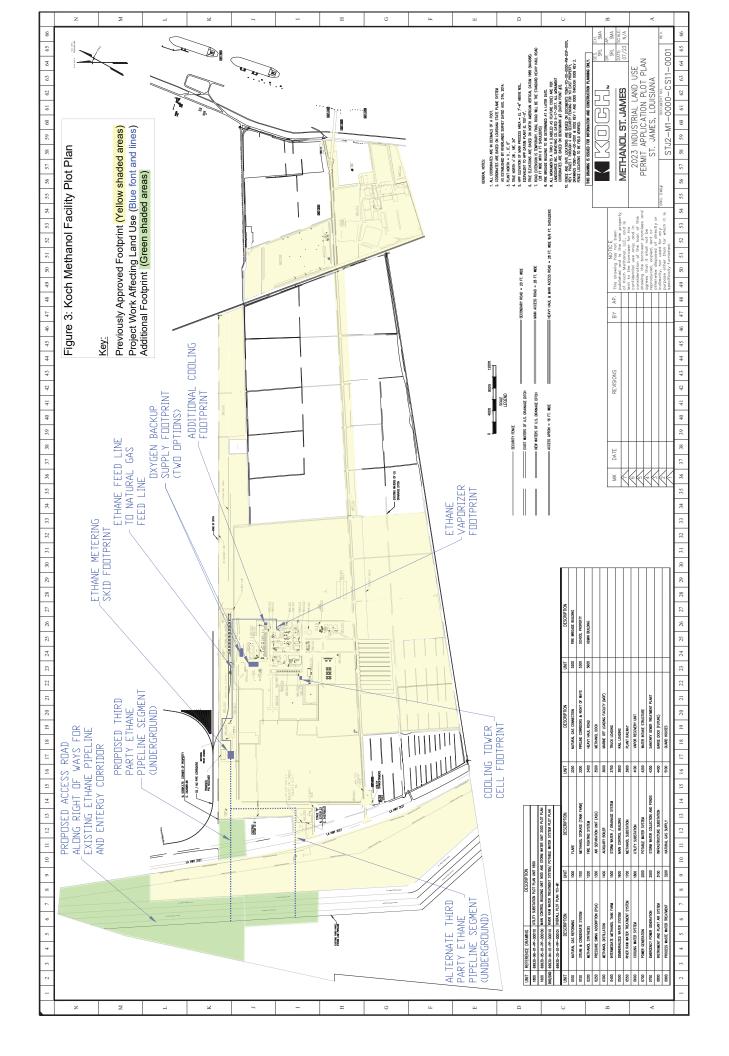
### Figure 2

#### Facility Property Boundary





### Figure 3 Facility Plot Plan





### Figure 4

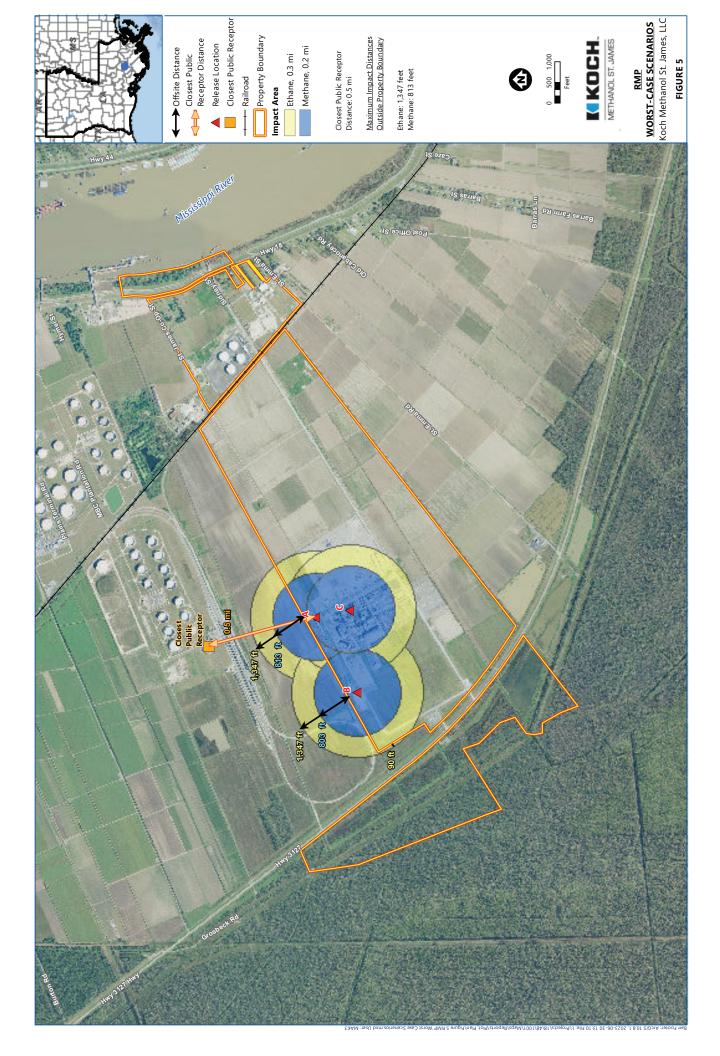
### Section 82-25(g)(3)a. Sites





### Figure 5

#### **RMP Worst-Case Scenarios**





### Attachment 1

#### Hazardous Materials Classifications

#### HAZARDOUS MATERIALS CLASSIFICATION

BLUE Diamond Health Hazard

4 Deadly3 Extreme Danger2 Hazardous1 Slightly Hazardous0 Normal Material

RED Diamond Fire Hazard (Flash Point)

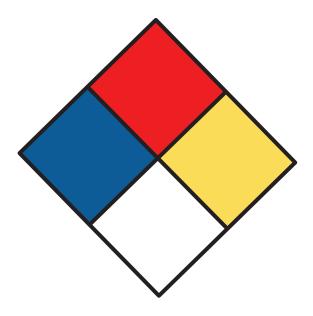
4 Below 73°F 3 Below 100°F 2 Above 100°F, Not Exceeding 200°F 1 Above 200°F 0 Will Not Burn

YELLOW Diamond Reactivity

4 May Detonate3 Shock and Heat; May Detonate2 Violent Chemical Change1 Unstable if Heated0 Stable

WHITE Diamond Special Hazard

ACID Acid ALK Alkali COR Corrosive OXY Oxidizer & Radioactive W Use No Water



# **Hazardous Materials Classifications**

MATERIAL	CAS NUMBER	HEALTH	FIRE HAZARD	REACTIVITY	SPECIAL
		HAZARD			HAZARD
Methanol	67-56-1	3	3	0	
Aqua Ammonia (5-	1336-21-6,	3	0	0	
19.9%)	7732-18-5,				
	7664-41-7				
Natural Gas, Dry	68410-63-9	1	4	0	
DNX	13463-67-7,	3	0	0	
	7631-86-9,				
	65997-17-3,				
	1314-35-8,				
	1314-62-1				
Purolite® CT252	69011-20-7,	0	0	0	
	7732-18-5				
ActiSorb® S2 Extr	1314-13-2	2	0	0	
4.5 0230					
Oxygen, MediPure	7782-44-7	0	0	0	
Oxygen (Praxair)					
HDMax <sup>®</sup> 200 TRX	1313-27-5,	2	0	0	
2.5 (aka Secondary	1307-96-6,	-	Ŭ		
Reformer 103-D)	1344-28-1				
Activated Alumina	1344-28-1	1	0	1	
MEGAMAX® 800	1317-38-0,	2	0	0	
Tab 6x4	1314-13-2,	-	Ŭ		
	1344-28-1,				
	7782-42-5				
ReforMax <sup>®</sup> 100 Tab	1313-99-1,	2	0	0	
4.7x4.7	1344-28-1,				
	1309-48-4,				
	7631-86-9,				
	1305-78-8,				
	68188-83-0				
ReforMax <sup>®</sup> 330 LDP	1344-28-1,	2	0	0	
19x12	1313-99-1,				
	1305-78-8				
Acetylene	74-86-2	1	4	3	
AMBERLYST <sup>™</sup> 40	39389-20-3,	3	1	0	
WET Resin	7732-18-5				
AQUACHLOR 12.5%	7681-52-9,	3	0	0	
NSF SODIUM	1310-73-2				
HYPOCHLORITE					
Acrylic Bonding	7732-18-5,	1	0	0	
Agent J40	4719-04-4				

MATERIAL	CAS NUMBER	HEALTH	FIRE HAZARD	REACTIVITY	SPECIAL
Carbon Steel Electrodes and Rods for Gas Shielded Arc Welding	7439-89-6, 7440-39-3, 13463-67-7, 1317-95-9, 7439-93-2, 7429-90-5, 7439-95-4, 7440-02-0, 7440-21-3, 1309-48-4, 1344-28-1, 7439-98-7, 7440-50-8, 7440-67-7, 7631-86-9, 7440-22-6	3	0	0	HAZARD
CAULK 100XT COMPONENT A	7440-32-6 67-64-1, 108- 10-1	2	3	0	
CAULK 100XT COMPONENT B	25707-70-4, 64-17-5, 67-56-1	2	3	1	
CO2/Argon Shielding Mix	7440-37-1, 124-38-9	CO2 - 2 Argon - 0	0	0	
Foremost 3345 Concrete Surface Retarder	1310-73-2	1	0	0	
Victory Blue Diesel Exhaust Fluid	7732-18-5, 57-13-6	1	0	0	
Marathon Petroleum No. 2 Ultra Low Sulfur Diesel Dyed 15 ppm Sulfur Max	68476-34-6, 8008-20-6, 1159170-26-9, 928771-01-1, 91-20-3	1	2	0	
Universal Gold <sup>®C6</sup> 1%/3% Alcohol Resistant Aqueous Film Forming Foam Concentrate (AR- AFFF)	142-87-0, 132778-08-6, 34590-94-6	0	0	0	
Hand Sanitizer Isopropyl - 75%	67-63-0	2	3	0	
Hydrochloric Acid,ACS	7647-01-0, 7732018-5	3	0	1	
Nitrogen	7727-37-9	0	0	0	
Nitrogen Liquid Propane	7727-37-9 74-98-6	2	4	0	

MATERIAL	CAS NUMBER	HEALTH HAZARD	FIRE HAZARD	REACTIVITY	SPECIAL HAZARD
GASOLINE, UNLEADED AUTOMOTIVE	64-17-5, 71-43-2, 100-41-4, 110-54-3, 91-20-3, 95-63-6, 108-88-3, 25551-13-7, 1330-20-7	1	3	0	
CL2840	7632-00-0, 64665-57-2, 12179-04-3	3	0	0	
CL2904	64665-57-2	2	0	0	
P8281L(N)	7705-08-0, 7647-01-0	3	0	4	
SODIUM HYDROXIDE 60% MEM NSF	1310-73-2	3	0	1	
PB809	N/A	0	2	0	
Sulfuric Acid, All Grades	7664-93-9	3	0	2	
ChemTreat P8315E	N/A	0	1	0	
ChemTreat BL1303	1310-73-2	3	0	1	
ChemTreatFO180	N/A	1	0	0	
SODIUM HYDROXIDE 20% MEM 1-WAY	1310-73-2	3	0	1	
ChemTreat PB8045	7783-20-2, 57-13-6, 68333-79-9, 6484-52-2	1	0	0	
ChemTreat P873L	N/A	0	0	0	
ChemTreat P880L	N/A	0	0	0	
ChemTreat P824L	N/A	0	0	0	
ChemTreat P893L	12042-91-0	1	0	0	
ChemTreat OC9103	107-22-2, 107-21-1	2	0	0	
CD24	7664-93-9	3	0	0	
ChemTreat CL25D	7758-19-2	3	1	0	
CL4520	7783-20-2	1	0	0	
PurDOX™ BCD	7775-09-9, 7722-84-1	4	0	1	
Sulfuric Acid Solution 78%	7664-93-9	3	0	2	
ChemTreat CT775	7664-38-2	3	0	0	
ChemTreat P817E	N/A	0	1	0	
ChemTreat P835E	N/A	0	1	0	
BL124	7631-90-5	2	0	0	

MATERIAL	CAS NUMBER	HEALTH	FIRE HAZARD	REACTIVITY	SPECIAL
Chemical Treatment	26172-55-4,	HAZARD	0	0	HAZARD
CL2150	2682-20-4	5	0	0	
ChemTreat CL4132	202420-04-0,	3	1	0	
Chemineat CL4152	64665-57-2,	5	1	0	
	1310-73-2				
Quadrasperse ®	37971-36-1	2	0	0	
CL5859					
ChemTreat CL1495	7778-53-2,	1	0	0	
	7320-34-5				
BL1746	1310-73-2	3	0	0	
BL1744	1310-73-2	3	0	0	
ChemTreat BL1794	7601-54-9	1	0	0	
ChemTreat BL1260	497-18-7	1	0	0	
ChemTreat BL1559	108–91–8, 5332–73–0	2	2	0	
ChemTreat BL1797	10124-56-8,	3	0	1	
	1310-73-2				
СТ907	9036-19-5,	1	0	0	
	26172-55-4				
CL5680	1310-73-2	3	0	0	
Chemical Treatment	10222-01-2	3	1	1	
CL206					
ChemTreat BL1302	1310-73-2	3	0	1	
Green Magic® GM1000	N/A	0	0	0	
Dissolvine E-39	64-02-8,	2	0	0	
	1310-73-2,				
	5064-31-3				
ChemTreat CL240	N/A	0	0	0	
CN202	N/A	0	0	0	
DryTec Calcium	7778-54-3,	3	0	1	
Hypochlorite	7647-14-5,				
Granular	10137-74-3,				
	10043-52-4,				
	1305-62-0, 471-34-1,				
	7732-18-5				
DPD Free Chlorine	7558-79-4,	2	0	0	
Reagent	139-33-3	2	Ŭ	0	
DPD Total Chlorine	7558-79-4,	1	1	0	
Reagent	7681-11-0				
PhosVer® 3	7790-62-7,	3	0	0	
Phosphate Reagent	50-81-7,				
_	7631-95-0,				
	10378-23-1,				
	28300-74-5				
NitriVer <sup>®</sup> 2 Nitrite	63589-59-3,	3	0	0	
Reagent	7790-62-7				

MATERIAL	CAS NUMBER	HEALTH HAZARD	FIRE HAZARD	REACTIVITY	SPECIAL HAZARD
Buffer Solution pH 4.01 ± 0.02	50-00-0, 67-56-1	0	0	0	
Buffer Solution pH 7.00 ± 0.02	7558-79-4, 10377-60-3, 26172-55-4, 2682-20-4	0	0	0	
pH Storage Solution	7558-79-4, 111-30-8	0	0	0	
DEHA 2 Reagent	7697-37-2, 10421-48-4	3	0	0	
Molybdate 3 Reagent for Silica	7664-93-9, 7681-38-1, 7782-91-4	3	1	0	
Liquid Caustic Soda 50% Membrane Grade	1310-73-2	3	0	1	
ChemTreat CN220	6834-92-0, 64-02-8, 107-98-2	3	0	1	
ZEP-O-CLEAN_12CS QTS	7647-01-0	3	0	0	
Citric Acid	77-92-9	2	0	0	
FerroVer® (25 mL) Iron Reagent Foil Packs	10102-17-7, 92798-16-8, 775-14-6, 68-04-2, 7681-57-4	2	0	1	
2301-49 FerroZine Iron Regent	5421-46-5, 7732-18-5, 68-11-1, 69898-45-9	2	0	0	
Chlorophosphonazo Indicator Solution	10191-18-1, 10424-65-4	3	0	0	
Buffer Solution pH 10.01 ± 0.02	N/A	0	0	0	
Crude Glycerine 78%	56-81-5, 7732-18-5, 67-56-1	1	0	0	



# Attachment 2

# Safety Data Sheets

**Types of Substances Produced / Stored** 

MATERIAL	CAS #
Products	·
Methanol	67-56-1
Raw Materials	
Ethane	74-84-0
Natural Gas, Dry	68410-63-9
Aqua Ammonia (5-19.9%)	1336-21-6, 7732-18-5, 7664-41-7
Oxygen, MediPure Oxygen (Praxair)	7782-44-7
Catalyst	1102-44-7
-	
DNX	13463-67-7, 7631-86-9, 65997-17-3, 1314-35-8, 1314- 62-1
Duralita® CT252	
Purolite® CT252	69011-20-7, 7732-18-5 1314-13-2
ActiSorb® S2 Extr 4.5 0230	
HDMax <sup>®</sup> 200 TRX 2.5 (aka Secondary Reformer 103-D) Activated Alumina	1313-27-5, 1307-96-6, 1344-28-1 1344-28-1
MEGAMAX ® 800 Tab 6x4 ReforMax ® 100 Tab 4.7x4.7	1317-38-0, 1314-13-2, 1344-28-1, 7782-42-5 1313-99-1, 1344-28-1, 1309-48-4, 7631-86-9, 1305-78-8,
	68188-83-0
ReforMax <sup>®</sup> 330 LDP 19x12	1344-28-1, 1313-99-1, 1305-78-8
AMBERLYST <sup>TM</sup> 40 WET Resin	39389-20-3, 7732-18-5
Maintenance Products	55505 20 5, 1152 10 5
	74-86-2
Acetylene Acrylic Bonding Agent J40	7732-18-5, 4719-04-4
Carbon Steel Electrodes and Rods for Gas Shielded Arc	7439-89-6, 7440-39-3, 13463-67-7, 1317-95-9, 7439-93-
Welding	2, 7429-90-5, 7439-95-4, 7440-02-0, 7440-21-3, 1309-
Welding	48-4, 1344-28-1, 7439-98-7, 7440-50-8, 7440-67-7,
	7631-86-9, 7440-32-6
CAULK 100XT COMPONENT A	67-64-1, 108-10-1
CAULK 100XT COMPONENT B	25707-70-4, 64-17-5, 67-56-1
CO2/Argon Shielding Mix	7440-37-1, 124-38-9
CONCRETE SURFACE RETARDER S	1310-73-2
Nitrogen	7727-37-9
Nitrogen Liquid	7727-37-9
ZEP-O-CLEAN_12CS QTS	7647-01-0
Fuels	1
Victory Blue Diesel Exhaust Fluid	7732-18-5, 57-13-6
Marathon Petroleum No. 2 Ultra Low Sulfur Diesel	68476-34-6, 8008-20-6, 1159170-26-9, 928771-01-1, 91-
Dyed 15 ppm Sulfur Max	20-3
GASOLINE, UNLEADED AUTOMOTIVE	64-17-5, 71-43-2, 100-41-4, 110-54-3, 91-20-3, 95-63-6,
	108-88-3, 25551-13-7, 1330-20-7
Propane	74-98-6
Fire Fighting Foam	
Universal Gold <sup>® C6</sup> 1%/3% Alcohol Resistant Aqueous	142-87-0, 132778-08-6, 34590-94-6
Film Forming Foam Concentrate (AR-AFFF)	
Water Treatment Chemicals	1
Hydrochloric Acid,ACS	7647-01-0, 7732018-5
AQUACHLOR 12.5% NSF SODIUM HYPOCHLORITE	7681-52-9, 1310-73-2
CL2840	7632-00-0, 64665-57-2, 12179-04-3
	1052-00-0, 04005-57-2, 12173-04-5

Materials and their suppliers may be subject to change. Products similar in nature may be used. Any new chemicals will meet site review procedures and required agency notifications will be provided.

P8281L(N)	7705-08-0, 7647-01-0
SODIUM HYDROXIDE 60% MEM NSF	1310-73-2
PB809	N/A
Sulfuric Acid, All Grades	7664-93-9
Crude Glycerine 78%	56-81-5, 7732-18-5, 67-56-1
ChemTreat P8315E	N/A
ChemTreat BL1303	1310-73-2
ChemTreatFO180	N/A
SODIUM HYDROXIDE 20% MEM 1-WAY	1310-73-2
ChemTreat PB8045	7783-20-2, 57-13-6, 68333-79-9, 6484-52-2
ChemTreat P873L	N/A
ChemTreat P880L	N/A
ChemTreat P824L	N/A
ChemTreat P893L	12042-91-0
ChemTreat OC9103	107-22-2, 107-21-1
CD24	7664-93-9
ChemTreat CL25D	7758-19-2
CL4520	7783-20-2
PurDOX™ BCD	7775-09-9, 7722-84-1
Sulfuric Acid Solution 78%	7664-93-9
ChemTreat CT775	7664-38-2
ChemTreat P817E	N/A
ChemTreat P835E	N/A
BL124	7631-90-5
Chemical Treatment CL2150	26172-55-4, 2682-20-4
ChemTreat CL4132	202420-04-0, 64665-57-2, 1310-73-2
Quadrasperse® CL5859	37971-36-1
ChemTreat CL1495	7778-53-2, 7320-34-5
BL1746	1310-73-2
BL1744	1310-73-2
ChemTreat BL1794	7601-54-9
ChemTreat BL1260	497-18-7
ChemTreat BL1559	108-91-8, 5332-73-0
ChemTreat BL1797	10124-56-8, 1310-73-2
СТ907	9036-19-5, 26172-55-4
CL5680	1310-73-2
Chemical Treatment CL206	10222-01-2
ChemTreat BL1302	1310-73-2
Green Magic® GM1000	N/A
Dissolvine E-39	64-02-8, 1310-73-2, 5064-31-3
ChemTreat CL240	N/A
CN202	N/A
DryTec Calcium Hypochlorite Granular	7778-54-3, 7647-14-5, 10137-74-3, 10043-52-4, 1305-
	62-0, 471-34-1, 7732-18-5
Liquid Caustic Soda 50% Membrane Grade	1310-73-2
ChemTreat CN220	6834-92-0, 64-02-8, 107-98-2
Citric Acid	77-92-9
Lab Chemicals	
Chlorophosphonazo Indicator Solution	10191-18-1, 10424-65-4
Buffer Solution pH 10.01 $\pm$ 0.02	N/A
Buffer Solution pH 4.01 $\pm$ 0.02	50-00-0, 67-56-1

Materials and their suppliers may be subject to change. Products similar in nature may be used. Any new chemicals will meet site review procedures and required agency notifications will be provided.

Buffer Solution pH 7.00 ± 0.02	7558-79-4, 10377-60-3, 26172-55-4, 2682-20-4
pH Storage Solution	7558-79-4, 111-30-8
Molybdate 3 Reagent for Silica	7664-93-9, 7681-38-1, 7782-91-4
DPD Free Chlorine Reagent	7558-79-4, 139-33-3
DPD Total Chlorine Reagent	7558-79-4, 7681-11-0
PhosVer <sup>®</sup> 3 Phosphate Reagent	7790-62-7, 50-81-7, 7631-95-0, 10378-23-1, 28300-74-5
NitriVer <sup>®</sup> 2 Nitrite Reagent	63589-59-3, 7790-62-7
DEHA 2 Reagent	7697-37-2, 10421-48-4
FerroVer <sup>®</sup> (25 mL) Iron Reagent Foil Packs	10102-17-7, 92798-16-8, 775-14-6, 68-04-2, 7681-57-4
2301-49 FerroZine Iron Regent	5421-46-5, 7732-18-5, 68-11-1, 69898-45-9



# SAFETY DATA SHEET

Product identifier	CL2840				
Other means of identification					
Product code	CL2840				
Recommended use	Closed System Treatment				
Recommended restrictions	None known.				
Manufacturer/Importer/Supplie	r/Distributor information				
Manufacturer					
Company name	ChemTreat				
Address	5640 Cox Road Glen Allen, VA 23060				
	United States				
Telephone	800-648-4579				
E-mail	Not available.				
Emergency phone number	800-424-9300				
2. Hazard(s) identification	n				
Physical hazards	Not classified.				
lealth hazards	Acute toxicity, oral	Category 3			
	Skin corrosion/irritation	Category 1B			
	Serious eye damage/eye irritation	Category 1			
	Reproductive toxicity	Category 2			
Environmental hazards	Hazardous to the aquatic environment, acute hazard	Category 3			
OSHA defined hazards	Not classified.				
Signal word	Danger				
Hazard statement	Toxic if swallowed. Causes severe skin burns Suspected of damaging fertility or the unborn	and eye damage. Causes serious eye damage. child. Harmful to aquatic life.			
Precautionary statement					
Prevention					
Response	group notice the set of the set o				
Storage	Store locked up.				
Disposal	Dispose of contents/container in accordance v	vith local/regional/national/international regulations.			
Hazard(s) not otherwise classified (HNOC)	None known.				
Supplemental information	None.				

Environmental precautions	Avoid release to the environment. Info environmental releases. Prevent furth drains, water courses or onto the grou	er leakage or spillage if safe t			
7. Handling and storage					
Precautions for safe handling	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe misi/vapors. Do not get in eyes, on skin, or on clothing. Do not taste or swallow. Avoid prolonged exposure. When using, do not ead, drink or smoke. Pregnant or breastfeeding women must not handle this product. Should be handled in closed systems, if possible. Provide adequate ventilation. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Observe good industrial hyviene practices.				
Conditions for safe storage, including any incompatibilities	Store locked up. Store in tightly close Section 10 of the SDS).	d container. Store away from i	incompatible materials (see		
8. Exposure controls/pers	onal protection				
	the only constituents of the product wh ents have no known exposure limits.	ich have a PEL, TLV or other	recommended exposure limit.		
US. ACGIH Threshold Limit Components	Values Type	Value	Form		
Disodium tetraborate pentahydrate (CAS 12179-04-3)	STEL	6 mg/m3	Inhalable fraction.		
	TWA	2 mg/m3	Inhalable fraction.		
US. NIOSH: Pocket Guide to	Chemical Hazards				
Components	Туре	Value			
Disodium tetraborate pentahydrate (CAS 12179-04-3)	TWA	1 mg/m3			
Biological limit values	No biological exposure limits noted for	r the ingredient(s).			
Appropriate engineering controls	Good general ventilation should be us applicable, use process enclosures, la maintain airborne levels below recom established, maintain airborne levels shower must be available when hand	ocal exhaust ventilation, or oth mended exposure limits. If exp to an acceptable level. Eye wa	ner engineering controls to posure limits have not been		
Individual protection measures, Eye/face protection	such as personal protective equipm Wear safety glasses with side shields		respirator, if needed.		
Skin protection Hand protection	Wear appropriate chemical resistant	gloves.			
Other	Wear appropriate chemical resistant of	clothing. Use of an impervious	apron is recommended.		
Respiratory protection	If engineering controls do not maintai limits (where applicable) or to an acce been established), an approved respi	eptable level (in countries whe			
Thermal hazards	Wear appropriate thermal protective of	lothing, when necessary.			
General hygiene considerations	Observe any medical surveillance rec good personal hygiene measures, su drinking, and/or smoking. Routinely v contaminants.	ch as washing after handling t	he material and before eating,		
	properties				
9. Physical and chemical					
	Liquid.				
Appearance	Liquid. Liquid.				
Appearance Physical state					
Appearance Physical state Form Color	Liquid.				
Appearance Physical state Form	Liquid. Yellow				

Materiar	ame. GL2040	
CI 2940	Version #- 01	lecue date: 00 20 2022

340 Version #: 01 Issue date: 09-29-2022

3. Composition/information	on on ingredients				
Mixtures					
Chemical name	Common name and synonyms	CAS number	%		
Sodium nitrite		7632-00-0	15 - < 40		
Sodium tolyltriazole		64665-57-2	1 - < 3		
Disodium tetraborate pentahydi	rate	12179-04-3	0.1 - < 0.5		
Other components below report	table levels		60 - < 70		
4. First-aid measures					
Inhalation	Move to fresh air. Call a physician if symptom	ns develop or persist.			
Skin contact	Take off immediately all contaminated clothin poison control center immediately. Chemical contaminated clothing before reuse.				
Eye contact	Immediately flush eyes with plenty of water for present and easy to do. Continue rinsing. Cal				
Ingestion	Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting, if vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Do not use mouth-to-mouth method if victim ingested the substance. Induce artificial respiration with the aid a pocket mask equipped with a one-way valve or other proper respiratory medical device.				
Most important symptoms/effects, acute and delayed	Burning pain and severe corrosive skin damage. Cause serious ever damage. Synthesis seriou				
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Chemical burns: Flush with immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim warm. Keep victim und observation. Symptoms may be delayed.				
General information	IF exposed or concerned: Get medical advice (show the label where possible). Ensure that involved, and take precautions to protect ther attendance.	medical personnel are aware	of the material(s)		
5. Fire-fighting measures					
Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carb	oon dioxide (CO2).			
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as the	is will spread the fire.			
Specific hazards arising from the chemical	During fire, gases hazardous to health may b	e formed.			
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full p	rotective clothing must be wo	n in case of fire.		
Fire fighting equipment/instructions	Move containers from fire area if you can do	so without risk.			
Specific methods	Use standard firefighting procedures and con	sider the hazards of other inv	olved materials.		
General fire hazards	No unusual fire or explosion hazards noted.				
6. Accidental release mea	sures				
Personal precautions,	Keep unnecessary personnel away. Keep pe	onle away from and upwind o	fspill/leak Wear		
protective equipment and emergency procedures	appropriate protective equipment and clothing touch damaged containers or spilled material Ensure adequate ventilation. Local authorities contained. For personal protection, see section	g during clean-up. Do not brea unless wearing appropriate p s should be advised if significa	the mist/vapors. Do no rotective clothing.		
Methods and materials for	Prevent product from entering drains.				
containment and cleaning up	Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flux harea with water.				
	Small Spills: Wipe up with absorbent material remove residual contamination.	I (e.g. cloth, fleece). Clean su	face thoroughly to		
	Never return spills to original containers for re	e-use. For waste disposal, see	section 13 of the SDS		

Material name: CL2840 CL2840 Version #: 01 Issue date: 09-29-2022

Melting point/freezing point -9.40 °F (-23.00 °C) Initial boiling point and boiling Not available. range Flash point Not available. Evaporation rate Not available. . Flammability (solid, gas) Not applicable Upper/lower flammability or explosive limits Flammability limit - lower (%) Flammability limit - upper Not available. (%) Explosive limit - lower (%) Not available. Explosive limit - upper (%) Not available. Vapor pressure Not available Vapor density Not available. Relative density Not available Solubility(ies) Solubility (water) Not available Partition coefficient (n-octanol/water) Auto-ignition temperature Not available. Not available. Decomposition temperature Not available. Viscosity 0 - 200 cps Other information Explosive properties Not explosive. Oxidizing properties Not oxidizing. 11.02 Pounds per gallon Specific gravity 1.3 - 1.32 @ 20C voc 0 %w/w 10. Stability and reactivity Reactivity Chemical stability Reacts violently with strong acids. This product may react with oxidizing agents. Material is stable under normal conditions. Possibility of hazardous reactions Conditions to avoid Hazardous polymerization does not occur Contact with incompatible materials. Do not mix with other chemicals. Incompatible materials Hazardous decomposition products Acids. Oxidizing agents. No hazardous decomposition products are known. 11. Toxicological information Information on likely routes of exposure
Inhalation May cause irritation to the respiratory system. Prolonged inhalation may be harmful. Skin contact Causes severe skin burns. Eye contact Causes serious eye damage. Ingestion Toxic if swallowed. Causes digestive tract burns. Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, learing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Symptoms related to the physical, chemical and toxicological characteristics Information on toxicological effects Toxic if swallowed Acute toxicity

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Disodium tetraborate pentahydrate	Species		Test Results
praourum tetraporate pentanyurat	e (CAS 12179-04	43)	
Acute			
Dermal			
LD50	Rabbit	>	1055 mg/kg
Oral			
LD50	Rat	2	660 mg/kg
Sodium nitrite (CAS 7632-00-0)			
Acute			
Oral			
LD50	Rat	8	5 mg/kg
Skin corrosion/irritation	Causes sever	e skin burns and eye damage.	
Serious eye damage/eye		is eye damage.	
irritation		)	
Respiratory or skin sensitizatio	n		
Respiratory sensitization	Not a respirate	ory sensitizer.	
Skin sensitization		s not expected to cause skin sensitization.	
Germ cell mutagenicity		ble to indicate product or any component	
com con matagomony	mutagenic or g		
Carcinogenicity	Risk of cancer	cannot be excluded with prolonged expo	sure.
IARC Monographs. Overall	Evaluation of C	arcinogenicity	
Sodium nitrite (CAS 763) OSHA Specifically Regulate Not regulated.	ed Substances (		ic to humans.
US. National Toxicology Pro Not listed.	ogram (NTP) Re	port on Carcinogens	
Reproductive toxicity	Suspected of	damaging fertility or the unborn child.	
Specific target organ toxicity - single exposure	Not classified.		
Specific target organ toxicity - repeated exposure	Not classified.		
Aspiration hazard	Not an aspirat	ion hazard.	
Chronic effects	Prolonged inh	alation may be harmful. Prolonged exposi	ure may cause chronic effects.
40 Ecological informatio	-		
12. Ecological informatio			
	Harmful to aqu	uatic life	
•			
Product		Species	Test Results
•			Test Results
			Test Results
Product CL2840	LC50		Test Results 6.43 mg/l, 48 hours
Product CL2840 Aquatic	LC50	Species	
Product CL2840 Aquatic	LC50	Species Ceriodaphnia dubia Daphnia pulex	6.43 mg/l, 48 hours 27 mg/l, 48 hours
Product CL2840 Aquatic Crustacea		Species Ceriodaphnia dubia	6.43 mg/l, 48 hours 27 mg/l, 48 hours ) 76.6 mg/l, 96 hours
Product CL2840 Aquatic Crustacea Fish		Species Ceriodaphnia dubia Daphnia pulex Fathead minnow (Pimephales promelas	6.43 mg/l, 48 hours 27 mg/l, 48 hours 76.6 mg/l, 96 hours 65 mg/l, 48 hours
Product CL2840 Aquatic Crustacea Fish Components	LC50	Species Ceriodaphnia dubia Daphnia pulex	6.43 mg/l, 48 hours 27 mg/l, 48 hours ) 76.6 mg/l, 96 hours
Product CL2840 Aquatic Crustacea Fish Components Sodium tolyltriazole (CAS 644 Aquatic	LC50	Species Ceriodaphnia dubia Daphnia pulex Fathead minnow (Pimephales promelas	6.43 mg/l, 48 hours 27 mg/l, 48 hours 76.6 mg/l, 96 hours 65 mg/l, 48 hours
Product CL2840 Aquatic Crustacea Fish Components Sodium tolyltriazole (CAS 644 Aquatic Acute	LC50 665-57-2)	Species Ceriodaphnia dubia Daphnia pulex Fathead minnow (Pimephales promelas Species	6.43 mg/l, 48 hours 27 mg/l, 48 hours 76.6 mg/l, 96 hours 65 mg/l, 48 hours <b>Test Results</b>
Product CL2840 Aquatic Crustacea Fish Components Sodium tolythiazole (CAS 644 Aquatic Acute Crustacea	LC50 665-57-2) LC50	Species Ceriodaphnia dubia Daphnia pulex Fathead minnow (Pimephales promelas Species Water flea (Ceriodaphnia dubia)	6.43 mg/l, 48 hours 27 mg/l, 48 hours ) 76.6 mg/l, 96 hours 65 mg/l, 48 hours <b>Test Results</b> 141.789 mg/l, 48 h
Product CL2840 Aquatic Crustacea Fish Sodium tolythiazole (CAS 640 Aquatic Acute	LC50 665-57-2)	Species Ceriodaphnia dubia Daphnia pulex Fathead minnow (Pimephales promelas Species	6.43 mg/l, 48 hours 27 mg/l, 48 hours ) 76.6 mg/l, 96 hours 65 mg/l, 48 hours <b>Test Results</b> 141.789 mg/l, 48 h
Product CL2840 Aquatic Crustacea Fish Components Sodium tolyltriazole (CAS 64t Aquatic Acute Crustacea	LC50 665-57-2) LC50 LC50	Species Ceriodaphnia dubia Daphnia pulex Fathead minnow (Pimephales promelas Species Water flea (Ceriodaphnia dubia)	6.43 mg/l, 48 hours 27 mg/l, 48 hours ) 76.6 mg/l, 96 hours 65 mg/l, 48 hours <b>Test Results</b> 141.789 mg/l, 48 h ) 70 - 154 mg/l, 96 h
Product CL2840 Aquatic Crustacea Fish Components Sodium tolyttriazole (CAS 640 Aquatic Acute Crustacea Fish	LC50 665-57-2) LC50 LC50	Species Ceriodaphnia dubia Daphnia pulex Fathead minnow (Pimephales promelas Species Water flea (Ceriodaphnia dubia) Fathead minnow (Pimephales promelas ilable on the degradability of any ingredie	6.43 mg/l, 48 hours 27 mg/l, 48 hours ) 76.6 mg/l, 96 hours 65 mg/l, 48 hours <b>Test Results</b> 141.789 mg/l, 48 h ) 70 - 154 mg/l, 96 h

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not established.			
DOT				
IATA; IMDG				
15. Regulatory information	n			
US federal regulations	This product is a "Ha Standard, 29 CFR 19		efined by the OSHA Hazard Comr	nunication
Toxic Substances Control A	Act (TSCA)			
TSCA Section 12(b) Ex	oort Notification (40 C	FR 707, Subpt. D)		
Sodium nitrite (CAS			me Export Notification only.	
CERCLA Hazardous Substa				
Sodium nitrite (CAS 763 SARA 304 Emergency relea		Listed.		
Not regulated. OSHA Specifically Regulate	d Substances (29 CFF	R 1910.1001-1053)		
Not regulated.				
Superfund Amendments and Re SARA 302 Extremely hazar		986 (SARA)		
Not listed.				
SARA 311/312 Hazardous chemical	Yes			
Classified hazard categories	Acute toxicity (any ro Skin corrosion or irrit: Serious eye damage Reproductive toxicity	ation		
SARA 313 (TRI reporting)				
Chemical name		CAS number	% by wt.	
Sodium nitrite		7632-00-0	15 - < 40	
Other federal regulations				
Clean Air Act (CAA) Section	112 Hazardous Air P	ollutants (HAPs) List		
Not regulated.			50 00 100	
Clean Air Act (CAA) Section	112(r) Accidental Re	ease Prevention (40 C	FR 68.130)	
Not regulated.	Not an evilate d			
Safe Drinking Water Act	Not regulated.			

Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation	
	potential, endocrine disruption, global warming potential) are expected from this component	Ł.
13. Disposal consideration	IS	
Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Incinerer material under controlled conditions in an approved incinerator. Do not allow this material to into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical container. Dispose of contents/container in accordance with local/regional/national/internati regulations.	0
Local disposal regulations	Dispose in accordance with all applicable regulations.	
Hazardous waste code	D002: Waste Corrosive material [pH <=2 or $\Rightarrow$ 12.5, or corrosive to steel] The waste code should be assigned in discussion between the user, the producer and the v disposal company.	
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see Disposal instructions).	
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after conta emptied. Empty containers should be taken to an approved waste handling site for recycling disposal.	
14. Transport information		Ī
DOT		Ĩ
UN number	UN3266	
UN proper shipping name	Corrosive liquid, basic, inorganic, n.o.s. (Sodium nitrite RQ = 260 LBS, Sodium hydroxide R 133333 LBS)	ł
Transport hazard class(es)	,	
Class	8	
Subsidiary risk		
Label(s)	8	
Packing group	II	
	Read safety instructions, SDS and emergency procedures before handling.	
Special provisions	B2, IB2, T11, TP2, TP27	
Packaging exceptions	154 202	
Packaging non bulk Packaging bulk	202	
IATA	242	
UN number	UN3266	
UN proper shipping name Transport hazard class(es)	Corrosive liquid, basic, inorganic, n.o.s. (Sodium nitrite and Sodium hydroxide)	
Class	8	
Subsidiary risk		
Packing group	II	
Environmental hazards	No.	
ERG Code	8L	
Other information	Read safety instructions, SDS and emergency procedures before handling.	
Passenger and cargo aircraft	Allowed with restrictions.	
Cargo aircraft only IMDG	Allowed with restrictions.	
UN number	UN3266	
UN proper shipping name	CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S. (Sodium nitrite and Sodium hydroxide)	
Transport hazard class(es)		
Class Subsidiary risk	8	
Packing group	-	
Environmental hazards		
Marine pollutant	No.	
EmS	F-A, S-B	
	Read safety instructions, SDS and emergency procedures before handling.	
Material name: CL2840 CL2840 Version #:01 Issue date: 0		

US state regulations California Proposition 65 Inornia Proposition of California Sate Dinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins. For more information go to www.FSBWarnings.ca.gov. Nuclear Strategies (Strategies) (Strategi International Inventories Inventory name Australian Inventory of Chemical Substances (AICS) Domestic Substances List (DSL) Country(s) or region On inventory (yes/no)\* Australi Canada Canada Non-Domestic Substances List (NDSL) Inventory of Existing Chemical Substances in China (IECSC) China Europe European Inventory of Existing Commercial Chemical Substances (EINECS) Europe European List of Notified Chemical Substances (ELINCS) Inventory of Existing and New Chemical Substances (ENCS) Japan Korea Existing Chemicals List (ECL) New Zealand New Zealand Inventory Philippines Philippine Inventory of Chemicals and Chemical Substances (PICCS) Taiwan Chemical Substance Inventory (TCSI) 16. Other information, including date of preparation or last revision Issue date 09-29-2022 Version # 01 Health: 3\* HMIS® ratings Flammability: 0 Physical hazard: 0 Physical hażard: 0 Chem Treat cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improve use. The information in the sheet was written based on the best knowledge and experience currently available. Although the information is interesting to the set of the test of the storage and the storage and the storage regresentations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons recording same will chem Treat, Inc. be responsible for damages of any mature whatscover resulting from the use or reliance upon information. No representation or warranties, either expressed or implied, of merchantability, fitness for a particular purpose, or of any other nature are made hereunder with respect to information or the product to which information refers. Disclaimer

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Yes

Yes

No

Yes

Yes

No

Yes

Yes

Yes

Yes

Yes Yes



# SAFETY DATA SHEET

1. Identification			
Product identifier	CL2904		
Other means of identification			
Product code	CL2904		
Recommended use	Cooling Water Treatment		
Recommended restrictions	None known.		
Manufacturer/Importer/Supplie Manufacturer	r/Distributor information		
Company name	ChemTreat		
Address	5640 Cox Road		
	Glen Allen, VA 23060		
Telephone	United States 800-648-4579		
E-mail	Not available		
Emergency phone number	800-424-9300		
2. Hazard(s) identificatio			
Physical hazards	Not classified.		
Health hazards	Skin corrosion/irritation	Category 2	
realtri nazaros	Serious eye damage/eye irritation	Category 2 Category 2	
Environmental hazards	Not classified	Category 2	
	Not classified.		
OSHA defined hazards	Not classified.		
	$\checkmark$		
Signal word	Warning		
Hazard statement	Causes skin irritation. Causes serious eye	e irritation.	
Precautionary statement			
Prevention	Wash thoroughly after handling. Wear eye		
Response	If in eyes: Rinse cautiously with water for easy to do. Continue rinsing. If skin irritati persists: Get medical advice/attention. Ta	on occurs: Get medical advice/att	ention. If eye irritation
Storage	Store away from incompatible materials.		
Disposal	Dispose of waste and residues in accorda	nce with local authority requireme	ents.
Hazard(s) not otherwise classified (HNOC)	None known.		
Supplemental information	None.		
3. Composition/informat	on on ingredients		
Wixtures			
Chemical name	Common name and synonyms	CAS number	%
Sodium tolyltriazole		64665-57-2	1 - < 3
Other components below repo	rtable levels		90 - 100
4. First-aid measures			
nhalation	Move to fresh air. Call a physician if symp	toms develop or persist.	
Material name: CL2904			
			SDS

proprint engineering         Good grinral ventilation should be used. Ventilation rates should be matched on conditions. If         engineable use process enclosures, local chanus ventilation, or other engineering controls to         maintain airborne levels below recommended exposure limits. If exposure limits have not been         shower.         dividual protection measures, such as personal protective equipment         Eyuface protection         Wear safety glasses with side sheles (or goggles).         Ship protection         Wear appropriate chemical resistant gloves.         Other         Wear appropriate chemical resistant gloves.         Other         Wear appropriate chemical resistant gloves.         Thermal hazards         Wear appropriate thermal protective clothing,         Mear appropriate thermal protective clothing,         Mear appropriate thermal protective clothing, when necessary.         Incase of insufficient ventilation, wear suble respiratory equipment.         Thermal hazards         Wear appropriate thermal protective clothing, when necessary.         Incase of insufficient ventilation, and/or smoking. Routinely wash work clothing and protective         equipment to remove contaminants.         Physical state         Liquid.         Color         Staw         dor         Mid         dod tor threshold         Not available.         H         13 @ 20 C         Staw         dor         Mid vidue         dot threshold         Not available.         Veavaliable.         Veavaliable.         Yapprotexter         Physical state         Not available.         Yapprotexter         Physical state         Stary         Yapprotexter         Physical state         Stary         Yapprotexter         Yapp	Components	Туре	Value	Form
proprint engineering         Good general ventilation should be used. Ventilation rates should be matched on conditions. If         engineering controls to         maintain airborne levels below recommended exposure limits. If exposure limits have not been         shower.         relabilished, maintain airborne levels to an acceptable level. Provide eyewash station and safely         shower.         relabilished, maintain airborne levels to an acceptable level. Provide eyewash station and safely         shower.         relabilished, maintain airborne levels to an acceptable level. Provide eyewash station and safely         shower.         relabilished, maintain airborne levels to an acceptable level. Provide eyewash station and safely         shower.         relabilished, maintain airborne levels to an acceptable level. Provide eyewash station and safely         shower.         relabilished, maintain airborne levels to an acceptable level. Provide eyewash station and safely         shower.         relabilished, maintain airborne levels to an acceptable level. Provide eyewash station and safely         shower.         relabilished, maintain airborne levels to an acceptable level.         Provide eyewash station and safely         shower.         relabilished, maintain airborne levels to an acceptable level.         Provide eyewash station and safely         shower.         relabilished, maintain airborne levels to an acceptable level.         Provide eyewash station and safely         shower.         relabilished, maintain airborne levels to an acceptable level.         Provide eyewash station and safely         and before on the average propriate chemical resistant (down.         Thermal hazards         Wear appropriate chemical resistant (down.         Thermal hazards         Wear appropriate thermal protective colding, when necessary.         Beard and chemical resistant (down.         Provide eating, dinking, and/or snoking.         Roupolit Chemical Properties         Provide and chemical resistant (d		TWA	0.5 mg/m3	Respirable fraction.
appliciable, use process enclosures, local exhaust ventilation, or other angineering controls to maintain airborne levels before econsended exposure limits. Here not been established, maintain airborne levels bot an acceptable level. Provide eyewash station and safety shower. Individual protection Wear safety glasses with side shields (or goggles). Skin protection Hand protection Wear appropriate chemical resistant gloves. Other Wear appropriate chemical resistant dothing. Respiratory protection In case of insufficient ventilation, wear suitable respiratory equipment. Thermal hazards Wear appropriate beermal protective clothing, when necessary. Seareral hygieno onsiderations and before eating, diriking, and/or snoking. Respiratory protection In case of insufficient ventilation, wear suitable respiratory equipment. Thermal hazards Wear appropriate thermal protective clothing, when necessary. Seareral hygieno onsiderations and before eating, diriking, and/or snoking. Routinely wash work clothing and protective equipment to remove contaminants. 9. Physical state Liquid. Form Liquid. Color Straw Odor Mild Mid Mid Mid Mid Mid Mid Mid Mid Mid Mid	liological limit values	No biological exposure limits noted for	or the ingredient(s).	
Skin protection Hand protection         Wear appropriate chemical resistant gloves. Other         Wear appropriate chemical resistant clothing. Respiratory protection         In case of insufficient ventilation, wear suitable respiratory equipment. Thermal hazards         Wear appropriate thermal protective clothing, when necessary.           Seneral hygien onsiderations         Anaty sobserve good parsonal hygiene measures, such as washing after handling the material and thefore setting, dividing, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.           9. Physical and chemical properties           typesrance           Physical state         Liquid.           Color         Staw           Odor         Mild           Odor         Mild           Odor         Staw           Add reside         25.30 °F (-3.72 °C)           Initial boiling point and boiling         211.95 °F (99.97 °C) estimated           ange         Staw           Voporation rate         Not available.           Vapor Jobserve limits         Not available.           Flammability limit - uoper (%)         Not available.		applicable, use process enclosures, maintain airborne levels below recon established, maintain airborne levels	local exhaust ventilation, or oth nmended exposure limits. If ex	er engineering controls to posure limits have not been
Hand protection         Wear appropriate chemical resistant gloves.           Other         Wear appropriate chemical resistant gloves.           Other         In case of insufficient venilation, wear suitable respiratory equipment.           Thermal hazards         Wear appropriate thermal protective clothing, when necessary.           Beneral hygione         Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.           9. Physical and chemical properties         Vegerations           Physical state         Liquid.           Color         Straw           Odor         Mid           Odor         Not available.           H         13 @ 20 C           deling point/reszing point         25.30 °F (39.27 °C)           Itial boiling point and boiling         211.95 °F (99.97 °C) estimated           ange         211.95 °F (99.97 °C) estimated           ange/site         Not available.           Pismobility councils         Pismobility councils           Flarmability limit - lower (%)         Not available.           (%)         Not available.           Capor pressure         0.00001 hPa estimated           Solubility (wator)         Not available.				
Respiratory protection Themail hazards         In case of insufficient ventilation, wear suitable respiratory equipment.           Themail hazards         Wear appropriate thermal protective clobhing, when necessary.           Soneal hygins         Advays observe good personal hygine measures, such as weahing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clobhing and protective equipment to remove contaminants.           Physical and chemical "Forent"         Liquid.           Color         Siraw           Odor         Mild           Odor         Mild           Odor         Nat available.           Hilai boiling point freezing point         25.30 °F (-3.72 °C)           Initial boiling point and boiling ange         Not available.           Prome         Liquid.           Exposito intride colling point and boiling applicable.         Not available.           Prome         Not available.           Prome         Not available.           Prome         Not available.           Promotion rate         Not available.           Finamability ilmit - tower (%)         Not available.           (%)         Finamability ilmit - upper (%)           Finamability ilmit - upper (%)         Not available.           (%)         Stavilable.           Explosive limit - upper (		Wear appropriate chemical resistant	gloves.	
Thermal hazards         Wear appropriate thermal protective clothing, when necessary.           Seneral hygiene         Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.           9. Physical state         Liquid.           Form         Liquid.           Color         Straw           Odor         Mild           Odor         Mild           Odor         Not available.           Odir         Not available.           Odir         Not available.           State         Not available.           Seneral hygiene         Not available.           State         Not available.           (%)         Not available.           State         Not available.           (%)         Not available.           State         Not available.           (%)         Not available.           State         Not available.           State	Other	Wear appropriate chemical resistant	clothing.	
Beneral hygiene considerations         Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.           9. Physical and chemical properties           Sypearance           Physical state         Liquid.           Color         Straw           Odor         Mild           Odor threshold         Not available.           Heiting point and boiling ange         25.30 °F (-3.72 °C)           nitital boiling point and boiling ange         211.95 °F (99.97 °C) estimated ange           "ash point         Not available.           Evaporation rate         Not available.           Pipprilower finamability or explosive limits         Flammability limit - lower (%)           Flammability limit - lower (%)         Not available.           Falspoine limit - lower (%)         Not available.           Explosive limit - lower (%)         Not available.           Apor pressure Solubility (water)         Not available.           Solubility (water)         Not available.           Solubility (water)         Not available.           Apor pressure Solubility (water)         Not available.           Apor pressure Solubility (water)         Not available.           Not available.	Respiratory protection	In case of insufficient ventilation, we	ar suitable respiratory equipme	nt.
and before eating, drinking, and/or smoking. Routinely wash work diothing and protective equipment to remove contaminants.  Physical and chemical properties  Appearance Physical state Liquid. Form Liquid. Color Straw Dodor Mid Jobor threshold Not available. H 13 @ 20C Aelting point for 6/3.72 °C) Not available. Stapparator and by the state Not available. Stapparator Fianmability cost poisvie limits Fianmability isour poisvie limits Fianmability	Thermal hazards	Wear appropriate thermal protective	clothing, when necessary.	
Appearance         Physical state         Liquid.           Form         Liquid.           Color         Straw           Odor         Mild           Odor         Nild           Odor         Nild           Odor         Nild           Odor         Nild           Odor         Not available.           >H         13 @ 20C           Melting point and boiling         211.95 °F (9.97 °C) estimated           ange         Tish point         Not available.           Evaporation rate         Not available.           Paper/lower flammability or copclosive limits         Flammability is copclosive limits           Flammability limit - upper (%)         Not available.           (%)         Explosive limit - lower (%)         Not available.           Appor density         Not available.           Zapor pressure         0.00001 hPa estimated           Apor density         Not available.           Solubility(livel)         Solubility (water)           Not available.         Solubility (water)           Not available.         Partition coefficient           noctano/baster)         Not available.           Auto-ignition temperature         Not available.		and before eating, drinking, and/or si		
Physical state     Liquid.       Form     Liquid.       Color     Straw       Odor     Mid       Odor     Not available.       Odor     Not available.       H     13 @ 20 C       Mitling point/freezing point     25 30 °F (-3.72 °C)       Initial boiling point and boiling ange     211.95 °F (99.97 °C) estimated ange       Tash point     Not available.       Evaporation rate     Not available.       Jpper/lower flammability (solid, gas)     Not available.       Flammability limit - lower (%)     Not available.       Flammability limit - lower (%)     Not available.       Explosive limit - lower (%)     Not available.       Autor available.     Vot available.       Solubility (water)     Not available.       Solubility (water)     Not available.       Solubility (water)     Not available.       Partition coefficient nocofficient nocofficient nocofficient Not available.     Vot available.       Partition coefficient nocofficient Not available.     Vot available.       Partition coefficient nocofficient Not available.     Vot available.       Partition coefficient nocofficient nocofficie	<ol> <li>Physical and chemical p</li> </ol>	properties		
Form         Liquid.           Color         Straw           Odor         Mild           Odor         Mild           Odor         13 @ 20C           Welting pointfreezing point         25 30 ° F (9.3 2 °C)           nitial boiling point and boiling         25 30 ° F (9.3 2 °C)           nitial boiling point and boiling         25 30 ° F (9.9.97 °C) estimated           arge         Varialiable.           Evaporation rate         Not available.           Oppor/lower flammability or explosives limits         Not available.           parmability limit - tower (%)         Not available.           flammability init - tower (%)         Not available.           explosive limit - tower (%)	ppearance			
Color         Straw           Ddor         Mid           Ddor         Not available.           PI         128 20C           Motting point/feezing point         25:30 °F (-3.72 °C)           Initial boiling point and boiling         25:30 °F (-3.72 °C)           Initial boiling point and boiling         21:195 °F (99.97 °C) estimated           Parse         Not available.           Upper/lower finamability or expressions         Not available.           Flarmability limit - tower (%)         Not available.           (%)         Not available.           *         Not	•			
bdor     Mid       Ddor threshold     Nct available.       bH     13 @ 20 C       Alting point/freezing point     25.30 °F (-3.72 °C)       initial boling point and boling     211.95 °F (99.97 °C) estimated       ange     211.95 °F (99.97 °C) estimated       ange     Nct available.       Valoration rate     Nct available.       Valoration rate     Nct available.       Jpper/lower flammability (solid, gas)     Nct available.       Jpper/lower flammability limit - tower     Nct available.       flammability limit - tower (%)     Nct available.       flammability limit - tower (%)     Nct available.       flampability (water)     Nct available.       flaport density     Nct availabl	Form	Liquid.		
Abd     Not available.       bH     13 @ 20C       Aletting point firesering point     25 30 °F (-3.72 °C)       Initial boiling point and boiling     25 30 °F (-3.72 °C)       Initial boiling point and boiling     211.95 °F (99 97 °C) estimated       ange	Color	Straw		
H     13 @ 20C       Melting point/freeing point     25.30 °F (-3.72 °C)       Initial boiling point and boiling     211.95 °F (99.97 °C) estimated       ange     211.95 °F (99.97 °C) estimated       ange     Not available.       Vexporation rate     Not available.       Itammability or explosive limits     Not available.       Flammability limit - lower (%)     Not available.       (%)     Vexporation rate       Explosive limit - lower (%)     Not available.       (%)     Vexporation rate       Stobubility limit - upper (%)     Not available.       (%)     Vext available.       Explosive limit - upper (%)     Not available.       Apor density     Not available.       Solubility (water)     Not available.       Solubility (water)     Not available.       Partition coefficient nocofficient	ldor	Mild		
Adding point/freezing point     25.00 °F (-3.72 °C)       pritial boling point and boling     21.95 °F (99.97 °C) estimated       ange     21.95 °F (99.97 °C) estimated       "lash point     Not available.       Evaporation rate     Not available.       Jpper/lower flammability (solid, gas)     Not available.       Jpper/lower flammability i lmit - lower     Not available.       Flammability limit - lower     Not available.       Flammability limit - lower     Not available.       Folgoive limit - upper     Not available.       Explosive limit - upper     Not available.       Explosive limit - upper (%)     Not available.       Apor drensity     Not available.       Yapor drensity     Not available.       Solubility (water)     Not available.       Solubility (water)     Not available.       Partition coefficient - noceritient     Not available.       -cotanol/water)     Not available.       Vator diable.     Not available.       Partition coefficient     Not available.       -cotanol/water)     Not available.       Partition coefficient     Not available.       -cotanol/water)     Not available.       Partition temperature     Not available.       Paccentro     Not available.       Paccentro     Not available.	dor threshold	Not available.		
nitial boiling point and boiling     211.95 °F (99.97 °C) estimated       ange     Not available.       Evaporation rate     Not available.       Iammability (solid, gas)     Not applicable.       piper/lower finamability or explosive limits     Not available.       Flammability limit - lower (%)     Not available.       Flammability limit - lower (%)     Not available.       Explosive limit - lower (%)     Not available.       Explosive limit - lower (%)     Not available.       Apor pressure     0.00001 hPa estimated       Apor density     Not available.       Solubility (water)     Not available.       Solubility (water)     Not available.       -ctanol/water)     Not available.       Partition coefficient not coefficient not available.     Not available.       -ctanol/water)     Not available.       Solubility (water)     Not available.       -ctanol/water)     Not available.	н	13 @ 20C		
ange     Not available.       "lash point     Not available.       "lash point     Not available.       "lammability coild, gas)     Not available.       "Japper/lower flammability or explosive limits     Not available.       "flammability limit - uoper (%)     Not available.       (%)     Vot available.       "(%)     Not available.       "Solubility (water)     Not available.       "Apor density     Not available.       Solubility (water)     Not available.       "Auto-ignition temperature     Not available.       "Auto-ignition temperature     Not available.       "Jescesity     0 - 200 cps	leiting point/freezing point	25.30 °F (-3.72 °C)		
Evaporation rate         Not available.           Flammability (solid, gas)         Not available.           Jpper/lower flammability imit - tower (%)         Not available.           Flammability limit - upper (%)         Not available.           (%)         Not available.           Explosive limit - upper (%)         Not available.           (%)         Not available.           Zapor density         Not available.           Stative density         Not available.           Solubility(les)         Not available.           Solubility (water)         Not available.           Partition coefficient nocefficient nocefficient nocefficient nocefficient nocefficient nocefficient nocefficient Not available.           Auto-signition temperature         Not available.           Solubility (water)         Not available.           Auto-signition temperature         Not available.           Jecomposition temperature         Not available.		211.95 °F (99.97 °C) estimated		
Flarmability (solid, gas)     Not applicable.       Upper/lowor flarmability or explosive limits     Not available.       Flarmability limit - lowor (%)     Not available.       Flarmability limit - upper (%)     Not available.       (%)     Not available.       Explosive limit - upper (%)     Not available.       Vapor density     0.00001 hPa estimated       Vapor density     Not available.       Solubility (water)     Not available.       Solubility (water)     Not available.       Partition coefficient (not explande)     Not available.       Vapor density     Not available.       Solubility (water)     Not available.       Vapor density     Not available.	lash point	Not available.		
Jpper/lower flammability or explosive limits Flammability limit - lower (%) Flammability limit - upper (%) Explosive limit - upper (%) Explosive limit - upper (%) Not available. Explosive limit - upper (%) Not available. Solubility (lies) Solubility (lies) Solubility (water) Not available. Solubility (lies) Solubility (water) Not available. Solubility (lies) Solubility (water) Not available. Solubility (lies) Solubility (water) Not available. Not available. Not available. Not available. Not available. Not available. Not available. Not available. Solubility (lies) Solubility (water) Not available. Solubility (lies) Solubility (water) Not available. Solubility Not available. Solubility (lies) Solubility	vaporation rate	Not available.		
Flammability limit - lower (%)     Not available.       Flammability limit - upper (%)     Not available.       Explosive limit - lower (%)     Not available.       Zapor density     Not available.       Vapor density     Not available.       Solubility(res)     Not available.       Solubility(water)     Not available.       Partition coefficient n-octanol/water)     Not available.       Auto-ignition temperature     Not available.       Solubility(syster)     Not available.       Auto-ignition temperature     Not available.       Jescetty     0 - 200 cps	lammability (solid, gas)	Not applicable.		
(%)     Not available.       Flammability limit - upper (%)     Not available.       (%)     Statistical environment of the stimated       Explosive limit - upper (%)     Not available.       Apor pressure     0.0001 hPa estimated       /apor density     Not available.       Solubility (water)     Not available.       Solubility (water)     Not available.       Partition coefficient     Not available.       noctanol/mater     Not available.       Partition coefficient     Not available.       Not optimite (water)     Not available.       Auto-ignition temperature     Not available.       Paccomposition temperature     Not available.       Viscosity     0 - 200 cps	pper/lower flammability or expl	osive limits		
(%)     Not available.       Explosive limit - uwper (%)     Not available.       Explosive limit - uwper (%)     Not available.       /apor density     0.0001 hPa estimated       /apor density     Not available.       Solubility (ives)     Not available.       Solubility (water)     Not available.       Partition coefficient     Not available.       -octanol/water)     Not available.       Subility (ives)     Not available.       Solubility (ives)     Not available.       Solubility (ives)     Not available.       /atto-dignition temperature     Not available.       /iscosity     0 - 200 cps		Not available.		
Explosive limit - upper (%)     Not available.       /apor pressure     0.00001 hPa estimated       /apor density     Not available.       /abor density     Not available.       Solubility (vater)     Not available.       >aritition coefficient     Not available.       -ctanol/water)     Not available.       Auto-ignition temperature     Not available.       Decomposition temperature     Not available.       /iscosity     0 - 200 cps				
/apor pressure     0.00001 hPa estimated       /apor density     Not available.       Relative density     Not available.       Solubility(ives)     Not available.       Solubility(ives)     Not available.       Partition coefficient     Not available.       -octanol/water)     Not available.       Vuto-ignition temperature     Not available.       Oecomposition temperature     Not available.       /iscosity     0 - 200 cps	Explosive limit - lower (%)	Not available.		
Vapor density     Not available.       Relative density     Not available.       Solubility(ise)     Solubility(ise)       Solubility(iver)     Not available.       Arattion coefficient     Not available.       -octanol/water)     Not available.       Auto-Ignition temperature     Not available.       Oecomposition temperature     Not available.       /iscosity     0 - 200 cps				
Relative density     Not available.       Solubility(ies)     Solubility (water)       Solubility (water)     Not available.       arrition coefficient     Not available.       n-octanol/water)     Not available.       Juto-dignition temperature     Not available.       Decomposition temperature     Not available.       Jiscosity     0 - 200 cps	apor pressure			
Solubility (water) Not available. Partition coefficient Not available. n-octanol/water) Auto-ignition temperature Not available. Decomposition temperature Not available. //scosity 0 - 200 cps	apor density	Not available.		
Solubility (water)     Not available.       Partition coefficient     Not available.       n-octanol/water     Not available.       Auto-ignition temperature     Not available.       Decomposition temperature     Not available.       /iscosity     0 - 200 cps	elative density	Not available.		
Partition coefficient Not available. n-octanol/water) Auto-ignition temperature Not available. Jecomposition temperature Not available. Jiscosity 0 - 200 cps				
n-octanol/water) Auto-ignition temperature Not available. Decomposition temperature Not available. //iscosity 0 - 200 cps	• • •			
Viscosity 0 - 200 cps				
/iscosity 0 - 200 cps	uto-ignition temperature			
	ecomposition temperature	Not available.		
Helphilesees 010004				
	liscosity	0 - 200 cps		

Skin contact	Remove contaminated clothing. Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists
Ingestion	Rinse mouth. Get medical attention if symptoms occur.
Most important symptoms/effects, acute and delayed	Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.
5. Fire-fighting measures	
Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	Move containers from fire area if you can do so without risk.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	No unusual fire or explosion hazards noted.
6. Accidental release mea	sures
Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged container or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this i possible, Absorb in vermiculitle, dry sand or earth and place into containers. Following product recovery, flush area with water.
	Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.
	Never return spills to original containers for re-use. For waste disposal, see section 13 of the SD
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.
7. Handling and storage	
Precautions for safe handling	Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities	Store in tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).
8. Exposure controls/pers	onal protection
Occupational exposure limits The following constituents are At this time, the other constituent	the only constituents of the product which have a PEL, TLV or other recommended exposure limit ents have no known exposure limits.
Occupational exposure limits The following constituents are At this time, the other constituent	the only constituents of the product which have a PEL, TLV or other recommended exposure limit
Occupational exposure limits The following constituents are At this time, the other constitue US. OSHA Table Z-1 Limits f	<ul> <li>the only constituents of the product which have a PEL, TLV or other recommended exposure limit ents have no known exposure limits.</li> <li>for Air Contaminants (29 CFR 1910.1000)</li> </ul>
Occupational exposure limits The following constituents are At this time, the other constitu US. OSHA Table Z-1 Limits f Components Disodium Molybdate (CAS	the only constituents of the product which have a PEL, TLV or other recommended exposure limit ents have no known exposure limits. or Air Contaminants (29 CFR 1910.1000) Type Value

Other information		
Explosive properties	Not explosive.	
Oxidizing properties	Not oxidizing.	
Pounds per gallon	10.26	
Specific gravity	1.22 - 1.24 @ 20C	
VOC	0 %w/w	
10. Stability and reactivity		
Reactivity	The product is stable and non-reactiv	e under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal condi-	ions.
Possibility of hazardous reactions	No dangerous reaction known under	conditions of normal use.
Conditions to avoid	Contact with incompatible materials.	
Incompatible materials	Strong oxidizing agents.	
Hazardous decomposition products	No hazardous decomposition product	s are known.
11. Toxicological informat	ion	
Information on likely routes of ex	kposure	
Inhalation	Prolonged inhalation may be harmful.	
Skin contact	Causes skin irritation.	
Eye contact	Causes serious eye irritation.	
Ingestion	Expected to be a low ingestion hazar	d.
Symptoms related to the physical, chemical and toxicological characteristics	Severe eye irritation. Symptoms may vision. Skin irritation. May cause redn	include stinging, tearing, redness, swelling, and blurred ess and pain.
Information on toxicological effe	octs	
Acute toxicity	Not known.	
Acute toxicity Components	Not known. Species	Test Results
•	Species	Test Results
Components	Species	Test Results
Components Disodium Molybdate (CAS 7631-98 Acute Oral	Species	Test Results
Components Disodium Molybdate (CAS 7631-98 Acute Oral Liquid	Species 5-0)	
Components Disodium Molybdate (CAS 7631-98 Acute Oral Liquid LD50	Species 5-0) Rat	Test Results 2810 mg/kg
Components Disodium Molybdate (CAS 7631-98 Acute Oral Liquid	Species 5-0) Rat Causes skin irritation.	
Components Disodium Molybdate (CAS 7631-98 Acute Oral Liquid LD50	Species 5-0) Rat	
Components Disodium Molybdate (CAS 7631-98 Acute Oral Liquid LD50 Skin corrosion/irritation Serious aye damage/eye	Species 5-0) Rat Causes skin irritation. Causes serious eye irritation.	
Components Disodium Molybdate (CAS 7631-98 Acute Oral L/quid LD50 Skin corrosion/irritation Serious eye damage/eye Irritation	Species 5-0) Rat Causes skin irritation. Causes serious eye irritation.	
Components Disodium Molybdate (CAS 7631-98 Acute Oral Liquid LD50 Skin corrosion/irritation Serious eye damage/eye irritation Respiratory or skin sensitization	Species 5-0) Rat Causes skin irritation. Causes serious eye irritation.	2810 mg/kg
Components Disodium Molybdate (CAS 7631-98 Acute Oral Liquid LD50 Skin corrosion/irritation Serious eye damage/eye irritation Respiratory or skin sensitization Respiratory sensitization	Species 5-0) Rat Causes skin irritation. Causes serious eye irritation. Not a respiratory sensitizer. This product is not expected to cause	2810 mg/kg
Components Disodium Molybdate (CAS 7631-98 Acute Oral Liquid LD50 Skin corrosion/irritation Serious eye damageleye irritation Respiratory or skin sensitization Respiratory sensitization Skin sensitization	Species 5:0) Rat Causes skin irritation. Causes serious eye irritation. Not a respiratory sensitizer. This product is not expected to cause No data available to indicate product	2810 mg/kg skin sensitization. or any components present at greater than 0.1% are
Components Disodium Molybdate (CAS 7631-98 Acute Oral Liquid LD50 Skin corrosion/irritation Serious eye damage/eye irritation Respiratory or skin sensitization Respiratory sensitization Skin sensitization Germ cell mutagenicity Carcinogenicity	Species 5-0) Rat Causes skin irritation. Causes serious eye irritation. Not a respiratory sensitizer. This product is not expected to cause No data available to indicate product mutagenic or genotoxic.	2810 mg/kg skin sensitization. or any components present at greater than 0.1% are
Components Disodium Molybdate (CAS 7631-98 Actual Case of the second sec	Species 5-0) Rat Causes skin irritation. Causes serious eye irritation. Not a respiratory sensitizer. This product is not expected to cause No data available to indicate product mutagenic or genotoxic. Not classifiable as to carcinogenicity	2810 mg/kg skin sensitization. or any components present at greater than 0.1% are o humans.
Components Disodium Molybdate (CAS 7631-9) Actual Components Disodium Molybdate (CAS 7631-9) Components Compon	Species 5-0) Rat Causes skin irritation. Causes serious eye irritation. Not a respiratory sensitizer. This product is not expected to cause No data available to indicate product mutagenic or genotoxic. Not classifiable as to carcinogenicity Evaluation of Carcinogenicity	2810 mg/kg skin sensitization. or any components present at greater than 0.1% are o humans.
Components Disodium Molybdate (CAS 7631-9) Actue Conal Liquid Liquid Liptio Skin corrosion/irritation Serious eye damage/eye irritation Respiratory or skin sensitization Skin sensitization Skin sensitization Germ cell mutagenicity Carcinogenicity IARC Monographs. Overall E Not listed OSHA Specifically Regulated Not regulated. US. National Toxicology Pro Not listed.	Species 5:0) Rat Causes skin irritation. Causes serious eye irritation. Not a respiratory sensitizer. This product is not expected to cause No data available to indicate product mutagenic or genotoxic. Not classifiable as to carcinogenicity <b>isvaluation of Carcinogenicity</b> <b>d Substances (29 CFR 1910.1001-106</b> )	2810 mg/kg skin sensitization. or any components present at greater than 0.1% are o humans.
Components Disodium Molybdate (CAS 7631-98 Acute Oral Liquid Liquid Liptio Serious eye damageleye irritation Respiratory or skin sensitization Skin sensitization Skin sensitization Germ cell mutagenicity IARC Monographs. Overall E Not listed. OSHA Specifically Regulate Not listed. Reproductive toxicity	Species 5:0) Rat Causes skin irritation. Causes serious eye irritation. Not a respiratory sensitizer. This product is not expected to cause No data available to indicate product mutagenic or genotoxic. Not classifiable as to carrinogenicity evaluation of Carcinogenicity disubstances (29 CFR 1910.1001-101 gram (NTP) Report on Carcinogens This product is not expected to cause	2810 mg/kg skin sensitization. or any components present at greater than 0.1% are o humans.
Components Disodium Molybdate (CAS 7631-9) <u>Acute</u> Oral Liquid LD50 Skin corrosion/irritation Serious eye damage/eye irritation Respiratory on skin sensitization Skin sensitization Skin sensitization Germ cell mutagenicity Carcinogenicity IARC Monographs. Overall E Not listed Not regulated. US. National Toxicology Pro Not listed.	Species 5:0) Rat Causes skin irritation. Causes serious eye irritation. Causes serious eye irritation. Not ar respiratory sensitizer. This product is not expected to cause No data available to indicate product mutagenic or genotoxic. Not classifiable as to carcinogenicity valuation of Carcinogenicity d Substances (29 CFR 1910.1001-101 gram (NTP) Report on Carcinogens	2810 mg/kg skin sensitization. or any components present at greater than 0.1% are o humans.

Specific target organ toxicity - repeated exposure	Not classified	3.		
Aspiration hazard	Not an aspira	ation hazard.		
Chronic effects	Prolonged inhalation may be harmful.			
12. Ecological information	n			
Ecotoxicity			entally hazardous. However, this does not exclude the have a harmful or damaging effect on the environme	
Product		Species	Test Results	
CL2904				
Aquatic				
Crustacea	LC50	Ceriodaphnia dubia	2333 mg/l, 48 hours	
Fish	LC50	Fathead minnow (Pimeph	ales promelas) 1387 mg/l, 96 hours	
Persistence and degradability	No data is av	vailable on the degradability	of any ingredients in the mixture.	
Bioaccumulative potential	No data avail	lable.		
Mobility in soil	No data avai	lable.		
Other adverse effects			e.g. ozone depletion, photochemical ozone creation rming potential) are expected from this component.	
13. Disposal consideration	ons			
Disposal instructions	material unde		containers at licensed waste disposal site. Incinerate t approved incinerator. Dispose of contents/container i ternational regulations.	
Local disposal regulations	Dispose in ad	ccordance with all applicable	regulations.	
Hazardous waste code		ode should be assigned in di	or =>12.5, or corrosive to steel] scussion between the user, the producer and the was	te
Waste from residues / unused products	Dispose of in	accordance with local regul lues. This material and its co	ations. Empty containers or liners may retain some ntainer must be disposed of in a safe manner (see:	
Contaminated packaging	Since emptie	d containers may retain proc	luct residue, follow label warnings even after containe en to an approved waste handling site for recycling or	
14. Transport information	n .			_
DOT				_
Not regulated as dangerous	aoods			
IATA				
Not regulated as dangerous	goods.			
IMDG	-			
Not regulated as dangerous	goods.			
Transport in bulk according to	Not establish	ied.		
Annex II of MARPOL 73/78 and the IBC Code				
15. Regulatory information	on			
US federal regulations	This product		is defined by the OSHA Hazard Communication	
Toxic Substances Control		CFR 1910.1200.		
	. ,	on (40 CFR 707, Subpt. D)		
Not regulated.				
CERCLA Hazardous Subst	ance List (40 C	FR 302.4)		
Not listed.				
SARA 304 Emergency relea	ase notification	1		
Not regulated.	ad Culturian	(00 CED 4040 4004 4050)		
OSHA Specifically Regulat Not regulated.	eu Substances	(29 CFK 1910.1001-1053)		
				0511
Material name: CL2904 CL2904 Version #: 02 Revision of	late: 01-13-2022	Issue date: 02-08-2021		5 / 7

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Revision information	This document has undergone significant changes and should be reviewed in its entirety.
Other information	Prepared by: Product Compliance Department; ProductCompliance@chemtreat.com

Superfund Amendments and Reauthorization Act of 1986 (SARA) SARA 302 Extremely hazardous substance Not listed. SARA 311/312 Hazardous Yes chemical Classified hazard categories Skin corrosion or irritation Serious eye damage or eye irritation SARA 313 (TRI reporting) Not regulated. Other federal regulations Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List Not regulated. Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130) Not regulated. Safe Drinking Water Act Contains component(s) regulated under the Safe Drinking Water Act. (SDWA) US state regulations State regulations California Proposition 65 California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins. For more information go to www.P65Warnings.ca.gov. International Inventories Country(s) or region On inventory (yes/no)\* Inventory name Australian Inventory of Chemical Substances (AICS) Australia Canada Domestic Substances List (DSL) Non-Domestic Substances List (NDSL) Canada Non-Domestic Substances List (NDSL) Inventory of Existing Chemical Substances in China (IECSC) European Inventory of Existing Commercial Chemical Substances (EINECS) European List of Notified Chemical Substances (ELINCS) Inventory of Existing and New Chemical Substances (ENCS) China Europe Europe Japan Existing Chemicals List (ECL) Korea New Zealand New Zealand Inventory Philippine Inventory of Chemicals and Chemical Substances (PICCS) Philippines Taiwan Taiwan Chemical Substance Inventory (TCSI) United States & Puerto Rico Toxic Substances Control Act (TSCA) Inventory

A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s).
 A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).
 The "Other information, including date of preparation or last revision

16. Other Informat	16. Other information, including date of preparation or last revision		
Issue date	02-08-2021		
Revision date	01-13-2022		
Version #	02		
HMIS® ratings	Health: 2 Flammabiliy: 0 Physical hazard: 0 Personal protection: X		

 Material name: CL2904

 CL2904
 Version #: 02
 Revision date: 01-13-2022
 Issue date: 02-08-2021

SDS US 6 / 7

No

Yes

No

Yes

Yes

No

No

Yes

Yes

Yes

Yes Yes

ChemTreat

#### SAFETY DATA SHEET

Product identifier	P8281L(N)		
Other means of identification			
Product code	P8281L(N)		
Recommended use	Water Clarification Agent		
Recommended restrictions	None known.		
Manufacturer/Importer/Supplier	r/Distributor information		
Manufacturer			
Company name	ChemTreat, Inc.		
Address	5640 Cox Road		
	Glen Allen, VA 23060		
Telephone	United States		
Telephone Website	800-648-4579 chemtreat.com		
E-mail	productcompliance@chemtreat.com		
Emergency phone number	800-424-9300		
2. Hazard(s) identification	n		
Physical hazards	Corrosive to metals	Category 1	
Health hazards	Acute toxicity, oral	Category 2	
	Skin corrosion/irritation	Category 1	
	Serious eye damage/eye irritation	Category 1	
Environmental hazards	Not classified.		
OSHA defined hazards	Not classified.		
I abel elements			
Signal word	Danger		
Hazard statement	May be corrosive to metals. Fatal if swall Causes serious eye damage.	lowed. Causes severe skin burns and eye damage.	
Precautionary statement			
Prevention		reathe mist/vapors. Wash thoroughly after handling. Do product. Wear protective gloves/protective clothing/eye	
Response	If swallowed: Immediately call a poison center/doctor. If swallowed: Rinse mouth. Do NOT induce vorning, If on soin (or hair): Take of immediately all contaminated clothing, Rinse skin with water/shower. If inhaled: Remove person to fresh air and keep comfortable for breathing If in eyes: Rinse caubusly with water for several minutes. Remove contact lenses, if present and ease to do. Continue rinsing, Immediately call a poison center/doctor. Wash contaminated clothing before reuse. Absorb spillace to prevent material damage.		
Storage	Store locked up. Store in corrosive resist	ant container with a resistant inner liner.	
Disposal	Dispose of contents/container in accorda	nce with local/regional/national/international regulations	
Hazard(s) not otherwise classified (HNOC)	None known.		
Supplemental information		ent(s) of unknown acute dermal toxicity. 1.5, 1.5% of th nown long-term hazards to the aquatic environment.	

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Wixtures			
Chemical name	Common name and synonyms	CAS number	%
Ferric chloride		7705-08-0	40 - < 50
Hydrochloric acid		7647-01-0	1 - < 3
Other components below report	able levels al identity and/or percentage of composition ha	e haan withhald as a trada sa	
	and charge of composition ha	3 Deen withineid as a trade se	0101.
4. First-aid measures			
nhalation	Move to fresh air. Call a physician if symptom		
Skin contact	Take off immediately all contaminated clothin poison control center immediately. Chemical contaminated clothing before reuse.		
Eye contact	Immediately flush eyes with plenty of water for present and easy to do. Continue rinsing. Cal		
Ingestion	Call a physician or poison control center imm vomiting occurs, keep head low so that storm mouth-to-mouth method if victim ingested the a pocket mask equipped with a one-way valv	ach content doesn't get into th substance. Induce artificial re	e lungs. Do not use espiration with the aid of
Most important symptoms/effects, acute and delayed	Nausea, vomiting. Abdominal pain. Diarrhea. Causes serious eye damage. Symptoms may blurred vision. Permanent eye damage include	include stinging, tearing, red	
ndication of immediate nedical attention and special reatment needed	Provide general supportive measures and tre immediately. While flushing, remove clothes v ambulance. Continue flushing during transpo observation. Symptoms may be delayed.	which do not adhere to affecte	d area. Call an
General information	Ensure that medical personnel are aware of t protect themselves. Show this safety data sho		
5. Fire-fighting measures			
Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carb	on dioxide (CO2).	
Jnsuitable extinguishing nedia	Do not use water jet as an extinguisher, as the	is will spread the fire.	
Specific hazards arising from the chemical	During fire, gases hazardous to health may b	e formed.	
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full p	rotective clothing must be wo	m in case of fire.
Fire fighting equipment/instructions	Move containers from fire area if you can do	so without risk.	
Specific methods	Use standard firefighting procedures and con	sider the hazards of other inv	olved materials.
6. Accidental release mea	sures		
Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep pe appropriate protective equipment and clothing touch damaged containers or spilled material Ensure adequate ventilation. Local authorities contained. For personal protection, see section	during clean-up. Do not brea unless wearing appropriate p s should be advised if significa	athe mist/vapors. Do n rotective clothing.
Methods and materials for containment and cleaning up	Should not be released into the environment. confined areas.	Prevent entry into waterways	, sewer, basements or
	Large Spills: Stop the flow of material, if this i possible. Absorb spillage to prevent material vermiculite, sand or earth to soak up the prod Following product recovery, flush area with w	damage. Use a non-combusti luct and place into a container	ble material like
	Small Spills: Wipe up with absorbent material remove residual contamination.	(e.g. cloth, fleece). Clean sur	face thoroughly to
	Never return spills to original containers for re	-use. For waste disposal, see	e section 13 of the SDS
Environmental precautions	Prevent further leakage or spillage if safe to or drains, water courses or onto the ground.	lo so. Do not contaminate wat	er. Avoid discharge in
Material name: P8281L(N)			SDS

ъH	< 2
Aelting point/freezing point	-14.80 °F (-26.00 °C)
nitial boiling point and boiling range	600.8 °F (316 °C) estimated
Flash point	Not available.
evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Jpper/lower flammability or expl	osive limits
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
/apor pressure	0.00001 hPa estimated
/apor density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
/iscosity	Not available.
Other information	
Density	11.93 lbs/gal
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.
Specific gravity	1.43
10. Stability and reactivity	
Reactivity	Reacts violently with strong alkaline substances. This product may react with reducing agents. May be corrosive to metals.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. Contact with incompatible materials. Do not mix with other chemicals.
ncompatible materials	Bases. Strong oxidizing agents. Reducing agents. Metals.
Hazardous decomposition products	No hazardous decomposition products are known.
11. Toxicological informat	ion
nformation on likely routes of ex	cposure
Inhalation	May cause irritation to the respiratory system. Prolonged inhalation may be harmful.
Skin contact	Causes severe skin burns.
Eye contact	Causes serious eye damage.
Ingestion	Fatal if swallowed. Causes digestive tract burns.
Symptoms related to the	Nausea, vomiting. Abdominal pain. Diarrhea. Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and
bhysical, chemical and oxicological characteristics	blurred vision. Permanent eye damage including blindness could result.
physical, chemical and	blurred vision. Permanent eye damage including blindness could result.

7. Handling and storage			
Precautions for safe handling	Do not breathe mist/vapors. Do not get in eyes, on skin, or on clothing. Do not taste or swallow. Avoid prolonged exposure. When using, do not eat, drink or smoke. Provide adequate ventilation. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Observe good industrial hygiene practices.		
Conditions for safe storage, ncluding any incompatibilities	Store locked up. Store in a cool, dry place out of direct sunlight. Store in corrosive resistant container with a resistant inner liner. Store in tightly closed container. Keep only in the original container. Store away from incompatible materials (see Section 10 of the SDS).		
8. Exposure controls/per	sonal protection		
Occupational exposure limits			
At this time, the other constit	uents have no known exposure limits.	hich have a PEL, TLV or other recommended exposure limit.	
US. OSHA Table Z-1 Limits Components	for Air Contaminants (29 CFR 1910. Type	1000) Value	
Hydrochloric acid (CAS 7647-01-0)	Ceiling	7 mg/m3	
1041-01-0)		5 ppm	
US. ACGIH Threshold Limi	Values		
Components	Туре	Value	
Ferric chloride (CAS 7705-08-0)	TWA	1 mg/m3	
Hydrochloric acid (CAS 7647-01-0)	Ceiling	2 ppm	
US. NIOSH: Pocket Guide t Components	o Chemical Hazards Type	Value	
Ferric chloride (CAS 7705-08-0)	TWA	1 mg/m3	
Hydrochloric acid (CAS 7647-01-0)	Ceiling	7 mg/m3	
		5 ppm	
Biological limit values	No biological exposure limits noted t	or the ingredient(s).	
oppropriate engineering ontrols	Good general vertilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handing this product.		
ndividual protection measures Eye/face protection	, such as personal protective equipr Wear safety glasses with side shield		
Skin protection Hand protection	Wear appropriate chemical resistant	gloves.	
Other	Wear appropriate chemical resistant	clothing.	
Respiratory protection	In case of insufficient ventilation, we	ar suitable respiratory equipment.	
Thermal hazards	Wear appropriate thermal protective	clothing, when necessary.	
General hygiene considerations	Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.		
9. Physical and chemical	properties		
ppearance	Clear		
Physical state	Liquid.		
Form	Liquid. Liquid		
Color	Amber		
Ddor	Mild		
Odor threshold	Not available.		
Material name: P8281L(N) P8281L(N) Version #: 03 Revisio	n date: 02-28-2023 Issue date: 09-15-202	0 sbs 0 3 /	

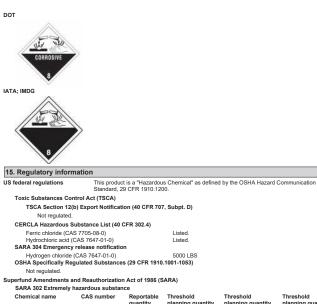
Components	Species	Test Results	
Ferric chloride (CAS 7705-08-0)			
Acute			
Oral			
LD50	Rat	28 mg/kg	
Hydrochloric acid (CAS 7647-01-0	J)		
Acute			
Oral			
LD50	Rabbit	900 mg/kg	
Skin corrosion/irritation	Causes severe skin burns and eye dam	age.	
Serious eye damage/eye irritation	Causes serious eye damage.		
Respiratory or skin sensitizatio	л		
Respiratory sensitization	Not a respiratory sensitizer.		
Skin sensitization	This product is not expected to cause sl	kin sensitization.	
Germ cell mutagenicity	No data available to indicate product or mutagenic or genotoxic.	any components present at greater than 0.1% are	
Carcinogenicity	Not classifiable as to carcinogenicity to I	humans.	
IARC Monographs Overall	Evaluation of Carcinogenicity		
Hydrochloric acid (CAS 7 OSHA Specifically Regulate		assifiable as to carcinogenicity to humans.	
Not regulated. US. National Toxicology Pro Not listed.	ogram (NTP) Report on Carcinogens		
Reproductive toxicity	This product is not expected to cause re	eproductive or developmental effects.	
Specific target organ toxicity - single exposure	Not classified.		
Specific target organ toxicity - repeated exposure	Not classified.		
Aspiration hazard	Not an aspiration hazard.		
Chronic effects	Prolonged inhalation may be harmful.		
12. Ecological informatio			
-			
Ecotoxicity	exposure to aquatic organisms and aqu		
Product	Species	Test Results	
P8281L(N)			
Aquatic			
Acute			
Crustacea	LC50 Water flea (Ceriodaphnia	a dubia) 1000 mg/l, 48 h	
Fish	LC50 Fathead minnow (Pimep	ohales promelas) 7937 mg/l, 96 h	
Persistence and degradability	No data is available on the degradability	y of any ingredients in the mixture.	
Bioaccumulative potential	No data available.		
Mobility in soil	No data available.		
Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation		
	potential, endocrine disruption, global w	arming potential) are expected from this component.	
13. Disposal consideration	ns		
Disposal instructions			
Local disposal regulations	Dispose in accordance with all applicable	ie regulations.	
Material name: P8281L(N)		SDS	
P8281L(N) Version #: 03 Revision	n date: 02-28-2023 Issue date: 09-15-2020	5	
	n date: 02-28-2023 Issue date: 09-15-2020		

disposal company. disposal company. Maste from residues / unsed products Disposal fina accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions). Contaminated packaging Transport information UN number UN proper shipping name Transport hazard classes Subsidiary risk - Label(s) 8 Packing group H Special processions for user Packaging ono bulk 203 Packaging prop Transport hazard classes Subsidiary risk - Label(s) 8 Subsidiary risk - B15, IB5, T4 TP1 Packaging ono bulk 203 Packaging prop Class 8 Subsidiary risk - Packaging prop Class 8 Subsidiary risk - Packaging group Class 8 Subsidiary risk - Cate CHLORIDE SOLUTION FERRIC CHLORIDE SOLUTION Transport hazard class(es) Chlorinforin Packaging roup II Emvironmental hazards Subsidiary risk - FERRIC CHLORIDE SOLUTION FERRIC		
products product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions). Contaminated packaging Since emptied containers may retain product residue, follow label warnings even after contain emptied. Empty containers should be taken to an approved waste handling site for recycling of disposal. 14. Transport information UN number UN2582 Class 8 Subsidiary risk - Label(s) 8 Packing group III Special procautions for user Read safety instructions, SDS and emergency procedures before handling. Special procautions for user Read safety instructions, SDS and emergency procedures before handling. Special procautions for user Read safety instructions, SDS and emergency procedures before handling. Special procautions for user Read safety instructions, SDS and emergency procedures before handling. Special procautions for user Read safety instructions, SDS and emergency procedures before handling. Special procautions for user Read safety instructions, SDS and emergency procedures before handling. Special procautions for user Read safety instructions, SDS and emergency procedures before handling. Special procautions for user Read safety instructions, SDS and emergency procedures before handling. Special procautions for user Read safety instructions, SDS and emergency procedures before handling. FERRIC CHLORIDE SOLUTION Transport hazard class(es) Class 8 Subsidiary risk - Packing group III Environmental hazards No. EmS 6 Subsidiary risk - Packing group Allowed with restrictions. FERRIC CHLORIDE SOLUTION FERRIC CHL	Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste
empted. Empty containers should be taken to an approved waste handling site for recycling of disposal.  44. Transport information UN2582 UN proper shipping name Transport hazard class(es) Class Subsidiary risk Label(s) Special provisions Special provisions Special provisions UN proper shipping name Transport hazard class(es) UN proper shipping name Class Subsidiary risk C		product residues. This material and its container must be disposed of in a safe manner (see:
DOT UN proper shipping name Transport hazard class(es) Class 8 Subsidiary risk - Label(s) 8 Packing group III Special procutions for user Read safety instructions, SDS and emergency procedures before handling. Special procutions III, IS5, T4 TP1 Packaging exceptions 154 Packaging ono bulk 203 Packaging ono bulk 203 Packaging uno bulk 203 Packaging uno bulk 203 Packaging uno bulk 203 Packaging uno bulk 203 Packaging to public 203 Packaging sceptions 154 UN proper shipping name FERRIC CHLORIDE SOLUTION Transport hazard class(es) Class 8 Subsidiary risk - Packaging oup III Environmental hazards 8L Special precautions for user Read safety instructions, SDS and emergency procedures before handling. Calass 8 Subsidiary risk - Passenger and cargo alicraft Allowed with restrictions. INN number UN2582 UN proper shipping name FERRIC CHLORIDE SOLUTION Transport hazard class(es) Class 8 Subsidiary risk - Packing group III Environmental hazards 8L Subsidiary risk - Packing group III Environmental hazard class(es) Class 8 Subsidiary risk - Packing group III Environmental hazard class(es) Marine pollutant No. EmS F-A, S-B	Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container i emptied, Empty containers should be taken to an approved waste handling site for recycling or disposal.
UN numberUXS52UN proper shipping nameFERRIC CHLORIDE SOLUTIONTransport hazard class(s)FERRIC CHLORIDE SOLUTIONClass8Subsidiary risk-Label(s)8Packag groupIISpecial precautions for userRead safely instructions, SDS and emergency procedures before handling.Special procautions for userB15, 18, 74 TP1Packaging non bulk203Packaging non bulk203Packaging non bulk201Reportable quantity (RC) bb)1000IV numberVIS52UN proper shipping nameFERRIC CHLORIDE SOLUTIONTransport hazard class(s)8Subsidiary risk-Packaging oupIIIErroremationNo.ErroremationNo.Packaging propIIIUN numberWordwith restrictions, SDS and emergency procedures before handling.Cother informationNo.Passenger and cargoAlowed with restrictions, SDS and emergency procedures before handling.Other informationNo.Passenger and cargoAlowed with restrictions.NumberVIDS22UN numberVIDS252UN numberVIDS252UN proper shipping nameFERRIC CHLORIDE SOLUTIONTransport hazard classes/FERRIC CHLORIDE SOLUTIONClass8Subsidiary risk-Class8Subsidiary risk-Packang groupIIIHumper hazard classes/FERRIC CHLORIDE S	14. Transport information	
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Transport hazard class(es)     8       Class     8       Subsidiary risk     -       Label(s)     8       Packing group     III       Special precautions for user     Read stely instructions, SDS and emergency procedures before handling.       Special procautions for user     Read stely instructions, SDS and emergency procedures before handling.       Special procautions for user     Read stely instructions, SDS and emergency procedures before handling.       Special procautions for user     Read stely instructions, SDS and emergency procedures before handling.       Packaging non bulk     203       Packaging oun bulk     203       Packaging quantity (RQ Ibs)     1000       VIN number     UN2582       UN proper shipping name     FERRIC CHLORIDE SOLUTION       Transport hazard class(es)     III       Class     8       Subsidiary risk     -       Packing group     III       ERG Code     8L       Special procautions for user     Read safety instructions, SDS and emergency procedures before handling.       Other information     No.       Passenger and cargo     Allowed with restrictions.       ingreap aircraft only     Allowed with restrictions.       UN proper shipping name     FERRIC CHLORIDE SOLUTION       Transport hazard class(es)     FERRIC CHLORIDE SOLU	UN number	UN2582
Transport hazard class(es)         8           Class         8           Subsidiary risk         -           Label(s)         8           Packing group         III           Special procutions for user         Read relativistructions, SDS and emergency procedures before handling.           Special procutions for user         Read relativistructions, SDS and emergency procedures before handling.           Special procutions for user         Read relativistructions, SDS and emergency procedures before handling.           Special procutions for user         Read relativistructions, SDS and emergency procedures before handling.           Packaging non bulk         203           Packaging non bulk         203           Reportable quantity (RCl bs)         1000           INT number         UN2582           UN proper shipping name         FERIC CHLORIDE SOLUTION           Transport hazard class(s)         -           Class         8           Subsidiary risk         -           Packing group         III           Error Conter information         -           Passenger and cargo aircraft         Alowed with restrictions.           UN proper shipping name transport hazard class(s)         FERIC CHLORIDE SOLUTION           UN proper shipping name transport hazard class(s)	UN proper shipping name	FERRIC CHLORIDE SOLUTION
Class         8           Subsidiary risk         -           Label(s)         8           Packing group         III           Special provisions         BT-LIS, TA TP1           Packaging exceptions         154           Packaging wexceptions         154           Packaging bulk         203           Packaging bulk         203           Packaging bulk         241           Reportable quantity (RQ Ibs)         1000           VIX         V           Class         8           Subsidiary risk         -           FERRIC CHLORIDE SOLUTION         FERRIC CHLORIDE SOLUTION           Transport hazard class(s)         FERRIC CHLORIDE SOLUTION           Environmental hazards         No.           Environmental hazards         No.           Environmental hazards         No.           Cargo aircraft oraging         Allowed with restrictions.           aircraft         UN proper shipping name           Transport hazard class(s)         FERRIC CHLORIDE SOLUTION           Ubit         Unowed with restrictions.           aircraft         UN proper shipping name           Transport hazard class(s)         FERRIC CHLORIDE SOLUTION           UN prop		
Label(s)         8           Packing group         III           Special precautions for user         Read safety instructions, SDS and emergency procedures before handling.           Special precautions         154, 165, 74 TP1           Packaging non buik         203           Packaging poilk         203           Packaging poilk         203           Packaging poilk         203           Packaging poilk         203           Packaging group         UNZ582           UN proper shipping name         FERG CoHLORIDE SOLUTION           Transport hazard class(es)         -           Class         8           Subsidiary risk         -           Packing group         III           ERG Code         8.           Special precautions for user         Read safety instructions, SDS and emergency procedures before handling.           Other information         Woed with restrictions.           Packing group         III woed with restrictions.           IN number         VIX582           UN number         VIX5		8
Label(s)         8           Packing group         III           Special precautions for user         Read safety instructions, SDS and emergency procedures before handling.           Special precautions         154, 185, 74 TP1           Packaging on bulk         203           Packaging non bulk         203           Packaging non bulk         203           Packaging pon bulk         201           Reportable quantity (RQ Ibs)         1000           IAT         UN2582           UN proper shipping name         FERRIC CHLORIDE SOLUTION           Transport hazard class(es)         FCACCHCORIDE SOLUTION           Class         8           Subsidiary risk         -           Packing group         III           Error Conter information         No.           Passenger and cargo aircraft         Aloved with restrictions.           VD number         VIX2522           UN nymper shipping name         FERIC CLLORIDE SOLUTION           Transport hazard classe         FERIC CLLORIDE SOLUTION           Cargo aircraft only         Aloved with restrictions.           UN number         VIX2522           UN number         VIX2522           Class         8           Subsidiary risk <td>Subsidiary risk</td> <td>-</td>	Subsidiary risk	-
Packaging oroup         III           Special provisions         B15, 185, T4 TP1           Packaging exceptions         154           Packaging non bulk         203           Packaging duality (RC IIII)         201           Reportable quantity (RC IIIII)         1000           XTA         VINumber           UN proper shipping name         FERRIC CHLORIDE SOLUTION           Transport hazard class(s)         Class           Subsidiary risk         -           Packaging oroup         III           Environmental hazard         No.           ERG Code         84           Subsidiary risk         -           Packaing oroup         III           Environmental hazard         No.           ERG Code         84           Subsidiary risk         -           Passenger and crasse         Allowed with restrictions.           aircraft         VIN unmber         VINSE           UN number         VINSE         -           Class         8         -           Subsidiary risk         -         -           Cargo aircraft orith restrictions.         -           UN proper shipping name         FERRIC CHLORIDE SOLUTION		8
Special precaultons for user         Read safety instructions, SDS and emergency procedures before handling.           Special processions         B15, IB5, T4 TP1           Packaging oxceptions         B15, IB5, T4 TP1           Packaging non bulk         203           Packaging non bulk         203           Packaging pon bulk         203           Packaging non bulk         204           Reportable quantity (RQ Ib3)         1000           IAT         UN2582           UN proper shipping name         FERRIC CHLORIDE SOLUTION           Transport hazard class(es)         FERRIC CHLORIDE SOLUTION           Class         8           Subsidiary risk         -           Packing group         III           Error Conternation         No.           Passenger and cargo aircraft         Aloved with restrictions.           VIN proper shipping name         FERRIC CHLORIDE SOLUTION           Transport hazard class(es)         FERRIC CHLORIDE SOLUTION           Other information         VIN2582           UN proper shipping name         FERRIC CHLORIDE SOLUTION           Transport hazard class(es)         FERRIC CHLORIDE SOLUTION           Class         8           Subsidiary risk         -           Class		
Special provisions     B15, IB5, T4 TP1       Packaging exceptions     154       Packaging sexceptions     154       Packaging poubulk     203       Packaging poubulk     203       Packaging poubulk     203       Reportable quantity (RQ Ibs)     1000       IATA     UN number       UN number     UN2582       Class     8       Subsidiary risk     -       Packing group     III       Environmental hazard     No.       ERG Code     8L       Special procautions for user     Read safety instructions, SDS and emergency procedures before handling.       Other information     Allowed with restrictions.       Passenger and cargo aircraft     Allowed with restrictions.       UN number     UN2582       UN number     UN2582       UN number     UN2582       Class     8       Subsidiary risk     -       Packing group     III       Environmental hazard     -       Environmental hazard     -       Environmental hazard     - </td <td></td> <td>Read safety instructions, SDS and emergency procedures before handling</td>		Read safety instructions, SDS and emergency procedures before handling
Packaging exceptions         154           Packaging non bulk         203           Packaging non bulk         241           Reportable quantity (RQ Ibs)         1000           IAT         UN2582           UN proper shipping name         FERRIC CHLORIDE SOLUTION           Transport hazard class(es)         FERRIC CHLORIDE SOLUTION           Class         8           Subsidiary risk         -           Packing group         III           Error formation         No.           Passenger and cargo aircraft         Aloved with restrictions, SDS and emergency procedures before handling.           Other information         Aloved with restrictions.           VIN proper shipping name frame frame frame         FERGIC CHLORIDE SOLUTION           Transport hazard classe;         FERGIC CHLORIDE SOLUTION           Cargo aircraft only         Aloved with restrictions.           VIN number         VIX2522           UN number         VIX2522           Class         8           Subsidiary risk         -           Class         8           Subsidiary risk         -           Ferry Internant hazards         -           Ferry Internant hazards         -           Enviry Internant haz		
Packaging non bulk         203           Packaging bulk         241           Reportable quantity (RQ Ibs)         1000           INT         UN statutity (RQ Ibs)           UN number         UN2582           UN proper shipping name         FERRIC CHLORIDE SOLUTION           Transport hazard class(s)         6           Subsidiary risk         -           Packing group         III           Environmental hazards         No.           Environmental hazards         No.           Cotter information         Read safety instructions, SDS and emergency procedures before handling.           Other information         Allowed with restrictions.           Passenger and carego aircraft         Allowed with restrictions.           UN proper shipping name         FERRIC CHLORIDE SOLUTION           Transport hazard class(s)         FERRIC CHLORIDE SOLUTION           UN proper shipping name         FERRIC CHLORIDE SOLUTION           Transport hazard class(s)         FERRIC CHLORIDE SOLUTION           Class         8           Subsidiary risk         -           Packing group         III           Environmental hazard         -           Ferritorin flatard         -           Subsidiary risk         -		
Packaging bulk         241           Reportable quantity (RQ Ibs)         1000           IAT         UN proper shipping name         FERRIC CHLORIDE SOLUTION           Transport hazard class(ss)         5           Class         8           Subsidiary risk         -           Packing group         III           ERG Code         8           Special precautions for user         Fedasfity instructions, SDS and emergency procedures before handling.           Other information         Allowed with restrictions.           Passenger and cargo         Allowed with restrictions.           allowed with restrictions.         FERG COLLORIDE SOLUTION           Transport hazard class(ss)         FERG CCLORIDE SOLUTION           UN proper shipping name         FERGIC CHLORIDE SOLUTION           Transport hazard class(ss)         FERG CCLORIDE SOLUTION           Class         8           Subsidiary risk         -           Class         8           Subsidiary risk         -           Packing group         III           Environmental hazards         No.           Environmental hazards         FA, SB		
Reportable quantity (RQ Ibs)         1000           KTA         UN sumber         UN2582           UN proper shipping name         FERRIC CHLORIDE SOLUTION           Transport hazard class(s)         FERRIC CHLORIDE SOLUTION           Class         8           Subsidiary risk         -           Packing group         III           Environmental hazards         No.           Environmental hazards         No.           Environmental hazards         Read safety instructions, SDS and emergency procedures before handling.           Other information         Read safety instructions, SDS and emergency procedures before handling.           Other information         Allowed with restrictions.           arcraft         UN proper shipping name           UN proper shipping name         FERRIC CHLORIDE SOLUTION           Transport hazard class(s)         FERRIC CHLORIDE SOLUTION           Class         8           Subsidiary risk         -           Packing group         III           Environmental hazard         -           Marine pollutant         No.           Emvironmental hazard         FA, S-B		241
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UN proper shipping name Transport hazard class(es)         FERRIC CHLORIDE SOLUTION           Class         8           Subsidiary risk         -           Packing group         III           ErRG Code         8L           Special procautions for user         Read safety instructions, SDS and emergency procedures before handling.           Other information         Allowed with restrictions.           Passenger and cargo aircraft         Allowed with restrictions.           UN proper shipping name Transport hazard class(es)         FERG CHLORIDE SOLUTION           Class         8           Subsidiary risk         -           Class         8           Subsidiary risk         -           Class         8           Subsidiary risk         -           Ferring coupt         III           Environmental hazards         FA-S-B		
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Class     8       Subsidiary risk     -       Packing group     III       EmVironmental hazards     No.       ERG Code     8L       Special precautions for user     Read safety instructions, SDS and emergency procedures before handling.       Other information     Allowed with restrictions.       aircraft     Allowed with restrictions.       UN proper shipping name     FERRIC CHLORIDE SOLUTION       Transport hazard class(es)     FERRIC CHLORIDE SOLUTION       Class     8       Subsidiary risk     -       Packing group     III       Environmental hazards     FA,S-B		
Subsidiary risk         -           Packing group         III           Environmental hazards         No.           ERG Code         8L           Special precautions for user Read safety instructions, SDS and emergency procedures before handling.         Other information           Passenger and cargo aircraft         Allowed with restrictions.           Passenger and cargo aircraft         Allowed with restrictions.           UND roper shipping name         FERRIC CHLORIDE SOLUTION           Transport hazard class(es)         FERRIC CHLORIDE SOLUTION           Class         8           Subsidiary risk         -           Packing group         III           Environmental hazards         No.           Emvironmental hazards         F-A, S-B		0
Packing group         III           Environmental hazards         No.           ERVEROMENTAL ACTIONS         Special precautions for user           Special precautions for user         Read safety instructions, SDS and emergency procedures before handling.           Other information         Allowed with restrictions.           aircraft         Cargo aircraftory           UN proper shipping name         VN2S52           UN proper shipping name         FERRIC CHLORIDE SOLUTION           Transport hazard class(es)         FERRIC CHLORIDE SOLUTION           Class         8           Subsidiary risk         -           Packing group         III           Environmental hazards         No.           Environmental hazards         No.		-
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ERG Code     8L       Special precautions for user     Read safety instructions, SDS and emergency procedures before handling.       Other information     Allowed with restrictions.       Cargo aircraft only     Allowed with restrictions.       UN proper shipping name     FERRIC CHLORIDE SOLUTION       Transport hazard class(es)     FERRIC CHLORIDE SOLUTION       Class     8       Subsidiary risk     -       Packing group     III       Environmental hazards     FA,S-B		
Special precautions for user         Read safety instructions, SDS and emergency procedures before handling.           Other information         Allowed with restrictions.           Passenger and argo         Allowed with restrictions.           aircraft         Allowed with restrictions.           Cargo aircraft only         Vite Strictions.           UN proper shipping name         UN2582           Transport hazard class(es)         FERRIC CHLORIDE SOLUTION           Class         8           Subsidiary risk         -           Packing group         III           Emvironmental hazards         No.           EmS         F-A, S-B		
Other information         Allowed with restrictions.           Passinger and cargo aircraft         Allowed with restrictions.           Cargo aircraft only         Allowed with restrictions.           IMDG         UN2582           UN proper shipping name Transport hazard class(es)         FERRIC CHLORIDE SOLUTION           Class         8           Subsidiary risk         -           Packing group         III           Environmental hazards         No.           EmS         F-A, S-B		
aircraf Cargo aircraft only Allowed with restrictions. IMDG UN number UN2582 UN proper shipping name FERRIC CHLORIDE SOLUTION Transport hazard class(es) Class 8 Subsidiary risk - Packing group III Environmental hazards Marine pollutant No. EmS F-A, S-B		ricad salety instructions, obo and emergency procedures before nandling.
IMDG UN number UN proper shipping name Transport hazard class(es) Class Subsidiary risk Packing group III Environmental hazards Marine pollutant EmS F-A, S-B		Allowed with restrictions.
UN2592 UN proper shipping name FERRIC CHLORIDE SOLUTION Transport hazard class(s) Class Subsidiary risk - Packing group Interpret the second s	Cargo aircraft only	Allowed with restrictions.
UN proper shipping name FERRIC CHLORIDE SOLUTION Transport hazard class(es) Class Subsidiary risk - Packing group III Environmental hazards Marine pollutant No. EmS F-A, S-B	IMDG	
Transport hazard class(es) Class 8 Subsidiary risk - Packing group III Environmental hazards Marine pollutant No. EmS F-A, S-B	UN number	UN2582
Subsidiary risk - Packing group III Environmental hazards Marine pollutant No. EmS F-A, S-B		FERRIC CHLORIDE SOLUTION
Packing group III Environmental hazards Marine pollutant No. EmS F-A, S-B	Class	8
Environmental hazards Marine pollutant No. EmS F-A, S-B	Subsidiary risk	
Marine pollutant No. EmS F-A, S-B		III
EmS F-A, S-B	Environmental hazards	
EmS F-A, S-B	Marine pollutant	No.
		F-A, S-B
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.	Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Transport in bulk according to Not established. Annex II of MARPOL 73/78 and the IBC Code	Transport in bulk according to Annex II of MARPOL 73/78 and	

Material name: P8281L(N)			
P8281L(N) Version #: 03	Revision date: 02-28-2023	Issue date: 09-15-2020	

	nistration (DEA). List 2	2, Essential Chemicals (21 C	CFR 1310.02(b) and 1310.04(f)(2) and
Chemical Code Number			
Hydrochloric acid (CA		6545	
		1 & 2 Exempt Chemical Mixt	ures (21 CFR 1310.12(c))
Hydrochloric acid (CA		20 %WV	
DEA Exempt Chemical N			
Hydrochloric acid (CA	S 7647-01-0)	6545	
US state regulations			
California Proposition 65			
	y chemicals currently lis	ment Act of 1986 (Proposition sted as carcinogens or reprodu '.	
US. California. Candidat subd. (a))	e Chemicals List. Safe	r Consumer Products Regu	lations (Cal. Code Regs, tit. 22, 69502.3,
Hydrochloric acid (CA	S 7647-01-0)		
International Inventories			
Country(s) or region	Inventory name		On inventory (yes/no)
Canada	Domestic Substances	List (DSL)	No
United States & Puerto Rico		trol Act (TSCA) Inventory	Yes
*A "Yes" indicates that all compon	ents of this product comply	with the inventory requirements	administered by the governing country(s) ing on the inventory administered by the governing
Compliance Information: NSF W	hitebook		
Compliance Information: NSF St	andard 60		
This product is certified to use rate for potable water #42 USA			nction:Coagulation & Flocculation. Maximum
NSF			
16. Other information, incl	uding date of prep	paration or last revision	1

Issue date	09-15-2020
Revision date	02-28-2023
Version #	03
HMIS® ratings	Health: 3 Flammability: 0 Physical hazard: 4 Personal protection: B
Disclaimer	Chem Treat, Inc. cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available. Although the information and recommendations set forth herein (hereinafter "information") are presented in good faith and believed to be correct as of the date hereof, Information") are presented in condition that the persons receiving same will make their own determination as to its suitability for their purposes prior to use. In no event will Chem Treat, Inc. be responsible for damages of any nature whatsoever resulting from the use or reliance upon information. No representation or warranties, either expressed or implice, of merchantability, fitness for a particular purpose, or of any other nature are made hereunder with respect to information or the product to which information refers.
Revision information	Transport Information: Material Transportation Information
Other information	Prepared by: Product Compliance Department; ProductCompliance@chemtreat.com
Material name: P8281L(N)	SDS U
P8281L(N) Version #: 03	Revision date: 02-28-2023 Issue date: 09-15-2020 8 / 8



		quantity (pounds)	planning quantity (pounds)	planning quantity, lower value (pounds)	planning quantity, upper value (pounds)
Hydrochloric acid	7647-01-0	5000	500		
SARA 311/312 Hazardou chemical	is Yes				
Classified hazard categories	Skin corro	to metal city (any route of sion or irritation /e damage or eye	• •		
SARA 313 (TRI reporting	3)				
Chemical name		C.	AS number	% by wt.	
Hydrochloric acid		7	647-01-0	1 - < 3	
ther federal regulations					
Clean Air Act (CAA) Sec	tion 112 Hazard	dous Air Polluta	nts (HAPs) List		
Hydrochloric acid (C/					
Clean Air Act (CAA) Sec	tion 112(r) Acc	idental Release	Prevention (40 CFR 6	8.130)	
Hydrochloric acid (C/	AS 7647-01-0)				
Safe Drinking Water Act (SDWA)	Not regula	ited.			

Threshold

Threshold

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Material name: P8281L(N) P8281L(N) Version #: 03 Revision date: 02-28-2023 Issue date: 09-15-2020



Oth

Signal word

Storage

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#### SAFETY DATA SHEET

	Maria di San		
Other means of identification	None known.		
Product identifier	SODIUM HYDROXIDE		
Recommended use	ALL PROPER AND LE	GAL PURPOSÉS	
Recommended restrictions	None known.		
Manufacturer/Importer/Supplie	n/Distributor information		
Manufacturer			
Company name	Brenntag Pacific Inc.		
Address	10747 Patterson Place		
	Santa Fe Springs, CA 9	90670	
Telephone	562-903-9626		
E-mail	Not available.		
Emergency phone number	800-424-9300	CHEMTREC	
2. Hazard(s) identification	1		
Physical hazards	Not classified.		
Health hazards	Skin corresion/irritation		Category 1
	Serious eye damage/e/	e irritation	Category 1
	Spacific target organ to	xicity, single exposure	Category 3 respiratory tract irritation
Environmental hazards	Not classified.		
OSHA defined hazards	Not classified.		
Label elements			
	~ ~		



Causes severe skin burns and eye damage. Causes serious eye damage. May cause respiratory **Hazard statement** Irritation. Precautionary statement Do not breathe mist/vapors. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection. Prevention veniversimated area, vera protective glovesproactive counsigneye procedum take proteomit. If swallowes finise most, Do NOT Induce versimiting, If on skin (or hain): Take off immediately all contaminated clothing. Rines skin with waterishower. If inhaled: Remove person to fresh air and keep confinitable for breathing. If a vers: Rines calculously with water for several minutes. Remove contract lenses, If present and easy to do. Continue rinsing, Immediately call a poison center/docion. Vash contaminated clothing before reuse. Store in a well-ventilated place. Keep container tightly closed. Store locked up. Response Disposal Dispose of contents/container in accordance with local/regional/national/international regulations. Hazard(s) not otherwise classified (HNOC) None known. 50% of the mixture consists of component(s) of unknown acute oral toxicity. 50% of the mixture consists of component(s) of unknown acute inhatation toxicity. Supplemental information 3. Composition/information on ingredients

Mixtures Chemical name Come SODIUM HYDROXIDE (NA(OH)) Other components below reportable levels Common name and synonyms CAS number 1310-73-2 50 50 Material name: SODRIM HYDROXIDE 50% MEM NSF 772282 Version # D1 Issue date: 02-19-2022

4. First-aid measures

4. First-ald measures	
Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a poison center or doctor/physician if you feef unwell.
Skin contact	Take off immediately all contaminated clothing, Rinse skin with water/shower. Call a physician or poison control center immediately. Chemical burns must be treated by a physician. Wash contaminated clothing before reuse.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing, Call a physician or poison control center immediately.
Ingestion	Call a physician or poison control center immediately. Rinse mouth, Do not induce vomiting, If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
Most important symptoms/effects, acute and delayed	Burning pain and severe cortosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, sweiling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory rintation.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Chemical burns, Flush with water immediately. While flushing, remove lochtes which do not adhere to affected ana. Call an ambulance. Continue flushing during transport to hospital. Keep victim under observation. Symptoms may be delayed.
General information	If you feel univell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.
5. Fire-fighting measures	
Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	Move containers from file area if you can do so without risk
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	No unusual fire or explosion hazards noted.
6. Accidental release meas	ures
Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing cluring clean-up. Do not breathe mis/vapors. Do not fouch damaged containers or spilled material unless warding appropriate protective clothing. Ensure adequate verifiation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 80 of the SDS.
Methods and materials for containment and cleaning up	Large Spills: Stop the flow of material: if this is without risk. Dike the spilled material: where this is possible. Absorb in vermiculfie, dry sand or earth and place into containers. Following product recovery, fluch area with water.
	Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface theroughly to remove residual contamination.
	Never return spills to original containers for re-use. For waste disposat, see section 13 of the SDS.
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.
7. Handling and storage	
Precautions for safe handling	Do not breathe mist/vapors. Do not get in eyes, on skin, or on clothing. Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hyperine practices.
Conditions for sate storage, including any incompatibilities	Store locked up. Store in lightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

Material name: SODIUM HYDROXIDE S0% MEM NSF 772282 Version # D1 Isaue date: 02-19-2022

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Germ cell mutagenicity	Due to partial or complete tack of data the classification is not possible.		
Skin sensitization	Due to partial or complete lack of data the classification is not possible.		
Respiratory or sensitization	Due to partial or complete lack of data the classification is not possible.		
irritation Respiratory or skin sensitizatior			
Skin corrosion/irritation Serious eye damage/eye	Causes severe skin burns and eye damage. Causes seribus eye damage.		
ATEmix	2200 mg/kg		
Demai			
Acute	Rar.		
Product	Species Test Results		
Acute toxicity			
nformation on toxicological effe	Nat known.		
oxicological characteristics	blindness could result. May cause respiratory imitation.		
Symptoms related to the bhysical, chemical and	Causes ogesine naci bons Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include singing, tearing, redness, swelling, and blurred vision. Permanent eye damage includi		
Ingestion	Causes digestive tract burns		
Eve contact	Causes serious eve damage.		
Skie contact	ivay cause initiation to the respiratory system. Holooged totalation may be parintal. Causes severe skin burns.		
Information on likely routes of e	xposure May cause irritation to the respiratory system. Prolonged inhalation may be harmful.		
-			
11. Toxicological informat	lion		
Hazardous decomposition products	No hazardous decomposition products are known.		
Incompatible materials	Strong acids.		
Conditions to avoid	Contact with incompatible materials.		
reactions			
Possibility of hazardous	Hazardous polymerization does not occur.		
Reactivity Chemical stability	And the product is stable and non-reactive under normal conditions of use, storage and transport Material is stable under normal conditions.		
To. Stability and reactivity Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport		
10. Stability and reactivity			
Specific gravity	1.53		
Percent volatile	50 % estimated		
Oxidizing properties	Not explosite.		
Explosive properties	1 53 g/mł Not explosive.		
Density	12 76 lbs/gal		
Other information			
Viscosity	Not available		
Decomposition temperature	Not available.		
Auto-ignition temperature	Nof available		
Partition coefficient (n-octanol/water)	Not available.		
Solubility (water)	Not available		
Solubility(ies)			
Relative density	Not available		
Vapor density	Not available		
Vapor pressure	Not available.		
Explosive limit - upper (%)	Not available		

8. Exposure controls/personal protection

Occupational exposure limits			
US. OSHA Table Z-1 Limits I Components	or Air Contaminants (29 CFR 1910.1000 Type	)) Value	
SODIUM HYDROXIDE (NA(OH)) (CAS 1310-73-2)	PEL	2 mg/m3	
US. ACGIH Threshold Limit Components	Values Type	Value	
SODIUM HYDROXIDE (NA(OH)) (CAS 1310-73-2)	Ceiling	2 mg/m3	
US. NIOSH: Pocket Guide to Components	Chemical Hazards Type	Value	
SODIUM HYDROXIDE (NA(OH)) (CAS 1310-73-2)	Celling	2 mg/m3	
Biological limit values	No biological exposure limits noted for th	he ingredient(s).	
Appropriate engineering controls	The tworguest exposure terms there is no main approximately. Good general venitation should be used. Venitation rates should be matched to conditions. If applicable, use process enclosures, local exhaust venitation, or other engineering controls to maintain ainforme levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product		
The following are recommend Hazard Assessment of the wo		t (PPE). The employer/user of this product must perform a CFR 1910.132 to determine the appropriate PPE for use	
Eye/face protection	Chemical respirator with organic vapor of	artricige and full facepiece.	
Skin protection			
Hand protection	Wear appropriate chemical resistant gloves.		
Other	Wear appropriate chemical resistant clothing.		
Respiratory protection	Chemical respirator with organic vapor cartridge and full facepiece.		
Thermal hazards	Wear appropriate thermal protective clot	hing, when necessary.	
General hygiene considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, dirikher, and/or smoking. Routlinely wash work clothing and protective equipment to remove contaminants		
9. Physical and chemical p	properties		
Appearance	·		
Physical state	Liquid.		
Form	Liquid.		
Color	CLEAR		
Odor	METAL ODOR		
Odor threshold	Not available		
pН	14		
Melting point/freezing point	58 °F (14 44 °C)		
Initial boiling point and boiling range	293 *F (145 °C) estimated		
Flash point	Not available		
Evaporation rate	Not available.		
Flammability (solid, gas)	Not applicable.		
Upper/lower flammability or exp	losive limits		
Flammability limit - lower (%)	Not available.		
Flammability limit - upper (%)	Net available.		

Material name: SODRUM HYDROXIDE S0% MEM/NSF 772282 Version # D1 Iasue date: 02-19-2022

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Carcinogenicity	Due to partial or co	implete lack of data the classification i	s nat possible.
IARC Monographs. Overall E	valuation of Carcin	nogenicity	
Not listed.			
OSHA Specifically Regulate	Substances (29 C	FR 1910.1001-1053)	
Not listed. US. National Toxicology Pro	aram (NTP) Report	on Carcinopens	
Not listed.	Brain field Freebone	on our anogoio	
Reproductive toxicity	Due to partial or co	implete lack of data the classification i	s not possible.
Specific target organ toxicity -	May cause respirat		
single exposure			
Specific target organ toxicity - repeated exposure	Due to partial or co	implete lack of data the classification i	s not possible.
Aspiration hazard	Due to partial or co	mplete lack of data the classification i	s not possible.
Chronic effects	Protonged inhalatic	on may be harmful.	
12. Ecological information			
Ecotoxicity	The product is pol-	classified as an iron mentally have go	us. However, this does not exclude the
Ecoloxicity			or damaging effect on the environment.
Components	Spi	ecies	Test Results
SODIUM HYDROXIDE (NA(O	H)) (CAS 1310-73-2	)	
Aquatic			
Crustacea	EC50 Wa	ter flea (Ceriodaphnia dubia)	34 59 - 47.13 mg/l. 48 hours
Fish	.C50 We	stern mosquitofish (Gambusia affinis)	125 mg/l, 96 hours
Persistence and degradability	No data is available	e on the degradability of this product.	
Bioaccumulative potential	No data available.		
Mobility in soll	No data available.		
Other adverse effects		environmental effects (e.g. ozone depl e disruption, global warming potential)	
13. Disposal consideration	\$		
Disposal instructions	Collect and reclaim	nor dispose in sealed containers at fic	ensed waste disposal site. Incinerate the
	accordance with lo	cal/regional/national/international regu	erator. Dispose of contents/container in lations.
Local disposal regulations		ance with all applicable regulations.	
Hazardous waste code			orrosive to steel] an the user, the producer and the waste
Waste from residues / unused products		rdance with local regulations. Emply o This material and its container must be	
Contaminated packaging			kow label warnings even after container is
oomanimated packaging			ed waste handling site for recycling or
14. Transport information			
DOT			
UN number	UN1824		
UN proper shipping name	SODIUM HYDROX	(IDE SOLUTION	
Transport hazard class(es) Class	8		
Subsidiary risk			
Packing group	11		
		ctions. SDS and emergency procedure	
Transport information on pack listed. Transportation informat			packaging may be different from that
assout manoperiori mierinat	or or becooling ind	, so emelore port due pored.	

Material name: SODRIM HYDROXIDE 50% MEM NSF 772282 Version #: D1 Issue date: 02-19-2022

les.			Country(s) or region	inventory name
			Europe	European List of Notified Chemical Substances (ELINI
1/2 Ju			Japan	Inventory of Existing and New Chemical Substances (
			Korea	Existing Chemicals List (ECL)
CORRÓSIVE			New Zealand	New Zealand Inventory
			Philippines	Philippine Inventory of Chemicals and Chemical Subst (PICCS)
			Taiwan	Taiwan Chemical Substance Inventory (TCSI)
15. Regulatory information US federal regulations	This product is a "Hazardous Chemical" as defined by the OSHA Ha	zaró Communication	A "No" indicates that one or more	Toxic Substances Control Act (TSCA) Inventory rents of this product comply with the inventory requirements ad components of the product are not listed or exempt from listing
	Standard, 29 CFR 1910.1200.		country(s).	
Toxic Substances Control #	. ,		<ol><li>Other information, inc</li></ol>	luding date of preparation or last revision
	port Notification (40 CFR 707, Subpt. D)		Issue date	02-19-2022
Not regulated.			Version #	01
CERCLA Hazardous Substa SODIUM HYDROXIDE (I SARA 304 Emergency relea	VA(OH)) (CAS 1310-73-2) Listed.		HMIS® ratings	Heatth: 3 Flammability: 0 Physical hazard: 0
Not regulated.	d Substances (29 CFR 1910.1001-1053)		NFPA ratings	Health. 3 Flammability: 0 Instability: 1
	authorization Act of 1986 (SARA)		Disclaimer	While Brenntag believes the information contained her
SARA 302 Extremely hazard				representation or warranty, express or implied, regardi
Not listed.				<ul> <li>accuracy or completeness of the Information. The Buy using and/or resetting the Product in accordance with a</li> </ul>
SARA 311/312 Hazardous chemical	Yes			SDS shall not in any way limit or preclude the operatio Brenntag's terms and conditions of sale.
Classified hazard categories	Skin corrosion or irritation Serious eve damage or eye irritation Specific target organ toxicity (single or repeated exposure)		Revision information	Physical & Chemical Properties: Multiple Properties Physical and chemical properties: Color Physical and chemical properties. Odor
SARA 313 (TRI reporting) Not regulated.				
Other federal regulations				
Clean Air Act (CAA) Section	112 Hazardous Air Pollutants (HAPs) List			
Not regulated. Clean Air Act (CAA) Section Not regulated.	112(r) Accidental Release Prevention (40 CFR 68.130)			
Safe Drinking Water Act (SDWA)	Not regulated.			
US state regulations				
	Nater and Toxic Enforcement Act of 1986 (Proposition 65): This mater ny chemicals currently listed as carcinogens or reproductive toxins. Fo ww.P65Warnings.ca.gov.			
US. California. Candida subd. (a))	te Chemicals List. Sater Consumer Products Regulations (Cal. Co	de Regs. tit. 22, 69502.3,		
SODIUM HYDROXII	DE (NA(OH)) (CAS 1310-73-2)			
International Inventories				
Country(s) or region	Inventory name	On inventory (yes/no)*		
Australia	Australian Inventory of Chemical Substances (AICS)	Yes		
Canada	Domestic Substances List (DSL)	Yes		
Canada	Non-Domestic Substances List (NDSL)	No		
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes		
Europe	European inventory of Existing Commercial Chemical Substances (EINECS)	Yes		

Material name: SODRUM HYDROXIDE S0% MEM NSF 772282 Version # D1 Issue date: 02-19-2022

DOT

# ChemTreat

## SAFETY DATA SHEET

1. Identification	
Product identifier	PB809
Other means of identification	None.
Recommended use	Biological Wastewater Treatment Aid
Recommended restrictions	None known.
Manufacturer/Importer/Supplier	/Distributor information
Manufacturer	
Company name	ChemTreat, Inc.
Address	5640 Cox Road Glen Allen. VA 23060
	United States
Telephone	800-648-4579
Website	chemtreat.com
E-mail	productcompliance@chemtreat.com
Emergency phone number	800-424-9300
2. Hazard(s) identification	1
Physical hazards	Not classified.
Health hazards	Not classified.
Environmental hazards	Not classified.
OSHA defined hazards	Combustible dust
abel elements	
Hazard symbol	None.
Signal word	Warning
Hazard statement	May form combustible dust concentrations in air.
Precautionary statement	
Prevention	Prevent dust accumulation to minimize explosion hazard, Keep away from heat/sparks/open flames/hot surfaces No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Observe good industrial hygiene practices.
Response	Take off contaminated clothing and wash it before reuse. In case of fire: Use appropriate media to extinguish.
Storage	Not available.
Disposal	Not available.
Hazard(s) not otherwise classified (HNOC)	None known.
Supplemental information	None.
3. Composition/informati	on on ingredients
Mixtures	
	ents as hazardous to health according to OSHA 29 CFR 1910.1200.
4. First-aid measures	
nhalation	Move to fresh air. Call a physician if symptoms develop or persist.
Skin contact	Wash off with soap and water. Get medical attention if irritation develops and persists.
Eye contact	Do not rub eyes. Rinse with water. Get medical attention if irritation develops and persists.
Ingestion	Rinse mouth. Get medical attention if symptoms occur.
Most important	Dusts may irritate the respiratory tract, skin and eyes.
symptoms/effects, acute and delayed	,
Material name: PB809	SDS I

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Country(s) or region	Inventory name	On inventory (yes/no)"
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Колеа	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
Faiwan	Talwan Chemical Substance Inventory (TCSI)	Yes
United States & Puerto Ricc	Toxic Substances Control Act (TSCA) Inventory	Yes
	anenis of this product comply with the inventory requirements administered by the re-components of the product are not listed or exempt from listing on the inventory a	
16. Other information, in	cluding date of preparation or last revision	
Issue date	02-19-2022	
Version #	01	
HMIS® ratings	Heatth: 3 Flammability: 0 Physical hazard: 0	
NFPA ratings	Heafth. 3 Flammability: 0 Instability: 1	
Disclaimer	While Brenntag beleves the information contained herein to be accurate representation or warrenty, segress or implicit, reparting, and assume accuracy or completeness of the information. The Buyer assumes all using and/or reselting the Product in accordance with applicable leders SDS shall not in any way limit or preclude the operation and effect of a Brenntagis terms and conditions of sale.	s no flability for, the esponsibility for handling, I, state, and local law This

Material name: SODRIM HYDROXIDE 50% MEM NS 772282 Version #: D1 Issue date: 02-19-2022

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#### Indication of immediate medical attention and special treatment needed Treat symptomatically General information Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. 5. Fire-fighting measures Avoid high pressure media which could cause the formation of a potentially explosible dust-air mixture. Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2). Apply extinguishing media carefully to avoid creating airborne dust. Do not use water jet as an extinguisher, as this will spread the fire. Suitable extinguishing media Unsuitable extinguishing media Explosion hazard: Avoid generating dust; fine dust dispersed in air in sufficient concentrations and in the presence of an ignition source is a potential dust explosion hazard. During fire, gases hazardous to health may be formed. Specific hazards arising from the chemical Special protective equipment and precautions for firefighters Self-contained breathing apparatus and full protective clothing must be worn in case of fire. In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk. Fire fighting equipment/instructions Use standard firefighting procedures and consider the hazards of other involved materials. Specific methods . General fire hazards May form combustible dust concentrations in air. 6. Accidental release measures Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Use only non-sparking tools. Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released in the tamosphere in sufficient concentration. Wear appropriate protective equipment and clothing during clean-up. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 6 of the SDS. Personal precautions, protective equipment and emergency procedures processor, see sector of or the SDS. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Take precautionary measures against static discharge. Use only non-sparking tools. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Stop the flow of material, if this is without risk. Methods and materials for containment and cleaning up Large Spills: Wet down with water and dike for later disposal. Shovel the material into waste container. Following product recovery, flush area with water. Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal. Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. Avoid discharge into drains, water courses or onto the ground. Environmental precautions 7. Handling and storage Minimize dust generation and accumulation. Avoid significant deposits of material, especially on horizontal surfaces, which may become airborne and form combustible dust clouds and may contribute to secondary explosions. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations. Provide adequate precations, such as electrical grounding and bonding, or inert atmospheres. Keep away from heat/sparksiopen filmers/hot surfaces. No smoking. Combustible dust clouds may be created where operations produce fine material (dust). Handling and processing operations should be conducted in accordance with best practices? (e.g. IPFA-651, Explosion-proof general and local exhaust ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. Precautions for safe handling Conditions for safe storage, including any incompatibilities , Keep containers tightly closed in a dry, cool and well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS). 8. Exposure controls/personal protection This mixture has no ingredients that have PEL, TLV, or other recommended exposure limit. Occupational exposure limits Biological limit values No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls	Explosion-proof general and local exhaust ventilation. Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limit. If exposure limits have not been established, maintain airborne levels to an acceptable level. It is recommended that all dust control equipment such as local exhaust ventilation and material transport systems involved in handling of this product contain explosion relief vents or an explosion suppression system or an oxygen-deficient environment. Ensure that dust-handling systems (such as exhaust duck, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment). Use only appropriately classified electrical equipment and powered industrial trucks.
Individual protection measures, Eye/face protection	such as personal protective equipment Wear safety glasses with side shields (or goggles).
	wear sarety grasses war side shields (or goggles).
Skin protection Hand protection	Wear appropriate chemical resistant gloves.
Other	Wear suitable protective clothing.
Respiratory protection	Treat subactive processive solutions, if engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	When using, do not eat, drink or smoke. Aways observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.
9. Physical and chemical	properties
Appearance	
Physical state	Solid.
Form	Powder.
Color	Brown.
Odor	Strong
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	32.00 °F (0 °C)
Initial boiling point and boiling range	Not available.
Flash point	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.
Upper/lower flammability or exp Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Dispersible
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.
Pounds per gallon	0
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Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of			
	contents/container in accordance with local/regional/national/international regulations.			
Local disposal regulations Dispose in accordance with all applicable regulations.				
Hazardous waste code The waste code should be assigned in discussion between the user, the producer and the disposal company.				
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).			
Contaminated packaging	ince emptied containers may retain product residue, follow label warnings even after container mptied. Empty containers should be taken to an approved waste handling site for recycling or isposal.			
14. Transport information				
DOT				
Not regulated as dangerous g	oods.			
IATA				
Not regulated as dangerous g	oods.			
IMDG				

#### Annex II of MARPOL 73/78 and the IBC Code

#### 15. Regulatory information

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. US federal regulations Toxic Substances Control Act (TSCA)

# TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

- CERCLA Hazardous Substance List (40 CFR 302.4)
- Not listed. SARA 304 Emergency release notification

- Not regulated. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053) Not regulated.
- Superfund Amendments and Reauthorization Act of 1986 (SARA)
- SARA 302 Extremely hazardous substant Not listed
- SARA 311/312 Hazardous Yes chemical
- Classified hazard categories Combustible dust
- SARA 313 (TRI reporting)

### Not regulated.

#### Other federal regulations Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

- Not regulated. Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130) Not regulated.
- Safe Drinking Water Act Not regulated. (SDWA)

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#### Prolonged skin contact may cause temporary irritation. Skin corrosion/irritation Serious eye damage/eye irritation Direct contact with eyes may cause temporary irritation. Respiratory or skin sensitization Respiratory sensitization Not a respiratory sensitizer Skin sensitization This product is not expected to cause skin sensitization No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic. Germ cell mutagenicity Carcinogenicity Not classifiable as to carcinogenicity to humans. IARC Monographs. Overall Evaluation of Carcinogenicity Not listed OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053) Not regulated. US. National Toxicology Program (NTP) Report on Carcinogen Not listed.

Material is stable under normal conditions

No hazardous decomposition products are known.

No adverse effects due to skin contact are expected

Expected to be a low ingestion hazard.

Direct contact with eyes may cause temporary irritation.

Dusts may irritate the respiratory tract, skin and eyes.

Strong oxidizing agents.

Information on likely routes of exposure Inhalation No adverse effects due to inhalation are expected.

Not known

No dangerous reaction known under conditions of normal use.

The product is stable and non-reactive under normal conditions of use, storage and transport

Keep away from heat, sparks and open flame. Contact with incompatible materials. Minimize dust generation and accumulation.

- Reproductive toxicity This product is not expected to cause reproductive or developmental effects. Specific target organ toxicity - Not classified. single exposure Specific target organ toxicity -Not classified repeated exposure Aspiration hazard Not an aspiration hazard. 12. Ecological information Ecotoxicity Minimal impact under normal conditions of use and storage. The bacterial cultures are naturally occurring soil type organisms. The carriers are naturally occurring materials. Persistence and degradability Contents are biodegradable.
- Bioaccumulative potential No data available Mobility in soil No data available No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component. Other adverse ef
- Material name: PB809 2678 Version #: 01 Issue date: 05-15-2023

10. Stability and reactivity

Reactivity

reactions Conditions to avoid

products

Chemical stability

Possibility of hazardous

Incompatible materials

Skin contact

Eye contact

Symptoms related to the physical, chemical and

toxicological characteristics Information on toxicological effects

Ingestion

Acute toxicity

Hazardous decomposition

11. Toxicological information

US state regulations California Proposition 65 california Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins. For more information go to www.P65Warnings.ca.gov. International Inventories 
 Country(s) or region
 Inventory name

 United States & Puerto Rico
 Toxic Substances Control Act (TSCA) Inventory
 On inventory (yes/no)\* \*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s) A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the gov countrv(s). 16. Other information, including date of preparation or last revision Issue date 05-15-2023 Version # 01 Further information Refer to Creter U: 05HA 3371-08 2009, Hazard Communication Guidance for Combustible Dusts NFPA 654, Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids HMIS® ratings Health: 0 Flammability: 2 Physical hazard: 0 Personal protection tion: B Personal protection: B Chemotocati, no.: cannot anticipate all conditions under which this information and its product, or the product of other manufacturers in combination with its product, may be used. It is the user's susponsibility the onsume safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available. Although the information and recommendations set forth herein (hereinafter "information") are presented in good faint and believed to be correct as of the date hereof. Chemitare, the makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons recoins game will Chemitreat, inc. be responsible for damages of any nature whatspower resulting from the use or reliance upon information. No representation or warranties, either expressed or implied, of merchantability, fitness for a particular purpose, or of any other nature are made hereunder with respect to information or the product to which information refers. Prepared by Product Compliance Department: ProductCompliance@chemiteat.com Disclaime Other information Prepared by: Product Compliance Department; ProductCompliance@chemtreat.com

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SAFETY DATA SHEET

Sulfuric Acid, All Grades

#### ACCORDING TO US CFR 1910.1200

1.1	Product identifier	
	Product Name	Sulfuric Acid, All Grades
	Chemical Formula	H <sub>2</sub> SO <sub>4</sub>
	Molecular weight	98.08
	CAS No.	7664-93-9
1.2	Relevant identified uses of the substance or	
	mixture and uses advised against	
	Identified Use(s)	<ul> <li>Used in manufacturing processes.</li> </ul>
		<ul> <li>Used for processing mineral ores, metal refining, petrochemical processing and water treatment.</li> </ul>
	Uses Advised Against	None known.
1.3	Details of the supplier of the safety data sheet	
	Company Identification	Cornerstone Chemical Company
		10800 River Road,
		Waggaman, Louisiana 70094,
		USA.
	Telephone	1-504-431-9511
	E-Mail (competent person)	info@cornerstonechemco.com
1.4	Emergency telephone number	
	CHEMTREC (USA and Canada)	1-800-424-9300 (24h)
	CHEMTREC (Outside of USA and Canada)	+1-703-527-3887 (24h)
SEC	TION 2: HAZARDS IDENTIFICATION	
2.1	Classification of the substance or mixture US CFR 1910.1200	Skin Corr. 1A: Causes severe skin burns and eye damage.
2.2	Label elements	
	Product Name	Sulfuric Acid, All Grades
	Hazard pictogram(s)	~
		200
		(本 祭)
		GHS05
	Signal word(s)	GHS05 Danger.
	Signal word(s) Hazard statement(s)	
		Danger.
	Hazard statement(s)	Danger. H314: Causes severe skin burns and eye damage.
	Hazard statement(s)	Danger. H314: Causes severe skin burns and eye damage. P260: Do not breathe mist/vapors.
	Hazard statement(s)	Danger. H314: Causes severe skin burns and eye damage. P260: Do not breathe mist/vapors. P264: Wash hands and exposed skin thoroughly after
	Hazard statement(s)	Danger. H314: Causes severe skin burns and eye damage. P260: Do not breathe mist/vapors. P264: Wash hands and exposed skin thoroughly after handling.
	Hazard statement(s)	Danger. H314: Causes severe skin burns and eye damage. H314: Causes severe skin burns and eye damage. P264: Wash hands and exposed skin thoroughly after handling. P280: Wear protective gloves/protective clothing/eye protection/face protection. P303+P361+P333: IFO N SkiN (or hair): Take off
	Hazard statement(s)	Danger. H314: Causes severe skin burns and eye damage. H280: Do not breathe mist/vapors. P284: Wash hands and exposed skin thoroughly after handling. P280: Wear protective gloves/protective clothing/eye protection/face protection.

water. P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

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#### Sulfuric Acid, All Grades

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SEC	TION 5: FIRE-FIGHTING MEASURES			
Non-c	ombustible.			
5.1	Extinguishing Media Suitable Extinguishing Media	Extinguish preferably with foam, carbon dioxide or dry		
5.2 5.3	Unsuitable Extinguishing Media Special hazards arising from the substance or mixture Advice for fire-fighters	chemical. Water. Risk of fire and explosion on contact with base(s). combustible substances, oxidants, reducing agents or water. Thermal decomposition will evolve toxic and corrosive vapors. (Sulfur oxides) Fire fighters should ware complete protective clothing including self-contained breathing apparatus. Keep containers cool by spraying with water if exposed to fire. Avoid direct contact with water		
SEC	TION 6: ACCIDENTAL RELEASE MEASU	DES		
6.1	Personal precautions, protective equipment and emergency procedures	In event of a spill, evacuate danger area. Stop leak if safe to do so. Ensure adequate ventilation. Do not breathe mist/vapors. Avoid contact with skin and eyes. Ensure suitable personal protection (including respiratory protection) during removal of spillages. Wash hands		
6.2 6.3	Environmental precautions Methods and material for containment and cleaning up	thoroughly after handling. Do not allow to enter drains, sewers or waterways. Small spillages: Contain spillages with sand, earth or any suitable adsorben material. Do Nor Jasborb in sav-dust or other combustible absorbents. Wash the spillage area with water.		
		Large spillages: Cautiously neutralize spilled liquid. Neutralize with: Lime, Soda Ash, Sodium hydroxide, Sodium Bicarbonate. Wash the spillage area with water.		
6.4	Reference to other sections	Contaminated adsorbent must be removed in sealed, plastic lined drums and disposed of via an authorized waste disposal contractor. See Also Section 8, 13.		
SEC	TION 7: HANDLING AND STORAGE			
7.1	Precautions for safe handling	Provide adequate ventilation. Do not breathe mist/vapors. Avoid contact with skin and eyes. Wear protective gloves/protective clothing/eye protection/face protection.Wash hands and exposed skin thoroughly after handling. Do not eat, drink or smoke when using this product.		
7.2	Conditions for safe storage, including any incompatibilities	Keep/store away from: Incompatible materials. Keep away from food, drink and animal feedingstuffs. Keep away from any possible contact with water, because of violent reaction and possible flash fire. Store in corrosive resistant container with a resistant inner liner.		
	Storage Temperature	Stable at ambient temperatures.		

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#### Sulfuric Acid, All Grades

2.3 Other hazards 2.4 Additional Information P310: Immediately call a POISON CENTER/doctor. Reacts violently with water. For full text of H/P Statements see section 16.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

 Hazardous ingredient(s)
 CAS No.
 %W/W
 Hazard Statement(s)
 Hazard Pictogram(s)

 Sulfuric acid
 7664-93-9
 93-98
 Skin Corr. 1A H314
 GHS05

3.2 Mixtures Not applicable.

3.3 Additional Information For full text of H/P Statements see section 16.

SECTION 4: FIRST AID MEASURES



4.2

Speed is essential. Get medical attention immediately. Guarantee that the eye flushing systems and safety showers are located close to the working place.

4.1 Description of first aid measures

Description of first aid measures	
Inhalation	Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.
Skin Contact	Take off immediately all contaminated clothing. Rinse skin
Eve Contact	with water. Wash contaminated clothing before reuse. Immediately call a POISON CENTER/doctor. Rinse cautiously with water for several minutes. Remove
Lye contact	contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.
Ingestion	Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER/doctor.
Most important symptoms and effects, both	Inhalation: Corrosive, Burns, Sore throat, Cough.
acute and delayed	Skin Contact: Corrosive, Redness, Pain, Blisters, Causes severe skin burns.
	Eye Contact: Corrosive, Redness, Pain, Causes severe
	burns.
	Ingestion: Corrosive, Abdominal pain, Burns, Shock, Collapse.

4.3 Indication of any immediate medical attention Treat symptomatically. and special treatment needed

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Life tible materials	Stable under normal conditions. Water, Metals, Combustible materials, Oxidizing agg Reducing agent, Alkalis, Acrylonitrile, Chlorates, Firn powdered metals, Nitrates, Perchlorates, Permanga
end use(s)	Epichiorohydrin, Aniline, Carbides, Fulminates, Picro Organic materials, Flammable liquid. Used in manufacturing processes. Used for processing mineral ores, metal refining, petrochemical processing and water treatment.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

# 8.1 Control parameters 8.1.1 Occupational Exposure Limits

Storage L Incompat

7.3 Specific

1		LTEL (8 hr TWA	STEL	STEL	Note
	ppm)	mg/m³)	(ppm)	(mg/m <sup>3</sup> )	
7664-93-9		1			OSHA PEL Z-1
		0.1		3	OSHA PEL
		1			NIOSH REL Z-1
		0.2			ACGIH TLV, T, A2, I
Occupational S	afety and Health Adn	anistration (OSHA)	Permissible	Exposure Lim	ait (PEL) from 29 CER
			01111001010	Exposure Em	III (I EE) IIIII EI III EI III
		(OSHA) Permissible	Exposure L	imits (PELs).	2019
from the NIOSH	Pocket Guide to Ch	emical Hazards table	Z-1: Up to	10-hour time	weighted average
(TWA) during a	40-hour work week,	2021			
The American C	Conference of Govern	nmental Industrial Hy	gienists (AC	GIH®) Thres	shold Limit Values
(TLVs®), 2021					
Measured as thoracic fraction of the aerosol					
2 Suspected Human Carcinogen Classification refers to sulfuric acid contained in strong inorganic acid mists.					
re controls					
riate engineerin	g controls	Recommen	ded: Use in	closed syster	ns.
		Provide ade	quate ventil	ation. Use wit	th local exhaust
		ventilation.	A washing f	acility/water fe	or eye and skin
		cleaning pu	rposes shou	ild be present	L
	upment				
Eye/face protection		Wear protective eye glasses for protection against liquid			
		splashes. Wear close fitting googles or full face shield.			
tection (Hand pro	tection/ Other)	Wear suitab	le protective	e clothing and	gloves.
	,	Wear: Impe	rvious glove	s. Gloves sho	ould be changed
		regularly to	avoid perme	ation probler	ns.
		Unsuitable o	noves mate	riale: Natural	rubber
	1910.1000.2-1 Occupational Sta National Institut from the NIOSH (TWA) during a The American C (TUASI), 2021 Measured as th Suspected Hum Classification re re controls riate engineerin, al protection equ protection	1910:1000 Z-1 Table, 2021 Occupational Safety and Health (Coccupational Safety and Health (From the NIOSH Tocket Guide to C) (TWA) during a 40-hour work week, The American Conference of Govern (TLV-88), 2021 Measured as thoracic fraction of the Suspected Human Carcinogen Classification refers to sulfuric acid of re controls frate engineering controls	Cocupational Safety and Health Administration (OSHA) F     101.1000.2-1 Table, 2021     Occupational Safety and Health (Administration (OSHA) F     101.1000.2-1 Table, 2021     Occupational Safety and Health (All'OSHA) Permissible     Instrinal Institute for Occupational Safety and Health (NII     trom the NIOSH Pocket Guide to Chemical Hazards table     (TWA) during a 40-hour work week, 2021     The American Conference of Governmental Industrial Hy     (TUVS9), 2021     Resourced at Muran Carcinogen     Classification refers to sulfuric acid contained in strong in     Protection equipment     protection equipment     protection     Wear protection()     Urear suitat     Wear suitat     Wear suitat     Wear suitat	O.2     O.2     O.2     Occupational Safety and Health Administration (OSHA) Permissible     101 1000.2     Totals.2021     Occupational Safety and Health (Cal/OSHA) Permissible Exposure (     Occupational Safety and Health (Cal/OSHA) Permissible Exposure (     Occupational Safety and Health (Cal/OSHA) Permissible Exposure (     Occupational Safety and Health (Cal/OSHA) Permissible 2-1: Up to     (Two) thrid performed the comparison Safety and Health (Cal/OSHA)     The American Conference of Governmental Industrial Hygienists (AC     (TVA9), 2021     Measured as Inoracic fraction of the aerosol     Suspected Human Cardrogen     Classification refers to sulfuric acid contained in strong Inorganic acid     re controls     rate engineering controls     protection equipment     protection     protection equipment     tection (Hand protection/ Other)     Wear suitable protection glorem	Occupational Safety and Health Administration (OSHA) Permissible Exposure Lin     Occupational Safety and Health Administration (OSHA) Permissible Exposure Lin     Occupational Safety and Health (Cal/OSHA) Permissible Exposure Linis (PEL).     Occupational Safety and Health (Cal/OSHA) Permissible Exposure Linis (PEL).     National Institute for Occupational Safety and Health (NIOSH) Recommended Ex     trom the NIOSH Pocket Guide to Chemical Hazards table Z-1: Up to 10-hour time     (TWA) during A-hour work week, 2021     The American Conference of Governmental Industrial Hygienists (ACGIH®) Three     (TUV®), 2021     Measured as thoracic fraction of the aerosol     Suspected Human Carcinogon     Classification refers to sulfuric acid contained in strong inorganic acid mists.     re controls     rate engineering controls     Protection equipment     protection     Wear prodective eye glasshes. Wear close fitting googles

Unsuitable gloves materials: Natural rubl Polychloroprene, Nitrile rubber, PVC.

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atory protection 

Thermal ha

#### Sulfuric Acid, All Grades

Normally no personal respiratory protection is necessary. Wear suitable respiratory protective equipment if exposure to levels above the occupational exposure limit is likely.

Not applicable.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

1	Information on basic physical and chemical	
	properties	1 June 1 d
	Appearance Color	Liquid. Clear
	Odor	Odorless
	Odor Threshold	Not established.
	pH	0.01 (N = 1.2)
		1.0 (N = 0.3)
	Melting Point/Freezing Point	Sulfuric acid, 98%: 34°F
		Sulfuric acid, 96%: 14°F
		Sulfuric acid, 93%: -22°F
	Initial boiling point and boiling range	Sulfuric acid, 98%: 613.4°F
	Flash point	Not applicable.
	Evaporation rate	< Ether.
	Flammability (solid, gas)	Non-flammable.
	Upper/lower flammability or explosive limits	Not applicable.
	Vapor pressure	<0.001mm Hg @ 68°F
	Vapor density	3.38 (Air = 1)
	Relative density	1615 - 1841kg/m <sup>a</sup> (OECD 109)
	Density	Not available.
	Solubility(ies)	Soluble in water.
	Partition coefficient: n-octanol/water	Not applicable.
	Auto-ignition temperature	Not applicable.
	Decomposition Temperature	644°F (340°C)
	Viscosity	Sulfuric acid, 98%: 22.5 cP
	Explosive properties	Not explosive.
	Oxidizing properties	Not oxidizing.
9.2	Other information	
	Percent Volatile by volume (%)	0 – 20 (Water)
	Dissociation constant	pKa = 1.92 (OECD 112)
SEC	TION 10: STABILITY AND REACTIVITY	(
10.1	Reactivity	Reacts violently with - Water, Organic materials, Inorganic materials.
10.2	Chemical stability	Stable at ambient temperatures.
10.3	Possibility of hazardous reactions	Risk of fire and explosion on contact with base(s),

	Epichlorohydrin, Aniline, Carbides, Fulminates, Picrates,
	powdered metals. Nitrates. Perchlorates. Permanganates
incompatible materials	Reducing agent, Alkalis, Acrylonitrile, Chlorates, Finely
Incompatible materials	from: Incompatible materials. Water, Metals, Combustible materials, Oxidizing agents.
	of violent reaction and possible flash fire. Keep/store away
Conditions to avoid	
Conditions to sucid	Keep away from any possible contact with water, because
	combustible substances, oxidants, reducing agents or water
r ossibility of nazaroous reductions	combustible substances, oxidants, reducing agents or
	Risk of fire and explosion on contact with base(s).
Chemical stability	Stable at ambient temperatures.
Reactivity	Reacts violently with - Water, Organic materials, Inorganic materials
	Reactivity Chemical stability Possibility of hazardous reactions Conditions to avoid Incompatible materials



#### Sulfuric Acid, All Grades

US RCRA Hazard Class

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Not listed. May be a RCRA D002 characteristically corrosive waste if not neutralized

L1. UN number     1830       UN No.     1830       14.2. UN proper shipping name     SULFURIC ACID       14.3. Transport hazard class(es)     SULFURIC ACID       ARRIDI Class     8       ARR Classification Code     C1       Limited Duamities     1       Lexcepted Quarities     E2       Emergency Action Code     2P       Mixed Packing Instructions for Packages P001 18C02       Mixed Packing Instructions for Packages P015       Packing Instructions for Packages P016       Special Provisions for Fortable Tanks       Tank Code for Tanks       L4BN       Special Provisions for Fortable Tanks       Tank Code for Tanks       L4BN       Special Provisions for Fortable Tanks       Tank Code for Tanks       L4BN       Special Provisions for Fortable Tanks       MDG Class       Bit Dimeter Quantities       L       Excepted Quantities       L4BN       Special Provisions for Fortable Tanks       L4BN       Bit Dimeter Quantities       L4DN       MDG Class       Bit Dimeter Quantities       MDG Class       Bit Dimeter Quantities       L2       Packing Instructions for Packages P001 18C02       Disequinal Provisions for Packages P0	SECTION 14: TRANSPORT IN	FORMATION
UN No.     1830       14.2. UN proper shipping name     SULFURIC ACID       14.3. Transport hazard class(e)     SULFURIC ACID       ADR/RID     ADR/RID       ADR/RID Class     8       ADR/RID Class     8       ADR Class(e)     1       Initiated Quantiles     1       Excepted Quantiles     20       Initiated Quantiles     20       Made Packing Instructions for Packages P01 IB C02       Mixed Packing Instructions for Packages P01 IB C02       Packing Instructions for Packages P01 IB C02       Mixed Packing Instructions for Packages P01 IB C02       Mixed Packing Instructions for Packages P01 IB C02       Packing Instructions	14.1 UN number	
UN proper shipping name         SULFURIC ACID           14.3 Transport hazard class(es)         ADR/RID           ADR/RID         S           ADR/RID Class         8           ADR/RID Class         8           ADR/RID Class         8           ADR/RID Class         1           Laceschaft         1           Excepted Quantities         1           Excepted Quantities         1           Special Provisions for Packages PV01 IBC02           Mixed Packing instructions for Packages PV01 IBC02           Mixed Cace for Tanks         L4BN           Special Provisions for Partable Tanks         TB           Special Provisions for Packages         PU1           MDR Classifies         1           MDR Classifies         1           Special Provisions for Packages         PU0 IBC02           MDR Classifies         1           Special Provisions for Packages         PU0 IBC02           MDR Classifies         1           Special Provisions for Packages         PU1 IBC02           MDR Classifies <t< th=""><th></th><th>1830</th></t<>		1830
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IA.3     Transport Natural Class(es)       ADR/RID       ADR/RID       ADR/RID       ADR/RID       ADR/RID       Initied Quantiles       E       Evergend Quantiles       E       Evergend Quantiles       E       Packing Instructions for Packages P011 IBC02       Mixed Packing Instructions for Packages P011 IBC02       Vehicle for Tank Carriage     AT       ADR R TianspOT Category     2       Tunnel Restriction Code     E       ADR R INN     80       MIGG Class     8       Limited Quantities     1       Special Provisions for Portable Tanks     T8       Special Provisions for Packages P001 IBC02       Packing Instructions for Packages P001 IBC02       Packing Instructions<		SHI FURICACID
ADR/RID       ADR/RID       ADR/RID       Class     8       ADR Class     1       Excepted Quantities     1       Exregnery Action Code     2P       Brengreny Action Code     2P       Brengreny Action Code     2P       Special Provisions for Portable Tanks     8       Special Provisions for Fortable Tanks     18       Special Provisions for Fortable Tanks     14BN       Special Provisions for Fortable Tanks     14BN       ADR Transpot Category     2       Tunnel Restriction Code     E       ADR Rink     80       MDG     B       Limited Quantities     1       Special Provisions for Fortable Tanks     8       Special Provisions for Fortable Tanks     8       MDG Glass     8       Limited Quantities     1       Special Provisions for Fortable Tanks     TA       Special Provisions for Fortable Tanks     TA       Special Provisions for Portable Tanks     TA	ora proper snipping name	SULFURIC ACID
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ADR Transport Category     2       ADR Transport Category     2       ADR NIN     80       MDG     1       Intrade Quantilies     1       Excepted Quantilies     12       Special Provisions for Portable Tanks     T8       Passnops and Cargo Aurcraft Max net QY     T9       Passnops and Cargo Aurcraft Max net QS     S5       Cargo Aurcraft Max net QS     S0       Cargo Aurcraft Max net QS     S0       Cargo Aurcraft Max net QS     S0		
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Linited Quantities         1 L           Excepted Quantities         E2           Mixed Packing Instructions for Packages POOI IBC02         Packing Instructions for Packages POOI IBC02           Packing Instructions for Packages POOI IBC02         Packages Pool IBC02           Spacial Provisions for Portable Tanks         TA           Mixed Packing Instructions For Packages         Packages POOI IBC02           Spacial Provisions for Portable Tanks         TA           Mixed Packages         SG1a SG36 SG49           CAO/ATA         SG1a SG36 SG49           CAO/ATA         SULFURIC ACID           Passenger and Cargo Aircraft Linited         Y840           Quantities Packing Instructions         Fasenger and Cargo Aircraft Linited           Passenger and Cargo Aircraft Max net QY         SL           Passenger and Cargo Aircraft Max net Q         St		
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Packing Instructions for Portable Tanks         T8           Special Provisions for Portable Tanks         TP2           MDG EMS         F-A, S-B           Stowaps and Handling         Calegory C SW15           Segregation         SGG1a SG36 SG49           CAOLATA         FOROPAR Shipping Name           Excepted Quantities         E2           Passenger and Cargo Aircraft Limited         VB40           Quantities Grago Aircraft Limited         0.5.L           Passenger and Cargo Aircraft Limited         0.5.L           Passenger and Cargo Aircraft Limited         0.5.L           Quantities Grago Aircraft Limited         0.5.L           Quantities Grago Aircraft Packing         B51           Cargo Aircraft Max net QY         30.L           Resenger on Cargos Guidebook         8L		
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IAT A Proper Shipping Name     SULEURIC ACID       Passenger and Cargo Atricraft Limited     Y840       Duantities Pasking Instructions     Sast       Passenger and Cargo Atricraft Limited     0.5L       Passenger and Cargo Atricraft Packing     B51       Passenger and Cargo Atricraft Max net     1L       Cargo Atricraft Max net     1L       Cargo Atricraft Nax net QV     30L       Emergeron Respons Guidebook     8L	Segregation	SGG1a SG36 SG49
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Emergency Response Guidebook 8L		
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#### Sulfuric Acid, All Grades

10.6	Hazardous Decomposition Product(s)	Organic materials, Flammable liquid. No hazardous decomposition products known.
SEC	TION 11: TOXICOLOGICAL INFORM	ATION
11.1	Information on toxicological effects	
	Acute toxicity	An acute toxicity test does not generally need to be conducted if the substance is classified as corrosive to the skin.
	Ingestion	Low oral toxicity, but ingestion may cause irritation of the gastrointestinal tract. LD50 (rat) = 2140 mg/kg
	Inhalation	Low acute toxicity. OECD 403: LC50 (rat) = 375 mg/m <sup>3</sup>
	Skin corrosion/irritation	Causes severe skin burns.
	Serious eye damage/irritation	Causes serious eye damage.
	Respiratory or skin sensitization	It is not a skin sensitizer.
	Germ cell mutagenicity	There is no evidence of mutagenic potential.
	Carcinogenicity	No evidence of carcinogenicity.
	Reproductive toxicity	No evidence of reproductive effects. OECD 414: NOAEC (mouse), (rabbit) = 19.3 mg/m <sup>3</sup>
	STOT - single exposure	Mist is severely irritant to the respiratory tract. Effect may vary from irritation of the nasal mucous membrane to severe lung irritation.
	STOT - repeated exposure	Repeated exposure to high levels produces adverse effects on the: Respiratory tract.
	Aspiration hazard	None anticipated.
11.2	Other information	None.
SEC	TION 12: ECOLOGICAL INFORMATIO	N
12.1	Toxicity	Low toxicity to aquatic organisms. OECD201: ErC50 (Desmodesmus subspicatus) (72 hour) >100 mg/l
		EyC50 (Desmodesmus subspicatus) (72 hour) >100 mg/l
12.2	Persistence and degradability	
12.2 12.3 12.4	Persistence and degradability Bioaccumulative potential Mobility in soil	EyC50 (Desmodesmus subspicatus) (72 hour) >100 mg/l OECD 202: EC50 (Daphnia magna) (48 hour) >100 mg/l The product is likely to persist in the environment. The product is not biodegrafable. The product has no potential for bioaccumulation. The product is soluble in water. The product is predicted to
12.3	Bioaccumulative potential	EyCS0 (Desmodesmus subspicatus) (72 hour) >100 mg/l OECD 202: ECS0 (Daphnia magna) (48 hour) >100 mg/l The product is likely to persist in the environment. The product is not biodegradable. The product has no potential for bioaccumulation.
12.3 12.4 12.5	Bioaccumulative potential Mobility in soil	EyCS0 (Desmodesmus subspicatus) (72 hour) >100 mgl OCED 202; CS60 (Daphina magna) (48 hour) >100 mgl The product is likely to persist in the environment. The product is not biodegradable. The product has no potential for bioaccumulation. The product is soluble in water. The product is predicted to have high mobility in soil. Large discharges may corditivate to the acadification of water and soil and will injure aquatic tife and soil micro-organisms.
12.3 12.4 12.5	Bioaccumulative potential Mobility in soil Other adverse effects	EyCS0 (Desmodesmus subspicatus) (72 hour) >100 mgl OCED 202; CS60 (Daphina magna) (48 hour) >100 mgl The product is likely to persist in the environment. The product is not biodegradable. The product has no potential for bioaccumulation. The product is soluble in water. The product is predicted to have high mobility in soil. Large discharges may corditivate to the acadification of water and soil and will injure aquatic tife and soil micro-organisms.
12.3 12.4 12.5 SEC 13.1	Bioaccumulative potential Mobility in soil Other adverse effects TION 13: DISPOSAL CONSIDERATIO Waste treatment methods	EyC50 (Desmodesmus subspicatus) (72 hour) >100 mgl OCED 202 CEO (Daphina manga) (48 hour) >100 mgl The product is likely to persist in the environment. The product is no biodegradable. The product has no potential for bioaccumulation. The product is soluble in water. The product is predicted to have high mobility in soil. Large discharges may contribute to the acidification of water and soil and will injure aquatic life and soil micro-organisms. NS Nutralize with: Line, Soda Ash, Sodium hydroxide, Sodium Bicarbonate. Contaminated solis from neturitazion activities should be recovered and containerized for proper disposal at a permitted facility.



#### Sulfuric Acid, All Grades





14.4 Packing group	
Packing group	11
14.5 Environmental hazards	
Environmental hazards	Not classified as a Marine Pollutant.
14.6 Special precautions for us	er
Special precautions for user	Not known.
14.7 Transport in bulk accordin	g to Annex II of Marpol and the IBC Code
	No information available

#### SECTION 15

SECTION 15: REGULATORY INFORM	IATION
15.1 US Federal Regulations	
Toxic and hazardous substances (29 CFR 1910;	Listed : Sulfuric acid (CAS No. 7664-93-9)
Subpart Z)	
National emission standards for hazardous air pollutants (40 CFR 61.01)	Not listed
SARA Title III Section 313	Not listed
TSCA (Toxic Substance Control Act)	Listed : Sulfuric acid (CAS No. 7664-93-9)
CAA 602 - Ozone Depleting Substances (ODS)	Not listed
15.2 US State Regulations	
State Right to Know Lists	
Proposition 65 (California)	Not listed
Minnesota	Listed : Sulfuric acid (CAS No. 7664-93-9)
New Jersey	Listed : Sulfuric acid (CAS No. 7664-93-9)
Pennsylvania	Listed : Sulfuric acid (CAS No. 7664-93-9)
Rhode Island	Listed : Sulfuric acid (CAS No. 7664-93-9)
15.3 Other	
OSPAR List of Chemicals for Priority Action	Not listed
OSHA (List of Highly Hazardous Chemicals,	Not listed
Toxics and Reactives)	
NTP (National Toxicology Program)	Listed : Sulfuric acid (CAS No. 7664-93-9
IARC (International Agency for Research on Cancer)	Listed : Sulfuric acid (CAS No. 7664-93-9

ogy Program)	Listed : Sulfuric acid (CAS No. 7664-93-9)
ency for Research on	Listed : Sulfuric acid (CAS No. 7664-93-9)

#### SECTION 16: OTHER INFORMATION

Revision: 3

The following sections contain revisions or new statements:

NFPA Health Fire Instability Special Hazards HMIS HMIS Health Flammability Physical haza 3 2 W rde

Date: 06/09/2021

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8, 9, 14, 15



#### Sulfuric Acid, All Grades

#### LEGEND Hazard Pictogram(s)

	<b>₹ ₹</b> )
	GHS05
Hazard Statement(s)	H314: Causes severe skin burns and eye damage.
Precautionary Statement(s)	P280: Do not breathe mist/vapors. P284: Wash hands and exposed skin thoroughly after handling. P280: Wase protective glowsprotective clothing/eye protection/face protection. P301+P303 P1931: IF SWALLOWED: Kinse mouth. Do NOT induce vomiting. P303+P301+P3051: IF ON SKIN (or hair): Take of Immediately all contaminate clothing. Rinse skin with water. P304+P302(I: IRINALED: Remove person to fresh air and keep comfortable fo breathing. P305+P351+P331: IFI NEYES: Rinse cautiously with water for several minutes
	Remove contact lenses, if present and easy to do. Continue rinsing. P310: Immediately call a POISON CENTER/doctor. P363: Wash contaminated clothing before reuse. P501: Dispose of contents in accordance with local, state or national legislation.
Acronyms	ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways ADR - European Agreement concerning the International Carriage of Dangerous Code - Carriage and Carriage Service IATA - International Air Transport Association IBC - International WatCrotaner ICAO - International WatCrotaner ICAO - International Martime Dangerous Goods LTEL - Long term exposure limit RID - Regulations concerning the International Carriage of Dangerous Goods by Rail STDT : Sepositic Target Organ Toxicity UN : United Nations
Disclaimers	Information contained in this publication or as otherwise supplied to Users is believed to be accurate and is given in good faith, but it is for the Users to satisf themselves of the suitability of the product for their own particular purpose. Cornerstone Chemical Company gives no warranty as to the fitness of the produ for any particular purpose and any implied warranty or condition telatutory or otherwise) is excluded except to the extent that exclusion is prevented by law. Cornerstone Chemical Company accepts no lability for loss or damage (other than that arising from death or personal injury caused by detective product, if proved), resulting from reliance on this information. Freedom under Patents, Copyright and Designs cannot be assumed.





# SAFETY DATA SHEET

# Section 1. Chemical Product and Company Identification

Product Name: Product Use: Supplier's Name: Emergency Telephone Number: Address (Corporate Headquarters): Telephone Number for Information: Date of SDS: Revision Date: Revision Number: ChemTreat P8315E Water Clarification/Solids Conditioning Agent (800)424–9300 (Toll Free) 5640 Cox Road Glen Allen, VA 23060 (800)648–4579 February 7, 2019 February 7, 2019 19020701AN

#### Section 2. Hazard(s) Identification

Signal Word:	None	
GHS Classification(s):	Non-Hazardous Substance	
Hazard Statement(s):	Non-Hazardous Substance	
Precautionary Statement(s):	No significant health risks are expected from exposures under normal conditions of use.	
Prevention:	None.	
Response:	None.	
Storage:	None.	
Disposal:	None.	
System of Classification Used:	Classification under 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).	
Hazards Not Otherwise Classified:	None.	

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ChemTreat P8315E





#### Section 3. Composition/Hazardous Ingredients

Component		CAS Registry #	Wt.%
Components not listed are either non hazardous or in concentration of less than 1%		N/A	N/A

#### Section 4. First Aid Measures

Inhalation:	Call a POISON CENTER or doctor/physician if you feel unwell.
Eyes:	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice/attention.
Skin:	Call a poison center or doctor/physician if you feel unwell.
Ingestion:	Rinse mouth. Call a poison center or doctor/physician if you feel unwell.
Most Important Symptoms:	N/D
Indication of Immediate Medical Attention and Special Treatment Needed, If Necessary:	N/A

#### Section 5. Fire Fighting Measures

Flammability of the Product:	Not flammable.
Suitable Extinguishing Media:	Use extinguishing media suitable to surrounding fire.
Specific Hazards Arising from the Chemical:	None known.
Protective Equipment:	If product is involved in a fire, wear full protective clothing including a positive-pressure, NIOSH approved, self-contained breathing apparatus.



#### Section 6. Accidental Release Measures

Personal Precautions:	Use appropriate Personal Protective Equipment (PPE).
Environmental Precautions:	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains, and sewers.
Methods for Cleaning up:	Contain and recover liquid when possible. Flush spill area with water spray. Material is very slippery if spilled.
Other Statements:	None.

#### Section 7. Handling and Storage

Handling:	Wear appropriate Personal Protective Equipment (PPE) when handling this product. Do not get in eyes, or on skin and clothing. Wash thoroughly after handling. Do not ingest. Avoid breathing vapors, mist or dust.
Storage:	Store away from incompatible materials (see Section 10). Store at ambient temperatures. Keep container securely closed when not in use. Label precautions also apply to empty container. Recondition or dispose of empty containers in accordance with government regulations. For Industrial use only. Protect from heat and sources of ignition. Store above Freeze Point.

#### Section 8. Exposure Controls/Personal Protection

Component		Source	Exposure Limits	
Components not listed are either non hazardous or in concentration of less than 1%		N/E	N/E	
Engineering Controls: Use only with adequate ventilation. The use of local ventilation is recommended to control emission near the source.				









#### Personal Protection

Eyes:	Safety glasses are recommended if risk of eye contact.
Skin:	Wear butyl rubber or neoprene gloves. Wash them after each use and replace as necessary. If conditions warrant, wear protective clothing such as boots, aprons, and coveralls to prevent skin contact.
Respiratory:	If misting occurs, use NIOSH approved organic vapor/acid gas dual cartridge respirator with a dust/mist prefilter in accordance with 29 CFR 1910.134.

#### Section 9. Physical and Chemical Properties

Physical State and Appearance: Specific Gravity:	Liquid Emulsion, White, Slightly Hazy 1.040 @ 20°C
pH:	5.0 @ 20°C, 0.5%
Freezing Point:	-13°F
Flash Point:	N/A
Odor:	Mild
Melting Point:	N/A
Initial Boiling Point and Boiling Range:	N/D
Solubility in Water:	N/D
Evaporation Rate:	N/A
Vapor Density:	N/D
Molecular Weight:	N/D
Viscosity:	N/D
Flammability (solid, gas):	N/D
Flammable Limits:	N/A
Autoignition Temperature:	N/A
Density:	8.76 LB/GA
Vapor Pressure:	N/A
% VOC:	N/D
Odor Threshold	N/D
n-octanol Partition Coefficient	N/D
Decomposition Temperature	N/D

#### Section 10. Stability and Reactivity

Chemical Stability:	Stable at normal temperatures and pressures.
Incompatibility with Various Substances:	Strong oxidizers.
Hazardous Decomposition Products:	Oxides of carbon, Oxides of nitrogen.
Possibility of Hazardous Reactions:	None known.
Reactivity:	N/D
Conditions To Avoid:	N/D

#### Section 11. Toxicological Information

Chemical Name	Ex	posure	Type of Effect	Concentration	Species
ChemTreat P8315E	On	al	LD50	>5000 MG/KG	Rat
Carcinogenicity Category					
Component Components not listed are either non hazarde		Source N/E	Code N/E	Brief Description	
components not listed are either non nazardi concentration of less than 1%	ous or IN	IN/E	IWE	IW/E	
Inhalation:		N/D			
Eye Contact:		N/D			
Skin Contact:		N/D			
Ingestion:		N/D			

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Type of Effect

Water clarification polymers function by multipoint adsorption and charge neutralization with suspended solids. Polymers inherently migrate with solids in the separation process and with the exception of uneconomic overdose do not remain in the clarified waters. Aquatic toxicity determinations in test method protocol waters without suspended solids overestimate the toxicity compared to natural receiving waters.

Test Results

>10 mg/l >50 mg/l

```
ChemTreat P8315E
```



Serious Eye Damage/Eye Irritation:

Germ Cell Mutagenicity:

Aspiration Hazard:

Comments:

Ecotoxicity Species

Fathead Minnow Daphnia magna

Persistence and Biodegradability:

Mobility In Soil: Other Adverse Effects:

Comments:

Bioaccumulative Potential:

Reproductive/Developmental Toxicity:

Specific Target Organ Toxicity

Single Exposure:

Repeated Exposure:

Section 12. Ecological Information

Sensitization:

N/D

N/D

N/D

N/D

N/D

None.

N/D

N/D N/D

N/D

N/D

N/D





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# SDS

ChemTreat P8315E

#### Section 13. Disposal Considerations

Dispose of in accordance with local, state and federal regulations. Not a RCRA-regulated hazardous waste when disposed in the original product form.

#### Section 14. Transport Information

Controlling					Packing
Regulation	UN/NA#:	Proper Shipping Name:	Technical Name:	Hazard Class:	Group:
DOT	N/A	COMPOUND, INDUSTRIAL	N/A	N/A	N/A
		WATER TREATMENT, LIQUID			
IMDG	N/A	COMPOUND, INDUSTRIAL	N/A	N/A	N/A
		WATER TREATMENT, LIQUID			
TDG	N/A	COMPOUND, INDUSTRIAL	N/A	N/A	N/A
		WATER TREATMENT, LIQUID			
ICAO	N/A	COMPOUND, INDUSTRIAL	N/A	N/A	N/A
		WATER TREATMENT, LIQUID			
			•		
Note:		N/A			

#### Section 15. Regulatory Information

Inventory Status

United States (TSCA): Canada (DSL/NDSL): All ingredients listed. All ingredients listed.

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Duration

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Sections 311/312 Hazard Classes

Comments:

ncentration of less than 1%

Component Components not listed are either non hazardous or in

Other Sections

California Proposition 65:

Special Regulations

Food Regulations:

Compliance Information NSF:

KOSHER:

Halal:

FIFRA:

Fire Hazard:

Reactive Hazard: Release of Pressure: Acute Health Hazard: Chronic Health Hazard:

Component Components not listed are either non hazardous or concentration of less than 1%

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Federal Regulations SARA Title III Rules

State Regulations







			303					
					Other:			None
					Comments:		None.	
t: No azard: No Pressure: No th Hazard: No alth Hazard: No				Section 16. Ot	her Informa	tion		
			HMIS Hazard Ratin	g				
			Health: Flammability: Physical Hazard: PPE:			0 0 0 X		
	Section 313	Section 302 EHS		1	Notes:			The PPE rating depends on circumstances of use. See
e either non hazardous or in 1%	N/A	TPQ N/A	N/A	]				Section 8 for recommended PPE. The Hazardous Material Information System (HMIS) is a voluntary, subjective alpha-numeric symbolic system for
None. This product contains California to cause ca other reproductive ha	s chemical(s) kr ancer and/or to	cause birth defe			Abbreviations			recommending hazard risk and personal protection equipment information. It is a subjective rating system based on the evaluator's understanding of the chemical associated risks. The end-user must determine if the code is appropriate for their use.
					Abbreviation	Definition		
				-	<	Less Than Greater Than		
	tates			-	ACGIH		nce of Gov	ernmental Industrial Hvaienists
n nazardous or in No	one.				EHS	Environmental Hea		
					N/A	Not Applicable		
					N/D	Not Determined		
					N/E	Not Established		
N/A					OSHA PEL	Occupational Healt Personal Exposure		ety Dept
					STEL	Short Term Exposure		
FDA: GRAS, 21 CFF					TLV	Threshold Limit Va		
Recognized as Safe					TWA	Time Weight Avera	age	
Federal Food, Drug a for their intended use					UNK	Unknown		
for food processing v feed, and is subject t	vaste destined f	or recycling as a			Prepared by:		Produc	ct Compliance Department; ProductCompliance@chemtreat.com
This product has not	been evaluated	l for Kosher app	roval.		Revision Date:		Februa	ary 7, 2019
This product has not	been evaluated	l for Halal appro	val.					
N/A								

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#### Disclaimer

n and recommendations set forth herein (hereinafter "informati makes no representations as to the completeness or accurac no determination as to its suitability for their purposes prior to u titing from the use or reliance upon information. No represents of any other nature are made hereunder with respect to inforr nafter "information") are presented in good faith and believed to be correct as of the date ness or accuracy thereof. Information is supplied upon the condition that the persons receivi poses prior to use, in on event will ChemTreat, it. be responsible for damages of any No representation or warranties, either expressed or implied, of merchantability, fitness for sepect to information or the product to which information relers. inc



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# SAFETY DATA SHEET

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#### Section 1. Chemical Product and Company Identification

Product Name: Product Use: Supplier's Name: Emergency Telephone Number: Address (Corporate Headquarters): Telephone Number for Information: Date of SDS<sup>1</sup> Revision Date: Revision Number:

ChemTreat BL1303 Boiler Water Treatment ChemTreat, Inc. (800)424-9300 (Toll Free) 5640 Cox Road Glen Allen, VA 23060 (800)648-4579 April 30, 2020 April 30, 2020 20043001AN

Section 2. Hazard(s) Identification

# DANGER Skin corrosion/irritation – Category 1b Eye damage/irritation – Category 1 Acute Toxicity Dermal – Category 4 Acute Toxicity Inhalation – Category 4 Acute Toxicity Inhalation – Category 4 GHS Classification(s):

H314 Causes severe skin burns and eye damage. H318 Causes serious eye damage. H312 Harmful in contact with skin. H324 Harmful if inhaled. H302 Harmful if swallowed. Hazard Statement(s):

Signal Word:

Precautionary Statement(s):

Prevention:

P260 Do not breathe dust/fume/gas/mist/vapors/spray. P264 Wash thoroughly after handling. P270 Do not eat, drink, or smoke when using this product. P271 Use only outdoors or in a well-ventilated area. P280 Wear protective gloves/protective clothing/eye protection/face protection.









Response:

Storage:

Disposal:

Component Sodium hydroxide

Comments

Inhalation

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Handling:

Storage:

Eyes:

System of Classification Used: Hazards Not Otherwise Classified:

Section 4. First Aid Measures



P301 + P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell P301 + 330 + 331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. P303 + P361 + P353 IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower P304 + P340 IF INHALED: Remove person to fresh air and keen comfortable for breathing.

P305 + P30 + P336 in INCELES, Ninse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P310 Immediately call a POISON CENTER/doctor. P363 Wash contaminated clothing before reuse.

P501 Dispose of contents and container in accordance with applicable local, regional, national, and/or international regulations.

Wt.%

Classification under 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

If chemical identity and/or exact percentage of composition has been withheld, this information is considered to be a trade secret.

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a poison center or doctor/physician.

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor/physician.

CAS Registry #

1310-73-2

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air and keep comfortable for breathing P305 + P351 + P338 IF IN EYES: Rinse

P405 Store locked up.

None.

Section 3. Composition/Hazardous Ingredients





Skin:	Immediately remove/take off all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before re-use. Immediately call a poison center or doctor/physician.
Ingestion:	DO NOT INDUCE VOMITING. Rinse mouth. Call a POISON CENTER or doctor/physician.
Most Important Symptoms:	N/D
Indication of Immediate Medical Attention and Special Treatment Needed, If Necessary:	N/A

Flammability of the Product:	Not flammable.
Suitable Extinguishing Media:	Use extinguishing media suitable to surrounding fire.
Specific Hazards Arising from the Chemical:	Use water spray to keep containers cool.
Protective Equipment:	If product is involved in a fire, wear full protective clothing including a positive-pressure, NIOSH approved, self-contained breathing apparatus.

#### Section 6. Accidental Release Measures

Personal Precautions:	Use appropriate Personal Protective Equipment (PPE).
Environmental Precautions:	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains, and sewers.
Methods for Cleaning up:	Contain and recover liquid when possible. Flush spill area with water spray.
Other Statements:	If RQ (Reportable Quantity) is exceeded, report to National Spill Response Office at 1-800-424-8802.

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**ChemTreat** 

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ChemTreat BL1303





ChemTreat BL1303

#### Section 7. Handling and Storage

Wear appropriate Personal Protective Equipment (PPE) when handling this product. Do not get in eyes, or on skin and clothing. Wash thoroughly after handling. Do not ingest. Avoid breathing vapors, mist or dust. Store away from incompatible materials (see Section 10). Store at ambient temporatives. Keen container securely closed when pro-

Store away from incompatible materials (see Section 10). Store at ambient temperatures. Keep container securely closed when not in use. Label precautions also apply to empty container. Recondition or dispose of empty containers in accordance with government regulations. For Industrial use only. Store above Freeze Point.

#### Section 8. Exposure Controls/Personal Protection

Exposure Limits

Component	Source	Exposure Limits		
Sodium hydroxide	ACGIH TLV	2 mg/m <sup>3</sup> Ceiling		
	OSHA PEL	2 mg/m <sup>3</sup> TWA		
Engineering Controls:	Use only with adequate ventilation. The use of local ventilation is recommended to control emission near the source.			
Personal Protection				
Eyes:	Wear chemical splash goggles or safety glasses with full–face shield. Maintain eyewash fountain in work area.			
Skin:	Maintain quick-drench facilities in work area. Wear butyl rubber or neoprene gloves. Wash them after each use and replace as necessary. If conditions warrant, wear protective clothing such as boots, aprons, and coveralls to prevent skin contact.			
Respiratory:	If misting occurs, use NIOSH approved organic vapor/acid gas dual cartridge respirator with a dust/mist prefilter in accordance with 29 CFR 1910.134.			

# Section 9. Physical and Chemical Properties

Physical State and Appearance: Specific Gravity: pH: Freezing Point: Flash Point: Odor: Melting Point: Initial Boiling Point and Boiling Range: Solubility in Water: Evaporation Rate:	Liquid, Colorless, Clear 1.027 @ 20°C 13.5 @ 20°C, 100.0% 34°F N/D Odorless N/A 212°F Complete N/A
Vapor Density:	As Water
Molecular Weight:	N/D
Viscosity:	N/A
Flammability (solid, gas):	N/D
Flammable Limits:	N/A
Autoignition Temperature:	N/A
Density:	8.57 LB/GA
Vapor Pressure:	As Water
% VOC: Odor Threshold	0 N/D
n-octanol Partition Coefficient	N/D
Decomposition Temperature	N/D
	· · · =

#### Section 10. Stability and Reactivity

Chemical Stability:	Stable at normal temperatures and pressures.
Incompatibility with Various Substances:	Strong oxidizers, Acids, Tin, Zinc.
Hazardous Decomposition Products:	Oxides of carbon, Oxides of sulfur.
Possibility of Hazardous Reactions:	None known.
Reactivity:	N/D
Conditions To Avoid:	N/D







#### Section 11. Toxicological Information

Chemical Name	Exp	osure	Type of Effect	Concentration	Species
Sodium hydroxide	Ora		LD50	300 MG/KG	Rat
	Der	mal	LD50	1350 MG/KG	Rabbit
Carcinogenicity Category					
Component		Source	Code	Brief Description	
Sodium hydroxide		N/E	N/E	N/E	
Likely Routes of Exposure:	N/D				
Symptoms					
Inhalation:		N/D			
Eye Contact:		N/D			
Skin Contact:		N/D			
Ingestion:		N/D			
Skin Corrosion/Irritation:	N/D				
Serious Eye Damage/Eye Irritation:	N/D				
Sensitization:	N/D				
Germ Cell Mutagenicity:	N/D				
Reproductive/Developmental Toxicity:	N/D				
Specific Target Organ Toxicity					
Single Exposure:		N/D			
Repeated Exposure:		N/D			
Aspiration Hazard:	N/D				
Comments:	None.				

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#### Section 12. Ecological Information

Species		Duration	Type of Effect	Test Results
Fathead Minnow		96h	LC50	>10000 mg/l
Ceriodaphnia dubia		48h	LC50	>10000 mg/l
Persistence and Biodegradability:	N/D			
Bioaccumulative Potential:	N/D			
Mobility In Soil:	N/D			
Other Adverse Effects:	N/D			
Comments:	None.			

#### Section 13. Disposal Considerations

Dispose of in accordance with local, state and federal regulations. EPA corrosivity characteristic hazardous waste D002 when disposed of in the original product form.

#### Section 14. Transport Information

Controlling					Packing
Regulation	UN/NA#:	Proper Shipping Name:	Technical Name:	Hazard Class:	Group:
DOT	UN1824	SODIUM HYDROXIDE SOLUTION	N/A	8	PGII
IMDG	UN1824	SODIUM HYDROXIDE SOLUTION	N/A	8	PGII
TDG	UN1824	SODIUM HYDROXIDE SOLUTION	N/A	8	PGII
ICAO	UN1824	SODIUM HYDROXIDE SOLUTION	N/A	8	PGII

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Inventory Status

Federal Regulations

Section 15. Regulatory Information

United States (TSCA): Canada (DSL/NDSL):

Sections 311/312 Hazard Classes

Fire Hazard:

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ChemTreat BL1303



**Compliance Information** NSF:

> KOSHER: Halal:

FIFRA:

Other:

Comments:

Food Regulations:

N/A
FDA: All ingredients in this product are authorized in 21 CFR 173.310 for use as "Boiler Water Additives" where the steam may contact food.
This product has not been evaluated for Kosher approval.

This product has not been evaluated for Halal approval.
N/A
None

3 0

X

None.

#### Section 16. Other Information

**HMIS Hazard Rating** 

Notes:

Health: Flammability: Physical Hazard: PPE:

The PPE rating depends on circumstances of use. See Section 8 for recommended PPE. The Hazardous Material Information System (HMIS) is a voluntary, subjective alpha-numeric symbolic system for recommending hazard risk and personal protection equipment information. It is a subjective rating system based on the evaluator's understanding of the chemical associated risks. The end-user must determine if the code is appropriate for their use.

#### Abbreviations

Abbreviation	Definition	
<	Less Than	
>	Greater Than	
ACGIH	American Conference of Governmental Industrial Hygienists	
EHS	Environmental Health and Safety Dept	
N/A	Not Applicable	
N/D	Not Determined	
N/E	Not Established	
OSHA	Occupational Health and Safety Dept	
PEL	Personal Exposure Limit	

Reactive Hazard: Release of Pressure: Acute Health Hazard: Chronic Health Hazard: Other Sections

SARA Title III Rules

Component		Section 313 Toxic Chemical	Section 302 EHS TPQ	CERCLA
Sodium hydroxide		N/A	N/A	1000
Comments:	None.			

States MA, MN, NY, PA, WA

All ingredients listed. All ingredients listed.

No No No Yes No

#### State Regulations

California Proposition 65: None known.

#### Special Regulations

Component Sodium hydroxi

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RQ

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Abbreviation	Definition			
STEL	Short Term Exposure Limit			
TLV	Threshold Limit Value			
TWA	Fime Weight Average			
UNK	Unknown			
Prepared by:	Product Compliance Department; ProductCompliance@chemtreat.com			
Revision Date:	April 30, 2020			

### Disclaimer

Although the information and recommendations set forth herein (hereinafter "information") are presented in good faith and believed to be correct as of the date hereor. ChemTreat, Inc. makes no representations as to the completeness or accuracy thereor. Information is supplied upon the condition that he persons receiving ame will make their own determination as to is subaitably for their purposes prior to use. In no event WI ChemTreat, the creations the condition that he persons receiving nature whatsever resulting from the use or reliance upon information. No representation or warranties, either expressed or implied, or more containability, fitness for a particular purpose, or of any other nature are made hereuner with respect to information. The product to which information refers.





## SAFETY DATA SHEET

Section 1. Chemical Product and Company Identification

Product Name:	ChemTreat FO180
Product Use:	Defoamer
Supplier's Name:	ChemTreat, Inc.
Emergency Telephone Number:	(800)424-9300 (Toll Free)
Address (Corporate Headquarters):	5640 Cox Road
	Glen Atlen, VA 23060
Telephone Number for Information:	(800)648-4579
Date of SDS:	February 7, 2019
Revision Date:	February 7, 2019
Revision Number:	19020701AN

Section 2. Hazard(s) Identification

Signal Word: None GHS Classification(s): Non-Hazardous Substance Hazard Statement(s): Non-Hazardous Substance No significant health risks are expected from exposures under normal conditions of use. Precautionary Statement(s): Prevention: None. Response: None. Storage: None. Disposal: None. System of Classification Used: Classification under 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

(29 CFR s Not Otherwise None,

Hazards Not Otherwise Classified:

19820161AH 82307/19

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ChemTreat FD188

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ChemTreat BL1303



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Section 3.	Composition/Hazardous	Incrediente

Comments	If chemical ident withheld, this infi	ity and/or exact percents ormation is considered to	ge of composition has been
Components not listed are either itori ha less than 1%	zeroous or its concentration of	NSA	N/A
Component	Contraction of the second	CAS Registry #	WIL56

### Section 4. First Aid Measures

Inhalation:	Call a POISON CENTER or doctor/physician if you feel unwell.
Eyes:	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do, Continue rinsing, if eye irritation persists, get medicet advice/attention.
Skin:	Call a polson center or doctor/physician if you feel unwell.
Ingestion:	Rinse mouth. Call a poison center or doctor/physician if you feel unwell.
Most Important Symptoms:	N/D
Indication of Immediate Medical Attention and Special Treatment Needed, If Necessary:	N/A

#### Section 5. Fire Fighting Measures

96701AA 82/03/19

Flammability of the Product:	Not flammable.
Suitable Extinguishing Media:	Use extinguishing media suitable to surrounding fire.
Specific Hazards Arising from the Chemical;	Use water spray to keep containers cool.
Protective Equipment:	If product is involved in a fire, wear full protective clothing including a positive-pressure, NIOSH approved, self-contained breathing apparatus.



#### Section 6. Accidental Release Measures

Personal Precautions:	Use appropriate Personal Protective Equipment (PPE).
Environmental Precautions:	Avoid dispersal of spitled material and runoff and contact with soil, waterways, drains, and sewers.
Methods for Cleaning up:	Contain and recover liquid when possible. Flush spill area with water spray.
Other Statements:	None.
Section 7. Handling and	-
Section 7. Handling and Handling:	Wear appropriate Personal Protective Equipment (PPE) when handling this product. Do not get in eyes, or on skin and clothing.
	Wear appropriate Personal Protective Equipment (PPE) when

#### Section 8. Exposure Controls/Personal Protection

Component	Source	Exposure Limits
Components not listed are either non hazardous or in concentration of less than 1%.	N/E	NE

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Personal Protection

Eyes: Safely glasses are recommended if risk of eye contact. Wear butyl rubber or neoprene gloves. Wash them after each use and replace as necessary. If conditions warrant, wear protective clothing such as boots, aprons, and coveralls to prevent skin contact. Skin:

Respiratory:

None needed under normal conditions of use.

# Section 9. Physical and Chemical Properties

Physical State and Appearance: Specific Gravity:	Liquid Emulsion, White, Opaque	
opecate Gravity; pH;	0.961 @ 20°C	
Freezing Point:	7.1 @ 20°C, 100.0%	
Flash Point:	32°F	
Odor:	N/D	
Melting Point:	Mild	
	N/A	
Initial Boiling Point and Boiling Range:	N/D	
Solubility in Water:	Appreciable	
Evaporation Rate:	ND	
Vapor Density:	N/D	
Molecular Weight:	N/D	
Viscosity:	150 - 500 CPS @ 20°C	
Flammability (solid, gas):	N/D	
Flammable Limits:	N/A	
Autolgnition Temperature:	N/A	
Density:	8.18 LB/GA	
Vapor Pressure:	N/D	
% VOC:	G	
Odor Threshold	N/D	
n-octanol Partition Coefficient	N/D	
Decomposition Temperature	NO	

#### Section 10. Stability and Reactivity

ChemTreat

Specific Target Organ Toxicity Single Exposure:

Aspiration Hazard:

Comments:

Ecotoxicity Species Faihead Minnow

Persistence and Blodegradability:

Mobility in Soli:

Commants:

Bioaccomulative Potential;

Other Adverse Effects:

Repeated Exposure:

Section 12. Ecological Information

Section 13. Disposal Considerations Dispose of in accordance with local, state and federal regulations.

N/D

N/D

N/D

None

N/D

N/D

N/D

N/D

Nona.

Chemical Stability:	Stable at normal temperatures and pressures.	
Incompatibility with Various Substances:	Acids, Halogens, Basos.	
Hazardous Decomposition Products:	Oxides of carbon,	
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Section 11. Toxicologi	cal inton	nation			
Acute Toxicity	Exp	osure	Type of Effect	Concentration	Species
NO	NO		NO	N/D	N/D
Component		Source	Code	Brisf Description	
Congunesis nul lisioù are ellher non hazer congeniration afiest than 1%	dous or in	NE	N/E	ħ/E	
iymptoms					
Symptoms Inhalation:		N/D			
		N/D N/D			
Inhalation:					
Inhalation: Eye Contact:		N/D			
Inhalation: Eye Contact: Skin Contact: Ingestion:	N/D	N/D N/D			
Inhalation: Eye Contact: Skin Contact: Ingestion: Skin Corrosion/Irritation: Serious Eye Damage/Eye	N/D N/D	N/D N/D			
Eye Contact: Skin Contact:		N/D N/D			

Paga \$ of 9

None known

N/D

N/D

ChemTreat

Reproductive/Developmental Toxicity:

19020701AN 0201159

ChemTreat

Possibility of Hazardous Reactions:

Reactivity:



ChemTreat FO180

#### Section 14. Transport Information

UNINAR;	Proper Shipping Name:	Technical Name	Hazard Class:	Packing Group:
N/A	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	NØA	N/A
N/A	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	NA	:WA
N/A	GOMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	NoA	N/A
N/A	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	NØA	N/A
	N/A N/A N/A	NA COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID AVA COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID WA COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID AVA COMPOUND, INDUSTRIAL	NA         COMPOUND, INDUSTRIAL,         NA           VXATER TREATMENT LOUID         SA         COMPOUND, INDUSTRIAL,         NA           VATER TREATMENT LOUID         NA         VATER TREATMENT LOUID         NA	NA         COMPOUND INDUSTRIAL         NA         NA           WATER TREATMENT (LOUD         NA         NA           SA         COMPOUND INDUSTRIAL         NA         NA           WATER TREATMENT (LOUD         NA         NA         NA           MARE TREATMENT (LOUD         NA         NA         NA           MA         COMPOUND INDUSTRIAL         NA         NA           MARE TREATMENT (LOUD         NA         NA         NA           MARE TREATMENT (LOUD         NA         NA         NA

## Section 15. Regulatory Information

United States (TSCA): Canada (DSL/NDSL): Federal Regulations

SARA Title III Rules

Sections 311/312 Hazard Classes

Fire Hazard: Reactive Hazard: Release of Pressure: Acute Health Hazard: Chronic Health Hazard:		No No No	
er Sections			
Component	Section 313 Toxic Chemical	Section 302 EHS	CERCLA RO

Comments: None.

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Cham?reat FO180

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All ingredients listed. All ingredients listed.





California Proposition 65:

Special Regulations

Food Regulations:

Section 16. Other Information

Health: Flammability: Physical Hazard: PP£:

4. First-aid measures

Most important symptoms/effects, acute and delayed Indication of immediate medical attention and special treatment needed

Inhalation

Skin contact

Eye contact Ingestion

Compliance Information NSF:

KOSHER

Halal:

FIFRA:

Other:

RMIS Hazard Rating

Comments:

Component Components nol listed are sifter non hazardous or in concentration of fees than 1%

None

State Regulations



Move to fresh air. Call a physician if symptoms develop or persist.

never a ricentaria, cana projavani negripuona devenjo v prisas. Take off immediately all contaninated coloning. Risnes skin vitili water/shower Call a physician or polson control center immediately. Chemical burns must be treated by a physician. Wash contaminated coloning before reuse.

contaminated citoting peorie reuse. Immediately lush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and ceavy to do. Confinue rissing. Call a physician or poison control center immediately. Call a physician or poison control center immediately. Risse mouth, Do not induce vomition, if vomiting occurs, keep head low so that stomach content ocean't get into the lungs

Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including binnense could result.

Provide general supportive measures and treat symptomatically. Chemical burns: Fiksh with water immediately. While flushing, remove clothes which do not achiere to affected area. Call an ambulance. Cookinue flushing during transport to hospital. Keep victim under observation. Symptoms may be delayed.



#### SAFETY DATA SHEET

This product cont	ains chemical(s) known to the State of		1. Identification Product identifier	SODIUM HYDROXIDE 20%	MEM 1-WAY		
California to cause	e cancer and/or to cause birth defects or		Other means of identification	None.			
#75-21-8, <=20.0	e harm: Ethylene Oxide, CAS		Recommended use	ALL PROPER AND LEGAL	PURPOSES		
This product conta	ains chemical(s) known to the State of		Recommended restrictions	None known.			
other reproductive	e cancer and/or to cause birth defects or s harm: Propylene oxide, CAS		Manufacturer/Importer/Supplier/	Distributor information			
#75~56-9.			Manufacturer	Bernette On the est las			
			Company name Address	Brenntag Southwest. Inc. 610 Fisher Road			
	States		Addites	Longview, TX 75604			
on hazaiduus or in	Nung.		Telephone	903-759-7151			
		1	E-mail	Not available.	OUENTEES		
			Emergency phone number	800-424-9300	CHEMTREC		
N/A			<ol><li>Hazard(s) identification</li></ol>				
FDA: Complies wi	to 21 CFR 176.170 and 21 CFR		Physical hazards	Not classified.			
176.180 for use in food.	paper and paperboard which contacts		Health hazards	Skin corrosion/irritation		Category 1	
FDA: All Ingredien	ats in this product are authorized in			Serious eye damage/eye irr	itation	Category 1	
27 CFR 176.210.			Environmental hazards	Not classified			
This product has n	tot been evaluated for Kosher approval.		OSHA defined hazards	Not classified.			
	not been evaluated for Halal approval.		Label elements				
N/A	or been evaluated for trainin approval,			$\wedge$			
				43			
None				$\sim$			
le.			Signal word	Danger			
			Hazard statement	Causes severe skin burns a	ind eye damage.	Causes serious eye damage.	
,			Precautionary statement				
			Prevention	Do not breathe mist or vapo clothing/eye protection/face		nly after handling. Wear protective	e gloves/protective
	1 0 0 X		Response	contaminated clothing. Rins keep comfortable for breath	e skin with water ing. if in eyes: Ri resent and easy	romiting. If on skin (or hair): Take /shower. If inhaled: Remove pers nse cautiously with water for seve to do. Continue rinsing. Immediat refore reuse.	on to fresh air and Nai minules
			Storage	Store locked up.			
			Disposal	Dispose of contents/contain	ter in accordance	with local/regional/national/intern	ational regulations.
			Hazard(s) not otherwise classified (HNOC)	None known.			
Page 6 of 9	ChemTreat FO186		Supplemental information	20% of the mixture consists consists of component(s) of		of unknown acute oral loxicity. 8 Inhalation toxicity.	0% of the mixture
			3. Composition/informatic	on on ingredients			
			Mixtures				
			Chemical name	Common name and sy	ynonyms	CAS number	%
			SODIUM HYDROXIDE (NA{OH	i))		1310-73-2	20
			Other components below report				80
			*Designates that a specific chemic	cal identity and/or percentage (	of composition ha	as been withheid as a trade secre	t.
			Material name: SODRIM HYDROXID	E 20% MEM 1.MAY			505.05
			591790 Version # DS Revision da		38-2017		1/8

US. OSHA Table Z-1 Limits R Components	or Air Contaminants (29 CFR 1910.10 Type	Value Value
SODIUM HYDROXIDE (NA(OH)) (CAS 1310-73-2)	PEL	2 mg/m3
US. ACGIH Threshold Limit \ Components	/alues Type	Value
SODIUM HYDROXIDE (NA(OH)) (CAS 1310-73-2)	Celling	2 mg/m3
US. NIOSH: Pocket Guide to Components	Chemical Hazards Type	Value
SODIUM HYDROXIDE (NA(OH)) (CAS 1310-73-2)	Ceiling	2 mg/m3
Biological limit values	No biological exposure limits noted for	r the ingredient(s).
Appropriate engineering controls	Good general vertilation (typically 10 should be matched to conditions. If ac or other engineering controls to maint exposure limits have not been establi	air changes per hour) should be used. Ventilation rates opficable, use process enclosures. local exhaust ventilation, air aitkorne kvels below recommenced exposure fimite. If shed, maintain airborne levels to an acceptable kwel. Eye r must be available when handling this product.
The following are recommenda Hazard Assessment of the wor		ent (PPE). The employer/user of this product must parform a 29 CFR 1910.132 to determine the appropriate PPE for use .
Skin protection		
Nand protection	Wear appropriate chemical resistant g supplier.	gloves. Suitable gloves can be recommended by the glove
Other	Wear appropriate chemical resistant of	clothing.
Respiratory protection	In case of insufficient ventilation, wear	r suitable respiratory equipment.
Thermal hazards	Wear appropriate thermal protective of	lothing, when necessary.
Seneral hygiene considerations		e measures, such as washing after handling the material toking. Routinely wash work clothing and protective
9. Physical and chemical p	roperties	
Appearance		
Physical state	Liquid.	
Form	Liquid.	
Color	CLEAR TO HAZY WHITE	
Ddor	ODORLESS	
Odor threshold	Not available	
рН	14	
Melting point/freezing point	-25 "F (-31 67 °C)	
nitial boiling point and boiling range	675.68 °F (357.6 °C) estimated	
Flash point	Not available	
Evaporation rate	Not available	
Flammability (solid, gas)	Not applicable.	
Upper/lower flammability or expl	osive limits	
Flammability limit - lower	Not available.	
(%)		

	symptoms may be delayed.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.
5. Fire-fighting measures	
Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2)
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	During fire. gases hazardous to health may be formed.
Special protective equipment and precautions for firelighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	Move containers from fire area if you can do so without risk.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	No unusual fire or explosion hazards noted.
6. Accidental release meas	sures
Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spälsleak. Wear appropriate protective equipment and lothing during clean-up. Do not toreathe mist or vapor Do not touch damaged containers or spiller material unless wearing appropriate protective clothing. Ensure adequate verifiation. Local authorities should be advised if significant spillages cannot be contained. For personal problemon, see accions 6 of the SUS.
Methods and materials for containment and cleaning up	Large Splife: Stop the flow of material, if this is without risk. Dike the splifed material, where this is possible. Absorb in vermiculite, dry send or earth and place into containers. Following product recovery, fluch area with water.
	Smail Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.
	Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. For waste disposal, see section 13 of the SDS.
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.
7. Handling and storage	
Precautions for sate handling	Do not breathe mist or vapor. Do not get in eyes, on skin, or on clothing, Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities	Store locked up. Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS). Store away from incompatible materials (see Section 10 of the SDS).

Explosive limit - lower (%)	Not available	US. National Toxicology Pre Not listed.	ogram (NTP	Report on Carcinogens	
Explosive limit - upper (%)	Not available	Reproductive toxicity	This produ	ct is not expected to cause reproductive	ar daugionregetal offenia
Vapor pressure	Not available.	Specific target organ toxicity -	Not classif		ur developmentas enecas.
Vapor density Relative density	Not available Not available	single exposure	NOT GIDSSI	lea	
Solubility(ies)		Specific target organ toxicity - repeated exposure	Not classi	īeć.	
Solubility (water)	Not available	Aspiration hazard	Not an ast	Hation hazard.	
Partition coefficient (n-octanol/water)	Not available.	Chronic effects		inhalation may be harmful.	
Auto-ignition temperature	Not available.	12. Ecological information	n		
Decomposition temperature	Not available	Ecotoxicity	The produ	ct is not classified as environmentally ha	zardous. However, this does not exclude
Viscosity	Not available.		possibility		amful or damaging effect on the environi
Other information		Components		Species	Test Results
Density	10 12 lbs/gal	SODIUM HYDROXIDE (NA(	DH)) (CAS 13	310-73-2)	
Explosive properties	Not explosive.	Aquatic			
Oxidizing properties	Not exidizing.	Crustacea	EC50	Water flea (Ceriodaphnia cubia)	34 59 - 47.13 mg/l. 48 hours
Percent volatile	80 % estimated	Fish	LC50	Western mosquitofish (Gambusia a	ffinis) 125 mg/l 96 hours
Specific gravity	1.21	Persistence and degradability	Ne esta is	available on the degradability of this pro	duct.
10. Stability and reactivity		Bioaccumulative potential	No data ar		
Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.	Mobility in soll	No data av	vailable.	
Chemical stability	Material is stable under normal conditions.	Other adverse effects			e depletion, photochemical ozone creatio
Possibility of hazardous	Hazardous polymerization does not occur.		potential.	andoonne disruption, giobal warming poti	ential) are expected from this component
reactions		13. Disposal consideratio	ns		
Conditions to avoid	Contact with incompatible materials.	Disposal instructions			at licensed waste disposal site. Dispose
ncompatible materials	Strong acids.			ontainer in accordance with local/regiona	
Hazardous decomposition products	No hazardous decomposition products are known	Local disposal regulations Hazardous waste code	The waste		ns. between the user, the producer and the v
11. Toxicological informat	ion	Waste from residues / unused	disposal e		nply containers or liners may retain some
Intormation on likely routes of e	sposure	products	product re	sidues. This material and its container m	ust be disposed of in a safe manner (see
Inhalation	May cause irritation to the respiratory system. Prolonged inhalation may be harmful.	,		nstructions).	
Skin contact	Causes severe skin burns.	Contaminated packaging			ue, follow label warnings even after conta oproved waste handling site for recycling
Eye contact	Causes serious eye camage.		cisposal.	shipty containers should be taken to an a	http://www.waste.ce.org/and.ane.ior.sec/cend
Ingestion	Causes digestive tract burns.	14. Transport information			
Symptoms related to the	Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may	,			
physical, chemical and	Include stinging, tearing, redness, swelling, and blurred vision. Permahent eye damage including	DOT UN number	UN1824		
oxicological characteristics	blindness could result	UN proper shipping name		HYDROXIDE SOLUTION	
Information on toxicological effe	ects	Transport hazard class(es)	CODIDINI		
Acute toxicity	Not known.	Class	8		
Skin corrosion/irritation	Causes severe skin burns and eye damage.	Subsidiary risk			
Serious eye damage/eye irritation	Causes serious eye damage.			ty instructions. SDS and emergency proc	bedures before handling.
Respiratory or skin sensitization		ERG number Transport information on paci	154 kaoine may h	e rifferent from that listeri. Tragecondatio	n information on packaging may be differ
Respiratory sensitization	Not a respiratory sensitizer.	from that listed.	reeding mady r	e energi nen machinen ranspotatio	in a new work of providing well be under
Skin sensitization	This product is not expected to cause skin sensitization.	IATA			
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.	UN number UN proper shipping name	UN1824 SOCIUM F	HYDROXIDE SOLUTION	
Carcinogenicity	Not classifiable as to carcinogenicity to humans,	Transport hazard class(es)			
IARC Monographs. Overall I	Evaluation of Carcinogenicity	Class	8		
Not listed.		Subsidiary risk Packing group	-		
	d Substances (29 CFR 1910.1001-1052)	Environmental hazards	Na.		
Not regulated.		ERG Code	154		
Material name: SODIUM HYDROXIDI	E 20% MEM 1-WAY Sus us	Material name: SODRIM HYDROXID	0E 20% MEM 1	-WAY	
	te: 02-05-2019 Issue date: 03-08-2017 4 / 8	591790 Version # D5 Revision da			

Special precautions for user Read safely instructions, SDS and emergency procedures before handling. IMDG UN number UN proper shipping name Transport hazard class(es) UN1824 SODIUM HYDROXIDE SOLUTION (SODIUM HYDROXIDE (NA(OH))) 8 Class Subsidiary risk Packing group Environmental hazards В Marine pollutant Nc. EmS F-A, S-B Special precautions for user Read salely instructions, SDS and emergency procedures before handling. DOT 150 30 COBBOSIVE

IATA; IMDG

15. Regulatory information US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D) Not regulated. CERCLA Hazardous Substance List (40 CFR 302.4) SODIUM HYDROXIDE (NA(OH)) (CAS 1310-73-2) SARA 304 Emergency release notification Listed. Not regulated. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052) Not regulated. Superfund Amendments and Reauthorization Act of 1986 (SARA) SARA 302 Extremely hazardous substance Not listed. SARA 311/312 Hazardous Yes chemical Classified hazard Skin categories Serie Skin corrosion or irritation Serious eye damage or eye irritation SARA 313 (TRI reporting) Not regulated.

Other federal regulations Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List Not regulated. Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130) Not regulated. Sale Drinking Water Act Not regulated. (SDWA) US state regulations California Proposition 65 INDITIE - ropposition as California Sate Drinking Water and Toxic Enforcement Act of 2016 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins. For more information go to www.PSOWernings.ca.gov. US, California, Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a) SODIUM HYDROXIDE (NA(OH)) (CAS 1310-73-2) International Inventories Country(s) or region Australia Inventory name Australian Inventory of Chemical Substances (AICS) On inventory (yes/no)\* Yes Domestic Substances List (DSL) Canada Yes Canada Non-Domestic Substances List (NDSL) No Yes 

China	Inventory of Existing Chemical Substances in China (IECSC)	YBS
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Котеа	Existing Chemicats List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine inventory of Chemicals and Chemical Substances (PICCS)	Yes
Taiwan	Taiwan Toxic Chemical Substances (TCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes
	nents of this product comply with the inventory requirements administered by the governing country is components of the product are not listed or exempt from using on the inventory administered by the	
16. Other information, inc	luding date of preparation or last revision	
ssue date	03-08-2017	
Revision date	02-05-2019	
Version #	05	

HMIS® ratings	Heatth: 3 Flammability: O Physical hazatd: 0
NFPA ratings	Health 3 Flammability: 0 Instability: 1
Disclaimer	While Brenntag believes the information contained perein to be accurate. Brenntag makes no representation or variantly, express or implied, regarding, and assumes no lability for the accuracy or completeness of the Information. The Buyer assumes all responsibility for handling, using and/or reselling the Product in accuracing with applicable federal state, and local taw. This SDS shall not In any way limit or preclude the operation and effect of any of the provisions of Brenntag's ferms and occidions of sele.

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Hazard(s) lösntification: Hazard statement Hazards) cientification: Response Hazards) cientification: Response Hazards) cientification: Supplemental Information Hazards) bientification: Supplemental Information Exposure controls/personal protection: Eyevatece Database controls/personal protection: DPE Symbols Toxiccolgical Information. Actor toxisity Toxiccolgical Information: Skin contact





ChemTreat PB8045

# SAFETY DATA SHEET

Section 1. Chemical Product and Company Identification

Product Name: Product Use: Supplier's Name: Emergency Telephone Number: Address (Corporate Headquarters): Telephone Number for Information: Date of SDS: Revision Date: Revision Number: ChemTreat PB8045 Biological Wastewater Treatment Aid ChemTreat, Inc. (800)424-9300 (Toll Free) 5640 Cox Road Gien Allen, VA 23060 (800)484-4579 July 9, 2019 July 9, 2019 19070901AN

#### Section 2. Hazard(s) Identification

WARNING

GHS Classification(s): Hazard Statement(s):

Signal Word:

Acute Toxicity Dermal – Category 5 Acute Toxicity Oral – Category 4 Hazardous to the aquatic environment Acute – Category 3

> P280 Wear protective gloves/protective clothing/eye protection/face protection.

P301 + P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell P302 + P352 IF ON SKIN: Wash with plenty of soap and water. P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

H302 Harmful if swallowed. H313 May be harmful in contact with skin. H402 Harmful to aquatic life.

None.

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Precautionary Statement(s):

Prevention:

Response:

Storage:

19070901AN 07/09/1

Material name: SODRM HYDROXIDE 20% MEM 1-WAY S91790 - Version #-DS - Revision date: 02-05-2019 - Issue date: 03-08-2017

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Disposal: P501 Dispo with applica international System of Classification Used: Classification under

P501 Dispose of contents and container in accordance with applicable local, regional, national, and/or international regulations.

System of Classification Used:

Classification under 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

Hazards Not Otherwise Classified:

#### Section 3. Composition/Hazardous Ingredients

None.

a

#### Section 4. First Aid Measures

Inhalation:	Call a POISON CENTER or doctor/physician if you feel unwell.
Eyes:	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice/attention.
Skin:	Wash with plenty of soap and water. Call a poison center or doctor/physician if you feel unwell.
Ingestion:	DO NOT INDUCE VOMITING. Rinse mouth. Call a POISON CENTER or doctor/physician.
Most Important Symptoms:	N/D
Indication of Immediate Medical Attention and Special Treatment Needed, If Necessary:	N/A



### Section 5. Fire Fighting Measures

Flammability of the Product:	Not flammable.
Suitable Extinguishing Media:	Use extinguishing media suitable to surrounding fire.
Specific Hazards Arising from the Chemical:	None known.
Protective Equipment:	If product is involved in a fire, wear full protective clothing including a positive-pressure, NIOSH approved, self-contained breathing apparatus.
Section 6. Accidental Re	lease Measures
Personal Precautions:	Use appropriate Personal Protective Equipment (PPE).
Environmental Precautions:	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains, and sewers.
Methods for Cleaning up:	Contain and/or absorb spill with inert material then place in suitable container.
Other Statements:	None.
Section 7. Handling and	Storage
Handling:	Wear appropriate Personal Protective Equipment (PPE) when handling this product. Do not get in eyes, or on skin and clothing. Wash thoroughly after handling. Do not ingest. Avoid breathing vapors, mist or dust.
Storage:	Store away from incompatible materials (see Section 10). Store at ambient temperatures. Keep container securely closed when not in use. Label precautions also apply to empty container. Recondition or dispose of empty containers in accordance with government regulations. For Industrial use only. Store above Freeze Point.





### Section 8. Exposure Controls/Personal Protection

Component	Source	Exposure Limits
Ammonium sulfate	N/E	N/E
Urea	N/E	N/E
Ammonia polyphosphate	N/E	N/E
Ammonium nitrate	N/E	N/E
Personal Protection		
Personal Protection Eyes:	Safety	glasses are recommended if risk of eye contact
Personal Protection Eyes: Skin:		v glasses are recommended if risk of eye contact appropriate chemical resistant gloves.

#### Section 9. Physical and Chemical Properties

Physical State and Appearance:	Liquid, Light Green, Hazy
Specific Gravity:	1.280 @ 20°C
pH:	6.0 @ 20°C, 100.0%
Freezing Point:	<-13°F
Flash Point:	N/A
Odor:	Mild
Melting Point:	N/D
Initial Boiling Point and Boiling Range:	N/D
Solubility in Water:	N/D
Evaporation Rate:	N/D
Vapor Density:	N/D
Molecular Weight:	N/D
Viscosity:	<100 CPS @ 20°C
Flammability (solid, gas):	N/D
Flammable Limits:	N/A
Autoignition Temperature:	N/D
Density:	10.68 LB/GA
Vapor Pressure:	N/D
% VOC:	N/D

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# Odor Threshold n-octanol Partition Coefficient Decomposition Temperature N/D N/D N/D

# Section 10. Stability and Reactivity

Chemical Stability:	Stable at normal temperatures and pressures.
Incompatibility with Various Substances:	Brass, Zinc, Aluminum/aluminum alloys, Copper/copper alloys.
Hazardous Decomposition Products:	Ammonia.
Possibility of Hazardous Reactions:	None known.
Reactivity:	N/D
Conditions To Avoid:	N/D

#### Section 11. Toxicological Information

Chemical Name	Exp	osure	Type of Effect	Concentration	Species
ChemTreat PB8045	N/D	1	N/D	N/D	N/D
Carcinogenicity Category					
Component		Source	Code	Brief Description	
Ammonium sulfate		N/E	N/E	N/E	
Urea		N/E	N/E	N/E	
Ammonia polyphosphate		N/E	N/E	N/E	
Ammonium nitrate		N/E	N/E	N/E	
Likely Routes of Exposure:	N/D				
Symptoms					
Inhalation:		N/D			
Eye Contact:		N/D			
Skin Contact:		N/D			

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ChemTreat PB8045



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ChemTreat PB8045



#### Section 13. Disposal Considerations

Dispose of in accordance with local, state and federal regulations.

#### Section 14. Transport Information

Controlling Regulation	UN/NA#:	Proper Shipping Name:	Technical Name:	Hazard Class:	Packing Group:
DOT	N/A	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	N/A	N/A
SCT	N/A	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	N/A	N/A
lote:		N/A			

#### Section 15. Regulatory Information

Invon	tory 9	Statu	e

inventory otati	15	
	Jnited States (TSCA): Canada (DSL/NDSL):	All ingredients listed or exempt. All ingredients listed or exempt.
Federal Regula	tions	
SARA T	itle III Rules	
	Sections 311/312 Hazard Classes	
	Fire Hazard: Reactive Hazard: Release of Pressure: Acute Health Hazard: Chronic Health Hazard:	No No No Yes No
c	Other Sections	

	Section 313	Section 302 EHS	
Component	Toxic Chemical	TPQ	CERCLA RQ
Ammonium sulfate	N/A	N/A	N/A
Urea	N/A	N/A	N/A
Ammonia polyphosphate	N/A	N/A	N/A

Ingestion:	N/D
Skin Corrosion/Irritation:	N/D
Serious Eye Damage/Eye Irritation:	N/D
Sensitization:	N/D
Germ Cell Mutagenicity:	N/D
Reproductive/Developmental Toxicity:	N/D
Specific Target Organ Toxicity	
Single Exposure:	N/D
Repeated Exposure:	N/D
Aspiration Hazard:	N/D
Comments:	None.

#### Section 12. Ecological Information

Species		Duration	Type of Effect	Test Results	
N/D		N/D	N/D	N/D	
Persistence and Biodegradability:	N/D				
Bioaccumulative Potential:	N/D				
Mobility In Soil:	N/D				
Other Adverse Effects:	N/D				
Comments:	None.				



State Regulations

Component Comments:

California Proposition 65:

Component

onium sulfate Arranos. Jrea Ammonia polyphosphate Ammonium nitrate Ammoni **Compliance Information** NSF:

Special Regulations

Food Regulations: KOSHER:

Section 16. Other Information

Health: Flammability: Physical Hazard: PPE:

Halal:

FIFRA:

Other:

HMIS Hazard Rating

Comments:



CERCLA RQ

302 EHS Section TPQ

Section 313 Toxic Chemical

This product has not been evaluated for Kosher approval.

This product has not been evaluated for Halal approval.

None

States

None known.

N/A N/A

N/A

None

None





Notes:

The PPE rating depends on circumstances of use. See Section 8 for recommended PPE. The Hazardous Material Information System (HMIS) is a voluntary, subjective apha-numeric symbolic system for recommending hazard risk and personal protection equipment information. It is a subjective rating system based on the evaluator's understanding of the chemical associated risks. The end-user must determine if the code is appropriate for their use their use.

# Abbreviations

Abbreviation	Definition
<	Less Than
>	Greater Than
ACGIH	American Conference of Governmental Industrial Hygienists
EHS	Environmental Health and Safety Dept
N/A	Not Applicable
N/D	Not Determined
N/E	Not Established
OSHA	Occupational Health and Safety Dept
PEL	Personal Exposure Limit
STEL	Short Term Exposure Limit
TLV	Threshold Limit Value
TWA	Time Weight Average
UNK	Unknown
Prepared by:	Product Compliance Department; ProductCompliance@chemtreat.com

Revision Date:

July 9, 2019

# Disclaimer

rect as of the dat nd faith and h ed to be n") are pre same will make nature whatsoer a particular pure their own determination as to its ver resulting from the use or relia uitability for their purposes ice upon information. No rep reat, Inc. be responsible for damages of any pressed or implied, of merchantability, fitness for will Cl

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**ChemTreat** 

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ChemTreat PB8045

# SAFETY DATA SHEET

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#### Section 1. Chemical Product and Company Identification

Product Name:	ChemTreat P873L
Product Use:	Water Clarification Agent
Supplier's Name:	ChemTreat, Inc.
Emergency Telephone Number: Address (Corporate Headquarters):	(800)424-9300 (Toll Free) 5640 Cox Road Glen Allen, VA 23060
Telephone Number for Information:	(800)648–4579
Date of SDS:	February 7, 2019
Revision Date:	February 7, 2019
Revision Number:	19020701AN

#### Section 2. Hazard(s) Identification

Signal Word:	None	
GHS Classification(s):	Non-Hazardous Substance	
Hazard Statement(s):	Non-Hazardous Substance	
Precautionary Statement(s):	No significant health risks are expected from exposures under normal conditions of use.	
Prevention:	None.	
Response:	None.	
Storage:	None.	
Disposal:	None.	
System of Classification Used:	Classification under 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).	
Hazards Not Otherwise Classified:	None.	

# **ChemTreat**

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ChemTreat PB8045

#### Section 3. Composition/Hazardous Ingredients

Component	CAS Registry #	Wt.%
Components not listed are either non hazardous or in concentration	of N/A	N/A
less than 1%		
Comments If chemical is withheld, this	If chemical identity and/or exact percentage of composition has been withheld, this information is considered to be a trade secret.	

#### Section 4. First Aid Measures

Inhalation:	Call a POISON CENTER or doctor/physician if you feel unwell.
Eyes:	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice/attention.
Skin:	Call a poison center or doctor/physician if you feel unwell.
Ingestion:	Rinse mouth. Call a poison center or doctor/physician if you feel unwell.
Most Important Symptoms:	N/D
Indication of Immediate Medical Attention and Special Treatment Needed, If Necessary:	N/A

#### Section 5. Fire Fighting Measures

Flammability of the Product: Not flammable.

Suitable Extinguishing Media:

Use extinguishing media suitable to surrounding fire. Use water spray or fog. Firefighting foam Carbon Dixide Dry Chemical





Specific Hazards Arising from the Chemical:	Use water spray to keep containers cool. Carbon oxides, nitrogen oxides, hydrogen chloride, hydrogen cyanide may be product in the event of combustion in an oxygen deficient atmosphere.
Protective Equipment:	If product is involved in a fire, wear full protective clothing including a positive-pressure, NIOSH approved, self-contained breathing apparatus.

#### Section 6. Accidental Release Measures

Personal Precautions:	Use appropriate Personal Protective Equipment (PPE).
Environmental Precautions:	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains, and sewers.
Methods for Cleaning up:	Contain and/or absorb spill with inert material then place in suitable container. Material is very slippery if spilled.
Other Statements:	None.

#### Section 7. Handling and Storage

Handling:	Wear appropriate Personal Protective Equipment (PPE) when handling this product. Do not get in eyes, or on skin and clothing. Wash thoroughly after handling. Do not ingest. Avoid breathing vapors, mist or dust.
Storage:	Store away from incompatible materials (see Section 10). Store at ambient temperatures. Keep container securely closed when not in use. Label precautions also apply to empty container. Recondition or dispose of empty containers in accordance with government regulations. For Industrial use only. Do not freeze. Store above Freeze Point. If freezes, then mechanical mixing is required.





ChemTreat P873L

#### Section 8. Exposure Controls/Personal Protection

Component	Source	Exposure Limits	
Components not listed are either non hazardous or in concentration of less than 1%	N/E	N/E	
		uate ventilation. The use of local ventilation is ontrol emission near the source.	
Personal Protection			
Eyes:	Safety glasses are recommended if risk of eye contact.		
Skin:	Wear butyl rubber or neoprene gloves. Wash them after each use and replace as necessary. If conditions warrant, wear protective clothing such as boots, aprons, and coveralls to prevent skin contact.		
Respiratory:	gas dual ca	ccurs, use NIOSH approved organic vapor/acid Intridge respirator with a dust/mist prefilter in e with 29 CFR 1910.134.	

#### Section 9. Physical and Chemical Properties

Physical State and Appearance: Specific Gravity: pH: Freezing Point: Flash Point: Odor: Melting Point: Initial Boiling Point and Boiling Range: Solubility in Water: Evaporation Rate: Vapor Density: Molecular Weight: Viscosity: Flammability (solid cas):	Liquid, Light Straw, Clear 1,042 @ 20°C 5.9 @ 20°C, 100.0% 30°F N/D Mild N/A 212°F Soluble N/D Similar to water N/D N/A N/A N/D
Flammability (solid, gas):	N/D
Flammable Limits:	N/A
Autoignition Temperature:	N/A
Density:	8.69 LB/GA
Vapor Pressure:	Similar to water

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ChemTreat P873L





% VOC: Odor Threshold n-octanol Partition Coefficient Decomposition Temperature

#### Section 10. Stability and Reactivity

Chemical Stability:	Stable at normal temperatures and pressures.
Incompatibility with Various Substances:	Strong oxidizers, Strong bases.
Hazardous Decomposition Products:	Oxides of carbon, Oxides of nitrogen, Hydrogen chloride, Hydrogen cyanide.
Possibility of Hazardous Reactions:	None known.
Reactivity:	N/D
Conditions To Avoid:	N/D

0 N/D N/D N/D

### Section 11. Toxicological Information

#### Acute Toxicity

Chemical Name	Exposure	T	ype of Effect	Concentration	Species
ChemTreat P873L	Oral	L	D50	>5000 MG/KG	Rat
	Dermal	L	D50	>5000 MG/KG	Rat
Carcinogenicity Category					
Component	Sour	rce	Code	Brief Description	
Components not listed are either non hazardous or in	N/E		N/E	N/E	
concentration of less than 1%					
Likely Routes of Exposure: N/ Symptoms	0				
Inhalation:	N/D				
Eye Contact:	N/D				
Skin Contact:	N/D				
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Ingestion:		N/D
Skin Corrosion/Irritation:	N/D	
Serious Eye Damage/Eye Irritation:	N/D	
Sensitization:	N/D	
Germ Cell Mutagenicity:	N/D	
Reproductive/Developmental Toxicity:	N/D	
Specific Target Organ Toxicity		
Single Exposure:		N/D
Repeated Exposure:		N/D
Aspiration Hazard:	N/D	
Comments:	None.	

#### Section 12. Ecological Information

Ecotoxicity				
Species	Duration	Type of Effect	Test Results	
Fathead Minnow		96h	LC50	2.253 mg/l
Ceriodaphnia dubia		48h	LC50	0.473 mg/l
Persistence and Biodegradability:	N/D			
Bioaccumulative Potential:	N/D			
Mobility In Soil:	N/D			
Other Adverse Effects:	N/D			
Comments:	charge neut migrate with of uneconor Aquatic toxi	Water clarification polymers function by multipoint adsorption and charge neutralization with suspended solids. Polymers inherently migrate with solids in the separation process and with the exception of uneconomic overdose do not remain in the clarified waters. Aquatic toxicity determinations in test method protocol waters without ourspields only europerimeted to be built by empared to be		

without suspended solids overestimate the toxicity compared to natural receiving waters.



Controlli Regulatio

IMDG

TDG

Note:

Inventory Status

Section 13. Disposal Considerations

Section 14. Transport Information

Section 15. Regulatory Information

United States (TSCA): Canada (DSL/NDSL):

UN/NA#

Dispose of in accordance with local, state and federal regulations. Not a RCRA-regulated hazardous waste when disposed in the original product form.

> Proper Shipping Name: COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID WATER TREATMENT, LIQUID

N/A



lazard Cla

All ingredients listed. All ingredients listed. Group





Federal Regulations

SARA Title III Rules	

 Sections 311/312 Hazard Classes
 No

 Fire Hazard:
 No

 Reactive Hazard:
 No

 Release of Pressure:
 No

 Actuet Health Hazard:
 No

 Chronic Health Hazard:
 No

 Other Sections
 No

 Components not listed are either non hazardous or in
 NA

 NA
 NA

 Comments:
 None.

 State Regulations

California Proposition 65: None known.

Special Regulations

Component	States
Components not listed are either non hazardous or in	None.
concentration of less than 1%	

Compliance Information NSF:

#### Certified to NSF/ANSI Standard 60 Maximum use rate for potable water – 50 mg/L This product ships as NSF from: Ashland, VA Eldridge, IA Nederland, TX Facility #2 USA Facility #3 USA

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Technical Na

ChemTreat P873L

SD:

**ChemTreat** 

Food Regulations:

FDA: Complies with 21 CFR 176.170 and 21 CFR 176.180 for use in paper and paperboard which contacts food. FDA: GRAS, 21 CFR 570.30 – Generally Recognized as Safe by experts in accordance with the Federal Food, Drug and Cosmetic Act (Section 201s) for their intended use as flocculants and dewatering aids for food processing waste destined for recycling as animal feed, and is subject to the limitations therein. This product has not been evaluated for Kosher approval.

This product has not been evaluated for Halal approval. N/A None

KOSHER:

Halal:

FIFRA:

Other:

Comments:

### Section 16. Other Information

None

HMIS Hazard Rating

Health: Flammability: Physical Hazard: PPE:

Notes:

The PPE rating depends on circumstances of use. See Section 8 for recommended PPE. The Hazardous Material Information System (HMIS) is a voluntary, subjective alpha-numeric symbolic system for recommending hazard risk and personal protection equipment information. It is a subjective rating system based on the evaluator's understanding of the chemical associated risks. The end-user must determine if the code is appropriate for their use.

#### Abbreviations

-	
Abbreviation	Definition
<	Less Than
>	Greater Than
ACGIH	American Conference of Governmental Industrial Hygienists
EHS	Environmental Health and Safety Dept
N/A	Not Applicable
N/D	Not Determined
N/E	Not Established



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ChemTreat P873L

OSHA	Occupational Health and Safety Dept	
PEL	Personal Exposure Limit	
STEL	Short Term Exposure Limit	
TLV	Threshold Limit Value	
TWA	Time Weight Average	
UNK	Unknown	
Prepared by:	Product Compliance Department; ProductCompliance@chemtreat.com	
Revision Date:	February 7, 2019	

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#### Disclaimer

Although the information and recommendations set forth herein (hereinsfler "information") are presented in good faith and believed to be correct as of the date hereor(. DemiTreat, Inc. makes no representations as to the completeness or accuracy thereor(. Information is supplied upon the condition that the persons receiving same will make there own determination as to its suitability for their purposes prior to use. In no event will ChemiTreat, Inc. the seponsible for damages of any nature whatsever resulting from the use or reliance upon information. No representation or warranties, either expressed or implied, of mechantability, fitness for a particular purpose, or of any other nature are made herement with respect to information or the product to with information refers.









# SAFETY DATA SHEET

Section 1. Chemical Product and Company Identification

Product Name:
Product Use:
Supplier's Name:
Emergency Telephone Number:
Address (Corporate Headquarters):
Telephone Number for Information:
Date of SDS:
Revision Date:
Revision Number:

ChemTreat P880L Water Clarification Agent ChemTreat, Inc. (800)424–9300 (Toll Free) 5640 Cox Road Gien Allen, VA 23060 (800)648–4579 October 4, 2019 October 4, 2019 19100401AN

#### Section 2. Hazard(s) Identification

Signal Word:	None
GHS Classification(s):	Non-Hazardous Substance
Hazard Statement(s):	Non-Hazardous Substance
Precautionary Statement(s):	No significant health risks are expected from exposures under normal conditions of use.
Prevention:	None.
Response:	None.
Storage:	None.
Disposal:	None.
System of Classification Used:	Classification under 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).
Hazards Not Otherwise Classified:	None.

#### Section 3. Composition/Hazardous Ingredients

Id, this information is consider POISON CENTER or doctor/p cautiously with water for seve , if present and easy to do. Cr on persists, get medical advice	physician if you feel unwell. ral minutes. Remove contact ontinue rinsing. If eye //attention.
Id, this information is consider POISON CENTER or doctor/p cautiously with water for seve , if present and easy to do. Cr on persists, get medical advice	red to be a trade secret. physician if you feel unwell. ral minutes. Remove contact nditure rinsing. If eye //attention.
cautiously with water for seve s, if present and easy to do. Co on persists, get medical advice	ral minutes. Remove contact ontinue rinsing. If eye /attention.
cautiously with water for seve s, if present and easy to do. Co on persists, get medical advice	ral minutes. Remove contact ontinue rinsing. If eye /attention.
s, if present and easy to do. Co on persists, get medical advice	ontinue rinsing. If eye a/attention.
poison center or doctor/physic	an if you fool unwoll
Call a poison center or doctor/physician if you feel unwell.	
Rinse mouth. Call a poison center or doctor/physician if you feel unwell.	
res	
	res

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Flammability of the Product:	Not flammable.
Suitable Extinguishing Media:	Use extinguishing media suitable to surrounding fire. Use water spray or fog. Dry Chemical Carbon Dioxide
Specific Hazards Arising from the Chemical:	None known.

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ChemTreat P880L





If product is involved in a fire, wear full protective clothing including a positive-pressure, NIOSH approved, self-contained breathing apparatus. Protective Equipment:

#### Section 6. Accidental Release Measures

Personal Precautions:	Use appropriate Personal Protective Equipment (PPE).
Environmental Precautions:	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains, and sewers.
Methods for Cleaning up:	Contain and/or absorb spill with inert material then place in suitable container. Material is very slippery if spilled.
Other Statements:	None.

#### Section 7. Handling and Storage

Handling:	Wear appropriate Personal Protective Equipment (PPE) when handling this product. Do not get in eyes, or on skin and clothing. Wash thoroughly after handling. Do not ingest. Avoid breathing vapors, mist or dust.
Storage:	Store away from incompatible materials (see Section 10). Store at ambient temperatures. Keep container securely closed when not in use. Label precautions also apply to empty container. Recondition or dispose of empty containers in accordance with government regulations. For Industrial use only. Protect from heat and sources of ignition. Do not freeze. Store above Freeze Point. If freezes, then mechanical mixing is required.

#### Section 8. Exposure Controls/Personal Protection

Exposure Limits		
Component	Source	Exposure Limits
Components not listed are either non hazardous or in	N/E	N/E
concentration of less than 1%		

**ChemTreat** 

Respiratory:

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ChemTreat P880L

Engineering Controls: Use only with adequate ventilation. The use of local ventilation is recommended to control emission near the source. Personal Protection Eyes: Skin:

Safety glasses are recommended if risk of eye contact.

Wear butyl rubber or neoprene gloves. Wash them after each use and replace as necessary. If conditions warrant, wear protective clothing such as boots, aprons, and coveralls to prevent skin contact.

If misting occurs, use NIOSH approved organic vapor/acid gas dual cartridge respirator with a dust/mist prefilter in accordance with 29 CFR 1910.134.

#### Section 9. Physical and Chemical Properties







Comments:



### Section 10. Stability and Reactivity

Chemical Stability:	Stable at normal temperatures and pressures.
Incompatibility with Various Substances:	None known.
Hazardous Decomposition Products:	Oxides of carbon, Oxides of nitrogen, Hydrogen chloride.
Possibility of Hazardous Reactions:	None known.
Reactivity:	N/D
Conditions To Avoid:	N/D

#### Section 11. Toxicological Information

Chemical Name	Exp	osure	Type of Effect	Concentration	Species
ChemTreat P880L	N/E	)	N/D	N/D	N/D
Carcinogenicity Category					
Component		Source	Code		
Components not listed are either non hazard concentration of less than 1%	lous or in	N/E	N/E	N/E	
Likely Routes of Exposure:	N/D				
Symptoms					
Inhalation:		N/D			
Eye Contact:		N/D			
		N/D			
Skin Contact:					
Skin Contact: Ingestion:		N/D			

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#### Serious Eye Damage/Eye Irritation: N/D Sensitization: N/D Germ Cell Mutagenicity: N/D Reproductive/Developmental Toxicity: N/D Specific Target Organ Toxicity Single Exposure: N/D Repeated Exposure: N/D Aspiration Hazard: N/D

#### Section 12. Ecological Information

None.

Ecotoxicity					
Species		Duration	Type of Effect	Test Results	
Ceriodaphnia dubia		48h	LC50	0.46 mg/l	
Fathead Minnow		96h	LC50	3.4 mg/l	
Persistence and Biodegradability:	N/D				
Bioaccumulative Potential:	mulating				
Mobility In Soil: N/D		N/D			
Other Adverse Effects:	N/D				
Comments:	charge neuti migrate with of uneconon Aquatic toxic without susp	Water clarification polymers function by multipoint adsorption and charge neutralization with suspended solids. Polymers inherently migrate with solids in the separation process and with the exception of uneconomic overdose do not remain in the clarified waters. Aquatic toxicity determinations in test method protocol waters without suspended solids overestimate the toxicity compared to natural receiving waters.			

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ChemTreat P880L
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#### Section 13. Disposal Considerations

Dispose of in accordance with local, state and federal regulations.

#### Section 14. Transport Information

Controlling Regulation	UN/NA#:	Proper Shipping Name:	Technical Name:	Hazard Class:	Packing Group:
DOT	N/A	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	N/A	N/A
IMDG	N/A	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	N/A	N/A
ICAO	N/A	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	N/A	N/A
TDG	N/A	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	N/A	N/A
Note:		N/A			

Note:

#### Section 15. Regulatory Information

Inventory Status		
United Sta Canada (D	tes (TSCA): SL/NDSL):	All ingredients listed. All ingredients listed.
Federal Regulations		
SARA Title III Rule	es	
Sections 3 Classes	11/312 Hazard	
	Fire Hazard: Reactive Hazard: Release of Pressure: Acute Health Hazard: Chronic Health Hazard:	No No No No

Che<u>mTreat</u>

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ChemTreat P880L

Other Sections

	Component		Section 313 Toxic Chemical	Section 302 EHS TPQ	CERCLA RQ
	Components not listed are either non hazardous or in concentration of less than 1%		N/A	N/A	N/A
	Comments:	Nor	ie.		
State Regulations					
California Pro	oposition 65:	None known.			
Special Regu	llations				
Compo			States		
	nents not listed are either non h ration of less than 1%	hazardous or in	None.		
ompliance Informa	ation				
NSF:	Certified to NSF/ Maximum use ra Facility #2 USA		NSI Standard 60 for potable water	– 50 mg/L	
Recognized a Federal Food for their inten for food proce feed, and is so		FDA: GRAS, 21 CI Recognized as Sat Federal Food, Drug for their intended u for food processing feed, and is subject	e by experts in ac g and Cosmetic Ac se as flocculants g waste destined fo	cordance with t ct (Section 201s and dewatering or recycling as a	i) aids
		This product has n	s not been evaluated for Kosher approval.		
Halal:		This product has n	ot been evaluated	for Halal appro	val.
FIFRA:		N/A			
Other:		None			
Comments:	None.				



HMIS Hazard Rating

Notes:

Section 16. Other Information

Health: Flammability: Physical Hazard: PPE:







# Disclaimer

ed in good faith and believed to be correct as of the date ation is supplied upon the condition that the persons rec will Chem Treat, Inc. be responsible for damages of any s, either expressed or implied, of merchantability, fitness luct to which information enter. tion") are pres cy thereof. Info set forth herein (here ons as to the complet itability for their purpos e upon information. No n as to its su ent will Ch nties, eithe nages of any tability, fitness for

#### Abbreviations

Abbreviation	Definition
<	Less Than
>	Greater Than
ACGIH	American Conference of Governmental Industrial Hygienists
EHS	Environmental Health and Safety Dept
N/A	Not Applicable
N/D	Not Determined
N/E	Not Established
OSHA	Occupational Health and Safety Dept
PEL	Personal Exposure Limit
STEL	Short Term Exposure Limit
TLV	Threshold Limit Value
TWA	Time Weight Average
UNK	Unknown

Prepared by:

**Revision Date:** 

Product Compliance Department; ProductCompliance@chemtreat.com October 4, 2019

The PPE rating depends on circumstances of use. See Section 8 for recommended PPE. The Hazardous Material Information System (HMIS) is a voluntary, subjective alpha-numeric symbolic system for recommending hazard risk and personal protection equipment information. It is a subjective rating system based on the evaluator's understanding of the chemical associated risks. The end-user must determine if the code is appropriate for their use.

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ChemTreat P880L

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# Section 3. Composition/Hazardous Ingredients

Component		CAS Registry #	Wt.%
Components not listed are either non hazardous less than 1%	or in concentration of	N/A	N/A
Comments	If chemical identit withheld, this info	y and/or exact percentage of com rmation is considered to be a trad	position has been e secret.

# Section 4. First Aid Measures

Inhalation:	Call a POISON CENTER or doctor/physician if you feel unwell.
Eyes:	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice/attention.
Skin:	Call a poison center or doctor/physician if you feel unwell.
Ingestion:	Rinse mouth. Call a poison center or doctor/physician if you feel unwell.
Most Important Symptoms:	N/D
Indication of Immediate Medical Attention and Special Treatment Needed, If Necessary:	N/A

#### Section 5. Fire Fighting Measures

Flammability of the Product:	Not flammable.
Suitable Extinguishing Media:	Use extinguishing media suitable to surrounding fire.
Specific Hazards Arising from the Chemical:	Use water spray to keep containers cool.
Protective Equipment:	If product is involved in a fire, wear full protective clothing including a positive-pressure, NIOSH approved, self-contained breathing apparatus.

Section 1. Chemical Product and Company Identification

**ChemTreat** 

Product Name:	ChemTreat P824L
Product Use:	Water Clarification Agent
Supplier's Name:	ChemTreat, Inc.
Emergency Telephone Number:	(800)424-9300 (Toll Free)
Address (Corporate Headquarters):	5640 Cox Road
	Glen Allen, VA 23060
Telephone Number for Information:	(800)648-4579
Date of SDS:	October 9, 2019
Revision Date:	October 9, 2019
Revision Number:	19100901AN

#### Section 2. Hazard(s) Identification

Signal Word:	None
GHS Classification(s):	Non-Hazardous Substance
Hazard Statement(s):	Non-Hazardous Substance
Precautionary Statement(s):	No significant health risks are expected from exposures under normal conditions of use.
Prevention:	None.
Response:	None.
Storage:	None.
Disposal:	None.
System of Classification Used:	Classification under 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).
Hazards Not Otherwise Classified:	None.



Personal Precautions: Environmental Precautions:

Methods for Cleaning up:

Section 7. Handling and Storage

omponents not listed are either non hazardous or in

Other Statements:

Handling:

Storage:

Exposure Limits

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centration of less than 1%

Engineering Controls:

Section 6. Accidental Release Measures

None

Section 8. Exposure Controls/Personal Protection

Source

N/E

Use appropriate Personal Protective Equipment (PPE).

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains, and sewers.

Contain and recover liquid when possible. Flush spill area with water spray. Material is very slippery if spilled.

Wear appropriate Personal Protective Equipment (PPE) when handling this product. Do not get in eyes, or on skin and clothing. Wash thoroughly after handling. Do not ingest. Avoid breathing vapors, mist or dust.

Store away from incompatible materials (see Section 10). Store at ambient temperatures. Keep container securely closed when not in use. Label precautions also apply to empty container. Recondition or dispose of empty containers in accordance with government regulations. For Industrial use only. Do not freeze. Store above Freeze Point. If freezes, then mechanical mixing is required.

Exposure Limits

Page 3 of 10

Use only with adequate ventilation. The use of local ventilation is recommended to control emission near the source.







Personal Protection

Eyes:

Skin:

Safety glasses are recommended if risk of eye contact.
--

Wear butyl rubber or neoprene gloves. Wash them after each use and replace as necessary. If conditions warrant, wear protective clothing such as boots, aprons, and coveralls to prevent skin contact.

If misting occurs, use NIOSH approved organic vapor/acid gas dual cartridge respirator with a dust/mist prefilter in accordance with 29 CFR 1910.134.

Respiratory:

#### Section 9. Physical and Chemical Properties

 Physical State and Appearance:
 Liqt

 Specific Gravity:
 1.0

 pht:
 6.8

 Freezing Point:
 32°

 Odor:
 Mili

 Metting Point:
 >21

 Odor:
 Mili

 Metting Point:
 NA

 Initial Boiling Point and Boiling Range:
 212

 Solubility in Water:
 Mis

 Evaporation Rate:
 Sim

 Wolecular Weight:
 N/D

 Flammability (solid, gas):
 N/D

 Flammability (solid, gas):
 N/D

 Patrosofty:
 8.7

 Vapor Pressure:
 Sim

 % VOC:
 0.1

 Odor Threshold
 N/D

 Decomposition Temperature
 N/D

 Decomposition Temperature
 N/D

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ChemTreat P824L





ChemTreat P824L

#### Section 10. Stability and Reactivity

Chemical Stability:	Stable at normal temperatures and pressures.
Incompatibility with Various Substances:	Strong oxidizers, Strong bases.
Hazardous Decomposition Products:	Carbon dioxide, Carbon monoxide, Oxides of nitrogen, Hydrogen chloride.
Possibility of Hazardous Reactions:	None known.
Reactivity:	N/D
Conditions To Avoid:	N/D

#### Section 11. Toxicological Information

#### Acute Toxicity

Chemical Name	Exp	osure	Type of Effect	Concentration	Species
ChemTreat P824L	Oral		LD50	>2000 MG/KG	Rat
Carcinogenicity Category					
Component		Source	Code	Brief Description	
Components not listed are either non hazardo concentration of less than 1%	us or in	N/E	N/E	N/E	
Likely Routes of Exposure:	N/D				
Symptoms					
Inhalation:		N/D			
Eye Contact:		N/D			
Skin Contact:		N/D			
Ingestion:		N/D			

# **ChemTreat**

Serious Eye Damage/Eye Irritation:	N/D	
Sensitization:	N/D	
Germ Cell Mutagenicity:	N/D	
Reproductive/Developmental Toxicity:	N/D	
Specific Target Organ Toxicity		
Single Exposure:		N/D
Repeated Exposure:		N/D
Aspiration Hazard:	N/D	
Comments:	None.	

#### Section 12. Ecological Information

Species		Duration	Type of Effect	Test Results
Fathead Minnow		96h	LC50	1.13 mg/l
Ceriodaphnia dubia		48h	LC50	0.374 mg/l
Persistence and Biodegradability:	N/D			
Bioaccumulative Potential:	N/D			
Mobility In Soil:	N/D			
Other Adverse Effects:	N/D			
Comments:	charge ne migrate wi of unecone Aquatic to without su	utralization with su th solids in the ser omic overdose do xicity determinatio	function by multipoin uspended solids. Pol paration process and not remain in the cla ns in test method pro- rerestimate the toxici	ymers inherently I with the exception arified waters. otocol waters

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						Sections	311/312 Hazard			
Dispose of in a	accordance wi	th local, state and federal re ardous waste when disposed	gulations.	form		Classes				
	egulateu haza	ardous waste when disposed	in the original product	ionn.			Fire Hazar Reactive H	lazard:		No No
Section 14	1. Transpo	ort Information					Acute Hea	Pressure: Ith Hazard:		No No
								ealth Hazard:		No
Controlling Regulation	UN/NA#:	Proper Shipping Name:	Technical Name:	Hazard Class:	Packing Group:	Other Sec	tions			
DOT	N/A	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	N/A	N/A	Co	mponent		Section 313 Toxic Chemical	Section 302 EHS TPQ CERCLA RQ
IMDG	N/A	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	N/A	N/A		mponents not listed a centration of less that	re either non hazardous or i n 1%		N/A N/A
ICAO	N/A	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	N/A	N/A	Co	mments:	Ν	lone.	
TDG	N/A	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	N/A	N/A	State Regulations				
Note:		N/A	•		_,,	California Propo	sition 65 <sup>.</sup>	None known.		
						Special Regulation				
Section 15	5. Regulat	ory Information				Component			States	
		,				Components	not listed are either n of less than 1%	on hazardous or in	None.	
nventory Stat	tus					Compliance Information				
	United State Canada (DSI	s (TSCA): L/NDSL):	All ingredier All ingredier			NSF:	1	Cortified to NSE	ANSI Standard 60	
		,	, iii iiigi oaloi			NSF:			ate for potable wate	
						Food Regulation	s:		CFR 570.30 - Ger	nerally
								Recognized as S Federal Food, D for their intended for food process	Safe by experts in a prug and Cosmetic A d use as flocculants	accordance with the Act (Section 201s) and dewatering aids for recycling as animal
						KOSHER:		This product has	s not been evaluate	d for Kosher approval.
						Halal:				d for Halal approval.
		Page	7 of 10	¢	hemTreat P824L		<b>1</b> ,	Page 8 of 1	0	ChemTreat I
	mTreat"	Page	7 of 10	·	hemTreat P824L		<u>t</u> .	Page 8 of 1	0	
			7 of 10	·	hemTreat P824L		<u>t</u> .	Page 8 of 1	0	ChemTreat P
Cher Fifra:		N/A	7 of 10	·	hemTreat P824L	Disclaimer		_		S S S
FIFRA: Other:		N/A None None.	7 of 10	c	sbs	Disclaimer	andations set forth here resentations as to the c n as to its suitability for se or reliance upon inf	n (freeinafter "Information") ar moleteness or accuracy there they parpose picto table in in	re presented in good faith an sol, information is supplied.	E beleved to be correct as of the date conduction that the parsons received on the condition that the parsons received to enclose that the condition of the date
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FIFRA: Other: Comments: Section 16 HMIS Hazard I HMIS Hazard I Notes: Abbreviations	5. Other In Rating Health: Flammability Physical Haz PPE: S S Definit Less T Greate Americ Enviror Not Ag Not De Not Es Cocup Person Stort T Three	N/A None None. None. formation formation y: zard: The PPE ra Section 8 fr The Hazars voluntars recomments information evaluator's The end-u their use. information evaluator's The end-u their use. information evaluator's inf	0 0 X sting depends on circum or recommended PPE. Jous Material Informatic Ubjective alpha-numer ding hazard risk and pe understanding of the ci ser must determine if th	Instances of use. See an System (HMIS) is ic symbolic system is system based on t remical associated	e sa for for fisks.	<b>Disclaimer</b>	andations set forth here resentations as to the c n as to its suitability for se or reliance upon inf	n (freeinafter "Information") ar moleteness or accuracy there they parpose picto table in in	re presented in good faith an soci, information is supplied.	E beleved to be correct as of the date con the condition that the persons received a rengeoid twice increasing of any
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Section 1. Chemical Product and Company Identification

Product Name:
Product Use:
Supplier's Name:
Emergency Telephone Number:
Address (Corporate Headquarters):
Telephone Number for Information: Date of SDS:
Revision Date:
Revision Number:

ChemTreat P893L Water Clarification Agent ChemTreat, Inc. (800)424–9300 (Toll Free) 5640 Cox Road Gien Allen, VA 23060 (800)648–4579 March 31, 2020 March 31, 2020 20033101AN

# Section 2. Hazard(s) Identification

Signal Word:	WARNING	
GHS Classification(s):	Skin corrosion/irritation – Category 2 Eye damage/irritation – Category 2a Corrosive to Metals – Category 1	
Hazard Statement(s):	H315 Causes skin irritation. H319 Causes serious eye irritation. H290 May be corrosive to metals.	
Precautionary Statement(s):		
Prevention:	P264 Wash thoroughly after handling. P280 Wear protective gloves/protective clothing/eye protection/face protection. P234 Keep only in original container.	
Response:	<ul> <li>P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</li> <li>P302 + P352 IF ON SKIN: Wash with plenty of soap and water.</li> <li>P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.</li> <li>P362 Take off contaminated clothing and wash before reuse.</li> <li>P390 Absorb spillage to prevent material damage.</li> </ul>	

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Storage: P406 Store in a corrosive resistant container with a resistant inner liner.

None.

Disposal: System of Classification Used:

Classification under 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

rise None.

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Hazards Not Otherwise Classified:

# Section 3. Composition/Hazardous Ingredients

Component	CAS Registry #	Wt.%	
Aluminum chlorohydrate	12042-91-0	15 - 30	
Comments	If chemical identity and/or exact percentage of composition has been withheld, this information is considered to be a trade secret.		

#### Section 4. First Aid Measures

Inhalation:	Call a POISON CENTER or doctor/physician if you feel unwell.
Eyes:	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice/attention.
Skin:	Wash with plenty of soap and water. Take off contaminated clothing and wash before re-use. If skin irritation occurs, seek medical advice/attention.
Ingestion:	Rinse mouth. Call a poison center or doctor/physician if you feel unwell.
Most Important Symptoms:	N/D
Indication of Immediate Medical Attention and Special Treatment Needed, If Necessary:	N/A

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# Section 5. Fire Fighting Measures

Flammability of the Product:	Not flammable.
Suitable Extinguishing Media:	Use extinguishing media suitable to surrounding fire.
Specific Hazards Arising from the Chemical:	Containers exposed in a fire should be cooled with water to prevent vapor pressure build-up leading to rupture.
Protective Equipment:	If product is involved in a fire, wear full protective clothing including a positive-pressure, NIOSH approved, self-contained breathing apparatus.

# Section 6. Accidental Release Measures

Personal Precautions:	Use appropriate Personal Protective Equipment (PPE).
Environmental Precautions:	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains, and sewers.
Methods for Cleaning up:	Contain and/or absorb spill with inert material then place in suitable container.
Other Statements:	None.

#### Section 7. Handling and Storage

Handling:	Wear appropriate Personal Protective Equipment (PPE) when handling this product. Do not get in eyes, or on skin and clothing. Wash thoroughly after handling. Do not ingest. Avoid breathing vapors, mist or dust.
Storage:	Store away from incompatible materials (see Section 10). Store at ambient temperatures. Keep container securely closed when not in use. Label precautions also apply to empty container. Recondition or dispose of empty containers in accordance with government regulations. For Industrial use only. Protect from heat and sources of ignition. Do not store or handle in aluminum, steel, copper, or their alloys. Do not freeze. Store above Freeze Point. If freezes, then mechanical mixing is required.

# Section 8. Exposure Controls/Personal Protection

Component	Source	Exposure Limits	
Aluminum chlorohydrate	N/E	N/E	
Engineering Controls:	Use only with adequate ventilation. The use of local ventilation is recommended to control emission near the source.		
Personal Protection			
Eyes:	Wear chemical splash goggles or safety glasses with full-face shield. Maintain eyewash fountain in work area.		
Skin:	Maintain quick-drench facilities in work area. Wear butyl rubber or neoprene gloves. Wash them after each use and replace as necessary. If conditions warrant, wear protective clothing such as boots, aprons, and coveralls to prevent skin contact.		
Respiratory:	gas dual ca	ccurs, use NIOSH approved organic vapor/acid rtridge respirator with a dust/mist prefilter in with 29 CFR 1910.134.	

# Section 9. Physical and Chemical Properties

Physical State and Appearance:	Liquid, Colorless, Clear
Specific Gravity:	1.176 @ 20°C
pH:	4.0 @ 20°C, 100.0%
Freezing Point:	34°F
Flash Point:	N/D
Odor:	Mild
Melting Point:	N/A
Initial Boiling Point and Boiling Range:	N/D
Solubility in Water:	Soluble
Evaporation Rate:	N/D
Vapor Density:	N/D
Molecular Weight:	N/D
Viscosity:	N/A
Flammability (solid, gas):	N/D
Flammable Limits:	N/A
Autoignition Temperature:	N/A
Density:	9.81 LB/GA





Vapor Pressure:	N/D
% VOC:	N/D
Odor Threshold	N/D
n-octanol Partition Coefficient	N/D
Decomposition Temperature	N/D

# Section 10. Stability and Reactivity

Chemical Stability:	Stable at normal temperatures and pressures.
Incompatibility with Various Substances:	Alkalis.
Hazardous Decomposition Products:	Hydrogen chloride, Chlorine gas.
Possibility of Hazardous Reactions:	None known.
Reactivity:	N/D
Conditions To Avoid:	N/D

#### Section 11. Toxicological Information

Chemical Name	Exposure	Type of Effe	oct Concentration	Species
Aluminum chlorohydrate	Oral	LD50	9187 MG/KG	Rat
	Dermal	LD50	>2000 MG/KG	Rat
Carcinogenicity Category	Sour	ce Code	Brief Description	
Aluminum chlorohydrate	N/E	N/E	N/E	
Likely Routes of Exposure: Symptoms	N/D			
Inhalation:	N/D			
	N/D			
Eye Contact:				

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Indection		N/D
Ingestion:		IN/D
Skin Corrosion/Irritation:	N/D	
Serious Eye Damage/Eye Irritation:	N/D	
Sensitization:	N/D	
Germ Cell Mutagenicity:	N/D	
Reproductive/Developmental Toxicity:	N/D	
Specific Target Organ Toxicity		
Single Exposure:		N/D
Repeated Exposure:		N/D
Aspiration Hazard:	N/D	
Comments:	None.	

# Section 12. Ecological Information

Species		Duration	Type of Effect	Test Results
Daphnia magna		48h	LC50	2.56 mg/l
		48h	LC50	1.34 mg/l
Ceriodaphnia dubia		48h	LC50	1.148 mg/l
		48h	LC50	0.34 mg/l
Fathead Minnow		96h	LC50	4.218 mg/l
		96h	LC50	4.1 mg/l
Persistence and Biodegradability:	N/D			
Bioaccumulative Potential:	N/D			
Mobility In Soil:	N/D			
Other Adverse Effects:	N/D			

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**ChemTreat** 



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Comments:

Water clarification polymers function by multipoint adsorption and charge neutralization with suspended solids. Polymers inherently migrate with solids in the separation process and with the exception of uneconomic overdose do not remain in the clarified waters. Aquatic toxicity determinations in test method protocol waters without suspended solids overestimate the toxicity compared to natural receiving waters.

#### Section 13. Disposal Considerations

Dispose of in accordance with local, state and federal regulations.

#### Section 14. Transport Information

Controlling					Packing
Regulation	UN/NA#:	Proper Shipping Name:	Technical Name:	Hazard Class:	Group:
DOT	N/A	COMPOUND, INDUSTRIAL	N/A	N/A	N/A
		WATER TREATMENT, LIQUID			
IMDG	UN3264	CORROSIVE LIQUID, ACIDIC,	(POLYALUMINUM CHLORIDE)	8	PGIII
		INORGANIC, N.O.S.			
ICAO	UN3264	CORROSIVE LIQUID, ACIDIC,	(POLYALUMINUM CHLORIDE)	8	PGIII
		INORGANIC, N.O.S.			
TDG	N/A	COMPOUND, INDUSTRIAL	N/A	N/A	N/A
		WATER TREATMENT, LIQUID			

Note:

When shipped by ground in the U.S., by exception 49 CFR 173.154 (d) (1) not subject to transport as a hazardous material when in authorized packaging that will not react dangerously or be degraded by the corrosive material.

#### Section 15. Regulatory Information

Inventory Status

United States (TSCA): Canada (DSL/NDSL):

All ingredients listed. All ingredients listed.





ChemTreat P893L

Federal R	egulations
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SARA	Title	ш	Rules

	, III I (dies				
	tions 311/312 Hazard sses				
Oth	Fire Hazard: Reactive Hazard: Release of Pressure: Acute Health Hazard: Chronic Health Hazard: er Sections			No No Yes No	
			la		
	Component		Section 313 Toxic Chemical	Section 302 EHS TPQ	CERCLA RO
	Aluminum chlorohydrate		N/A	N/A	N/A
	Comments:	None.			
gulations	3				

None known.

State Reg

California Proposition 65: Special Regulations

Compor

Compliance Information

NSF:	Certified to NSF/ANSI Standard 60 Maximum use rate for potable water – 20 mg/L This product ships as NSF from: Ashland, VA Nederland, TX Facility #4 USA Facility #7 USA Facility #25 USA
Food Regulations:	N/A
KOSHER:	This product has not been evaluated for Kosher approval.
Halal:	This product has not been evaluated for Halal approval.
FIFRA:	N/A
Other:	None

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#### Johnnents.

Section 16. Other Information

None.

HMIS Hazard	Rating
-------------	--------

Health: Flammability: Physical Hazard: PPE:

Notes:

The PPE rating depends on circumstances of use. See Section 8 for recommended PPE. The Hazardous Maderial Information System (HMIS) is a voluntary, subjective alpha-numeric symbolic system for recommending hazard risk and personal protection equipment information. It is a subjective rating system based on the evaluator's understanding of the chemical associated risks. The end-user must determine if the code is appropriate for their use.

#### Abbreviations

Abbreviation	Definition
<	Less Than
>	Greater Than
ACGIH	American Conference of Governmental Industrial Hygienists
EHS	Environmental Health and Safety Dept
N/A	Not Applicable
N/D	Not Determined
N/E	Not Established
OSHA	Occupational Health and Safety Dept
PEL	Personal Exposure Limit
STEL	Short Term Exposure Limit
TLV	Threshold Limit Value
TWA	Time Weight Average
UNK	Unknown

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Prepared by:

20033101AN 03/31/20

Revision Date:

Product Compliance Department; ProductCompliance@chemtreat.com March 31, 2020





ChemTreat P893L

# Disclaimer

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SD:

ChemTreat P893L

Although the information and recommendations set forth herein (hereinsfler "information") are presented in good faith and believed to be correct as of the date hereor. (Chem Treat, Inc. makes no representations as to the completeness or accuracy thereor. Information is supplied upon the condition that the persons receiving nature with make there one determination as to is subability of their purposes price to use. In no event will Chem Treat, Inc. the seponsible for damages of any nature withake there on determination as to is subability of their purposes price to use run event will Chem Treat, the represented or implied, or the reading the order of the subnature withake there are used here there will be presented to no warranties, either expressed or implied, or there information here in the presentation or the price of the suba pericular purpose, or of any other nature are much elementer with negocit to information or the process price of the subst pericular purpose, or of any other nature are much elementer with negocit to information or the submittion refers.

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ChemTreat		SDS	ChemTreat	SDS
Section 1. Chemical I	0/11 27 7 2	DATA SHEET	Prevention:	P202 Do not handle until all safety precautions have been read and understood. P201 Obtain special instructions before use. P271 Use only outdoors or in a well-ventilated area. P272 Contaminated work clothing should not be allowed out of the workplace.
Product Name: Product Use: Supplier's Name:		ChemTreat OC9103 Odor Control ChemTreat. Inc.		P280 Wear protective gloves/protective clothing/eye protection/face protection. P260 Do not breathe dust/fume/gas/mist/vapors/spray. P264 Wash thoroughly after handling.
Emergency Telephon Address (Corporate H Telephone Number fo Date of SDS: Revision Date: Revision Number:	Headquarters):	(800)424-9300 (Toll Free) 5640 Cox Road Glen Allen, VA 23060 (800)648-4579 December 8, 2021 December 8, 2021 21120801AN	Response:	P308 + P311 IF exposed or concerned: Call a POISON CENTER/doctor. P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P304 + P340 IF INHALED: Remove person to fresh
Section 2. Hazard(s)	Identification			air and keep comfortable for breathing P302 + P352 IF ON SKIN: Wash with plenty of soap and water. P332 + P313 If skin irritation develops or persists, get medical advice/attention. P337 + P313 if was irritation persists, net medical
	Identification WARNING			P302 + P352 IF ON SKIN: Wash with plenty of soap and water. P332 + P313 If skin irritation develops or persists, get medical advice/attention. P337 + P313 If eye irritation persists, get medical advice/attention. P362 + P364 Take off contaminated clothing and wash
Section 2. Hazard(s)	WARNING Acute Toxicity In Eye damage/irrit Specific Target ( Sensitization Ski Germ cell mutag	halation – Category 4 ation – Category 2b Trgan Toxicity – Single Exposure – Category 3 in – Category 1 encityt – Category 2	Storage:	<ul> <li>P302 + P352 IF ON SKIN: Wash with plenty of soap and water</li> <li>P332 + P313 if skin irritation develops or persists, get medical advice/attention.</li> <li>P337 + P313 if eye irritation persists, get medical advice/attention.</li> <li>P362 + P364 Take off contaminated clothing and wash it before reuse.</li> <li>P403 + P233 Store in a well-ventilated place. Keep container tightly closed.</li> <li>P405 Store locked up.</li> </ul>
Section 2. Hazard(s)	WARNING Acute Toxicity In Eye damage/irrit Specific Target O Sensitization Ski Germ cell mutag Skin corrosion/ir H315 Causes sk H317 May cause	halation – Category 4 ation – Category 2b Drgan Toxicity – Single Exposure – Category 3 n – Category 1 ritation – Category 2 ritation – Category 2 in irritation. a na allergic skin reaction.	Storage: Disposal:	P302 + P352 IF ON SKIN: Wash with plenty of soap and water P332 + P313 If skin irritation develops or persists, get medical advice/attention. P337 + P313 If eye irritation persists, get medical advice/attention. P362 + P364 Take off contaminated clothing and wash it before reuse. P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
Section 2. Hazard(s) i Signal Word: GHS Classification(s):	WARNING Acute Toxicity In Eye damage/inti Specific Target ( Sensitization Ski Germ cell mutag Skin corrosion/in H315 Causes sk H317 May cause H320 Causes ey H322 Harmful if H335 May cause	halation - Category 4 ation - Category 2b Organ Toxicity - Single Exposure - Category 3 in - Category 1 enicity - Category 2 ritation - Category 2 an irritation. a an allergic skin reaction. e irritation.	·	<ul> <li>P302 + P352 IF ON SKIN: Wash with plenty of soap and water.</li> <li>P332 + P313 if skin irritation develops or persists, get medical advice/attention.</li> <li>P337 + P313 if eye irritation persists, get medical advice/attention.</li> <li>P362 + P364 Take off contaminated clothing and wash it before reuse.</li> <li>P403 + P233 Store in a well-ventilated place. Keep container tightly closed.</li> <li>P405 Store locked up.</li> <li>P501 Dispose of container and container in accordance with applicable local, regional, national, and/or</li> </ul>

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Section 4. First Aid Measures

Comments

Inhalation:

Eyes:

Skin:

Ingestion:

Most Important Symptoms:

Indication of Immediate Medical Attention and Special Treatment Needed, If Necessary:

Section 3. Composition/Hazardous Ingredients

unwell.

N/D

N/A



Wt.%

30 - 60





ChemTreat OC9103

# Section 5. Fire Fighting Measures

Flammability of the Product:	Not flammable.
Suitable Extinguishing Media:	Alcohol foam Carbon Dioxide Dry Chemical Water fog Use extinguishing media suitable to surrounding fire.
Specific Hazards Arising from the Chemical:	None known.
Protective Equipment:	If product is involved in a fire, wear full protective clothing including a positive-pressure, NIOSH approved, self-contained
	breathing apparatus.
Section 6. Accidental Re	elease Measures
Section 6. Accidental Re Personal Precautions:	
	elease Measures

# Section 7. Handling and Storage

Handling:

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**ChemTreat** 

Other Statements:

Wear appropriate Personal Protective Equipment (PPE) when handling this product. Do not get in eyes, or on skin and clothing. Wash thoroughly after handling. Do not ingest. Avoid breathing vapors, mist or dust.

If RQ (Reportable Quantity) is exceeded, report to National Spill Response Office at 1-800-424-8802.

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CAS Registry #

If chemical identity and/or exact percentage of composition has been withheld, this information is considered to be a trade secret.

Remove to fresh air and keep at rest in a position comfortable for breathing. Call a poison center or doctor/physician if you feel

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice/attention.

Wash with plenty of soap and water. Take off contaminated clothing and wash before re-use. If skin irritation occurs, seek medical advice/attention.

Rinse mouth. Call a poison center or doctor/physician if you feel unwell.

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Storage:

Store away from incompatible materials (see Section 10). Store at ambient temperatures. Keep container securely closed when not in use. Label precations also apply to empty container. Recondition or dispose of empty containers in accordance with government regulations. For Industrial use only. Store above Freeze Point.

#### Section 8. Exposure Controls/Personal Protection

Exposure Limits			
Component		Source	Exposure Limits
Glyoxal		N/E	N/E
Ethylene glycol		ACGIH TLV	100 mg/m <sup>3</sup> Ceiling; Aerosol
Engineering Controls:	Use only with adequate ventilation. The use of local ventilation is recommended to control emission near the source.		uate ventilation. The use of local ventilation is ontrol emission near the source.
Personal Protection			
Eyes:	Wear chemical splash goggles or safety glasses with full-face shield.		
Skin:	Wear appropriate chemical resistant gloves.		
Respiratory:		If misting occurs, use NIOSH approved organic vapor/acid gas dual cartridge respirator with a dust/mist prefilter in accordance with 29 CFR 1910.134.	

#### Section 9. Physical and Chemical Properties

Physical State and Appearance: Specific Gravity: pH: Freezing Point: Flash Point: Odor: Melting Point: Initial Boiling Point and Boiling Range: Solubility in Water: Evaporation Rate: Vapor Density: Molecular Weight:	Liquid, Colortess, Clear 1.270 @ 20°C 2.3 @ 20°C, 100.0% 19.4*F N/A Mild N/D N/D N/D N/D N/D N/D N/D N/D
Molecular Weight:	N/D
Viscosity:	<100 CPS @ 20°C
Flammability (solid, gas):	N/D



Flammable	Limits:			
Autoignitio	n Tempera	ature:		
Density:				
Vapor Pres	sure:			
% VOC:				
Odor Three	shold			
n-octanol	Partition C	oefficier	nt	
Decompos	ition Temp	erature		

#### Section 10. Stability and Reactivity

Chemical Stability:	Stable at normal temperatures and pressures.
Incompatibility with Various Substances:	Strong Alkalis.
Hazardous Decomposition Products:	None known.
Possibility of Hazardous Reactions:	None known.
Reactivity:	N/D
Conditions To Avoid:	N/D

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N/A N/D 10.59 LB/GA

N/D N/D N/D N/D N/D

#### Section 11. Toxicological Information

Acute Toxicity				
Chemical Name	Exposure	Type of Effect	Concentration	Species
N/D	N/D	N/D	N/D	N/D

# Carcinogenicity Category

Component	Source	Code	Brief Description
Glyoxal	ACGIH TLV-A4 Not classifiable as a human carcinogen.		Not classifiable as a human carcinogen.
	MAK MAK-3B Cannot be conclusively assessed;		Cannot be conclusively assessed; tests have yielded
			insufficient data
Ethylene glycol	ACGIH	TLV-A4	Not classifiable as a human carcinogen.

Likely Routes of Exposure: N/D



Inhalation:

Eye Contact:

Skin Contact:

Ingestion:

Skin Corrosion/Irritation:

Serious Eye Damage/Eye Irritation:

Germ Cell Mutagenicity:

Aspiration Hazard:

Comments:

Ecotoxicity Species N/D

Persistence and Biodegradability:

Mobility In Soil:

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Bioaccumulative Potential:

Other Adverse Effects:

Reproductive/Developmental Toxicity:

Specific Target Organ Toxicity Single Exposure:

Repeated Exposure:

Section 12. Ecological Information

Sensitization:

N/D

N/D

N/D

N/D

N/D

N/D

Duration

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Type of Effect

Test Results

N/D

N/D

N/D

N/D

N/D

N/D

None

N/D

N/D

N/D

N/D

Symptoms







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Comments:

Not tested.

# Section 13. Disposal Considerations

Dispose of in accordance with local, state and federal regulations.

#### Section 14. Transport Information

Controlling Regulation	UN/NA#:	Proper Shipping Name:	Technical Name:		Packing Group:
	N/A		N/A	N/A	N/A
Note:		N/A			

# Section 15. Regulatory Information

Other Sections

Inventory Status	
Inventory Status	
United States (TSCA): Canada (DSL/NDSL):	All ingredients listed or exempt. All ingredients listed or exempt.
Federal Regulations	
SARA Title III Rules	
Sections 311/312 Hazard Classes	
Fire Hazard:	No
Reactive Hazard:	No
Release of Pressure:	No

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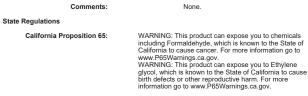
ns		
Chronic Health Hazard:	Yes	
Acute Health Hazard:	Yes	

	Section 313	Section 302 EHS	
Component	Toxic Chemical	TPQ	CERCLA RQ
Glyoxal	N/A	N/A	N/A
Ethylene glycol	Yes	N/A	5000

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## Special Regulations

Component			States
Glyoxal			None.
Ethylene glycol			MA, MN, NJ, NY, PA, WA
Compliance Information			
NSF:		N/A	
Food Regulations:		components of adl FDA: Complies wit 176.180 for use in food. FDA: Complies wit	th 21 CFR 175.105 for use as hesives. th 21 CFR 176.170 and 21 CFR paper and paperboard which contacts th 21 CFR 177.2280 for use as icles intended for repeated use.
KOSHER:		This product has n	ot been evaluated for Kosher approval.
Halal:		This product has n	not been evaluated for Halal approval.
FIFRA:		N/A	
Other:		None	
Comments:	None.		



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#### Section 16. Other Information

	Define a	
HMIS Hazard	a kating	
	Health: Flammability: Physical Haza PPE:	rd: 0 X
Notes		The PPE rating depends on circumstances of use. See Section 8 for recommended PPE. The Hazardous Material Information System (HMIS) is a voluntary, subjective alpha-numeric symbolic system for recommending hazard risk and personal protection equipment information. It is a subjective rating system based on the evaluator's understanding of the chemical associated risks. The end-user must determine if the code is appropriate for their use.
Abbreviation	ıs	
Abbreviation	Definitio	1
-	Less Tha	n

# A

Abbreviation	Definition		
<	Less Than		
>	Greater Than		
ACGIH	American Conference of Governmental Industrial Hygienists		
EHS	Environmental Health and Safety Dept		
N/A	Not Applicable		
N/D	Not Determined		
N/E	Not Established		
OSHA	Occupational Health and Safety Dept		
PEL	Personal Exposure Limit		
STEL	Short Term Exposure Limit		
TLV	Threshold Limit Value		
TWA	Time Weight Average		
UNK	Unknown		
Prepared by:	Product Compliance Department; ProductCompliance@chemtreat.com		

Revision Date:

December 8, 2021

21120801AN 12/08/21

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# Disclaimer

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4. First-aid measures

Although the information and recommendations set forth herein (hereinafter "information") are presented in good faith and believed to be correct as of the date hereof. ChemTratt, Inc. makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving maker whatshere including the mode that the persons of the purposes prior to use. In orient will ChemTratt, Inc. the representation of supplied upon the condition of any nature whatshere including the number of the purposes prior to use. In orient will ChemTratt, Inc. the representation of warranties, where expressed or implied, of mechantability, filteness for a particular purpose, or of any other handware is much reference with respect to humon the filteness in refers. If which information refers, the expression refers.

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# SAFETY DATA SHEET

roduct identifier	AQUACHLOR 12.5% NSF SODIU	HYBOCHLOBITE	
Tobact identification	None	un recencorne	
Recommended use	ALL PROPER AND LEGAL PURPO	1966	
Recommended restrictions	None known.	5626	
lanufacturer/importer/Suppli			
lanufacturer			
Company name Address	Brenntag Southwest, Inc. 610 Fisher Road Longview, TX 75604		
Telephone	903-759-7151		
E-mail	Not available.		
Emergency phone number	800-424-9300 CH	EMTREC	
2. Hazard(s) identificatio	a		
hysical hazards	Not classified.		
Health hazards	Skin corrosion/irritation	Category 1	
	Serious eye damage/eye irritation	Category 1	
Environmental hazards	Not classified.		
OSHA defined hazards	Not classified.		
abel elements			
Signal word	Danger		
Hazard statement	Causes severe skin burns and eye	damage. Causes serious eye damage	
Precautionary statement		1 AL 6 A 12 181 A	
Precautionary statement Prevention	Do not breathe mist or vapor. Wast clothing/eye protection/face protect		xtive gloves/protectiv
	clothing/eye protection/face protect If swallowed: Rinse mouth, Do NOT contaminated clothing, Rinse skin v keep comfortable for breathing. If in	ion. Finduce vomiting, If on skin (or hair): Ta vith water/shower. If inhated: Remove p i eyes: Rinse cautiously with water for s and easy to do. Continue rinsing. Imme-	ake off immediately a erson to fresh air an everal minutes.
Prevention	clothing/eye protection/face protect If swallowed: Rinse mouth. Do NOT contaminated clothing. Rinse skin v keep comfortable for breathing. If in Remove contact lenses, if present a	ion. Finduce vomiting, If on skin (or hair): Ta vith water/shower. If inhated: Remove p i eyes: Rinse cautiously with water for s and easy to do. Continue rinsing. Imme-	ake off immediately a erson to fresh air an everal minutes.
Prevention Response	clothing/eye protection:/ace protect If swallowed: Rinse mouth: Do NOT contaminated clothing. Rinse skin o keep comfortable for breathing. If in Remove contact lenses, if present a center/doctor. Wash contaminated Store locked up.	ion. Finduce vomiting, If on skin (or hair): Ta vith water/shower. If inhated: Remove p i eyes: Rinse cautiously with water for s and easy to do. Continue rinsing. Imme-	ake off immediately a erson to fresh air an everal minutes. ciately call a poison
Prevention Response Storage Disposal Hazard(s) not otherwise	clothing/eye protection:/ace protect If swallowed: Rinse mouth: Do NOT contaminated clothing. Rinse skin o keep comfortable for breathing. If in Remove contact lenses, if present a center/doctor. Wash contaminated Store locked up.	ion. I induce vomiting, if on skin (or hair): Ta vith water/shower. II inhated: Remove p eyes: Rinse cauficusly with water for s and easy to do. Continue rinsing, Imme- clothing before reuse.	ake off immediately a erson to fresh air an everal minutes. ciately call a poison
Prevention Response Storage	clothing/eye protection/face protect If swallowed: Rinse mouth. Do NOT contaminated clothing. Rinse skin w keep comfortable for breathing. If in Remove contact lenses; If present center/doctor. Wash contaminated Store locked up. Dispose of contents/container in ac	ion. I induce vomiting, if on skin (or hair): Ta vith water/shower. II inhated: Remove p eyes: Rinse cauficusly with water for s and easy to do. Continue rinsing, Imme- clothing before reuse.	ake off immediately a erson to fresh air an everal minutes. ciately call a poison
Prevention Response Storage Disposai Hazard(s) not otherwise classified (HNOC) Supplemental information	clothing/eye protection/face protect If swatiawas' Rines each. Do NOT contaminated clothing. Rines skin u keep conflortable for breaking. If Remove contact lenses, if present acenteridoctor. Wash contaminated Store locked up. Dispose of contents/container in ac None known.	ion. I induce vomiting, if on skin (or hair): Ta vith water/shower. II inhated: Remove p eyes: Rinse cauficusly with water for s and easy to do. Continue rinsing, Imme- clothing before reuse.	ake off immediately a erson to fresh air an everal minutes. ciately call a poison
Prevention Response Disposal taxard(s) not otherwise lassified (HVOC) Supplemental information 3. Composition/informal	clothing/eye protection/face protect If swatiawas' Rines each. Do NOT contaminated clothing. Rines skin u keep conflortable for breaking. If Remove contact lenses, if present acenteridoctor. Wash contaminated Store locked up. Dispose of contents/container in ac None known.	ion. I induce vomiting, if on skin (or hair): Ta vith water/shower. II inhated: Remove p eyes: Rinse cauficusly with water for s and easy to do. Continue rinsing, Imme- clothing before reuse.	ake off immediately a erson to fresh air an everal minutes. ciately call a poison
Prevention Response Disposal taxard(s) not otherwise lassified (HVOC) Supplemental information 3. Composition/informal	clothing/eye protection/face protect If swatiawas' Rines each. Do NOT contaminated clothing. Rines skin u keep conflortable for breaking. If Remove contact lenses, if present acenteridoctor. Wash contaminated Store locked up. Dispose of contents/container in ac None known.	ion. Induce vormting, if on skin for hair) To dith vaterbisover. Il inhaled: Remove y vese: Rinde calkinusly with water for and easy to do. Continue rinsing. Imme- clothing before reuse. condance with local/regional/haliohatim	ake off immediately a erson to fresh air an everal minutes. ciately call a poison
Prevention Response Disposai lazard(s) not otherwise Supplemental Information 3. Composition/informat Wixtures	clothing/eye protection/face protect If swaitowe? Rnee mouth. Do NOT contaminated clothing. Rinse skin w keep controlable for breathing. If it Remove contact lenese, if present center/doctor. Wash contaminated Store locked up. Dispose of contents/container in ac None known. None. tion on ingredients Common name and synonym	ion. I induce vomiting, if on skin for hair). To dith vaterbisover. II inhaled: Remove p vese: Rinse calkiously with water for and easy to do. Continue rinsing. Imme- clothing before reuse. condance with locativegional/hationation	ake off immediately a erson to fresh air an everat minutes, ciately call a poison ternational regulation
Prevention Response Disposal Haard(S) not otherwise classified (HNOC) Supplemental Information 3. Composition/informal Mixtures Chemical name HYPOCHLOROUS ACID. SI	clothing/eye protection/face protect If swallows? Rines mouth. Do NOT contaminated clothing. Rinse skin w keep controlable for breasthing. If in Remove contact lences, if present conterclocation. Wash contaminated Store locked up. Dispose of contents/container in ac None known. None. common name and synonym DDI/M	en. Induce vorniting, If on skin for hairy To ith vaterotativer, If inhaled: Remove ye- verse Risse calcularly with water for and easy to do. Continue rinsing, Imme- clathing before reuse. cardance with locativegional/hetiohat/im to CAS number	ake off immediately 4 erson to fresh air an everal minutes. titately call a poison ternational regulation

Designates that a specific chemical identity and/or percentage of comp Material name: AQUACHLOR 12.5% NSF SODIUM HYPOCHLORITE. 202001 Version # D8 Revision date: 01-19-2018 Issue date: 07-02-2015

8. Exposure controls/personal protection

Inhalation	Move to fresh air. Call a physician if symptoms develop or persist.	Occupational exposure limits	
Skin contact	Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a physician or poison control center immediately. Chemical burns must be treated by a physician. Wash contaminated clothing before reuse	US. OSHA Table Z-1 Limits for Components	or Air Contaminants (29 CFR 1910.1 Type
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to co. Continue rinsing. Call a physician or poison control center immediately.	SODIUM HYDROXIDE (NA(OH)) (CAS 1310-73-2)	PEL
Ingestion	Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs	US. ACGIH Threshold Limit Components	/alues Type
Most important symptoms/effects, acute and	Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may incluse stinging, tearing, redness, sweiting, and blurred vision. Permanent eye damage including binnenses could result.	SODIUM HYDROXIDE (NA(OH)) (CAS 1310-73-2)	Ceikng
delayed Indication of immediate	Provide general supportive measures and treat symptomatically. Chemical burns: Flush with water	US. NIOSH: Pocket Guide to	
nedical attention and special reatment needed	Frievee general supportive measures and need symptomatically. Chemical buttly. Thissi with water immediately. While fushing remove oldress which do not adhare to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim under observation. Symptoms may be delayed.	Components SODIUM HYDROXIDE (NA(OH)) (CAS 1310-73-2)	Type Ceiling
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.		al Exposure Level (WEEL) Guides Type
5. Fire-fighting measures		HYPOCHLOROUS ACID,	STEL
Suitable extinguishing media	Foam. Powder. Carbon djoxide (CO2).	SODIUM SALT (1:1) (CAS 7661-52-9)	
Unsuitable extinguishing	Do not use water jet as an extinguisher, as this will spread the fire.	Biological limit values	No biological exposure limits noted to
nedia Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.	Appropriate engineering controls	Good general ventilation (typically 10 should be matched to conditions. If a or other engineering controls to main
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.		exposure limits have not been establi wash facilities and emergency showe
Fire fighting equipment/instructions	Move containers from fire area if you can do so without tisk.	Individual protection measures, Eye/face protection	such as personal protective equipm Wear safety glasses with side shield
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.	Skin protection	
General fire hazards	No unusual fire or explosion hazards noted.	Hand protection	Wear appropriate chemical resistant
6. Accidental release mea	sures		supplier.
ersonal precautions	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Weat	Other	Wear appropriate chemical resistant
protective equipment and emergency procedures	appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if spirificant spillages cannot be	Respiratory protection Thermal hazards	In case of insufficient ventilation, wea Wear appropriate thermal protective
Methods and materials for	Charles belogate of matanining book and the and the set of the SDS. Contained. For personal protection, see section 8 of the SDS. Use water spray to reduce vapors or divert vapor cloud drift. Prevent entry into waterways, sewer,	General hygiene considerations	Always observe good personal bygie and before eating, drinking, and/or sr equipment to remove contaminants.
containment and cleaning up	basements or contined areas.	n (h)	
	Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is	9, Physical and chemical p	roperties
	possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.	Appearance	
	and place into containers in blowing product recovery, rosh area with water.	Physical state	Liquid.
	Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamingtion.	Form Color	Liquid. Coloriess to pale velicw
	remove residual contamination.	Odor	CHLORINE
	Never return spills to original containers for re-use. For waste disposat, see section 13 of the SDS.	Odor threshold	Not available
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.	odor mesnolo	115-135
7. Handling and storage		Pri Meiting point/freezing point	10 °F (-12 22 °C)
Precautions for safe handling	Do not breathe mist or vapor. Do not get in eyes, on skin, or on clothing. Avoid prolonged exposure Provide adequate ventilation. Wear appropriate personal protective equipment. Observe	Initial boiling point and boiling range	230.55 °F (110.3 °C) estimated
	good industrial hygiene practices.	Flash point	Not available
Conditions for sale storage, including any incompatibilities	Store locked up. Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).	Evaporation rate	Not available
are non-paristicates		Flammability (solid, gas)	Not applicable.
		Upper/lower flammability or expl	
		Flammability limit - lower (%)	Not available.
Material name: AQUACHLOR 12.5%		Material name: AQUACHLOR 12.5% #	
200091 Version # D8 Revision da	te: 01-19-2016 Issue date: 07-02-2015 2 / 8	200091 Version # DB Revision dat	e: 01-19-2016 Issue date: 07-02-2015

ChemTreat OC9103

US. OSHA Table Z-1 Limits Components	for Air Contaminants (29 CFR 1910.1000 Type	l) Value
SODIUM HYDROXIDE (NA(OH)) (CAS 1310-73-2)	PEL	2 mg/m3
US. ACGIH Threshold Limit	Values	
Components	Туре	Value
SODIUM HYDROXIDE (NA(OH)) (CAS 1310-73-2)	Ceiling	2 mg/m3
US. NIOSH: Pocket Guide to	o Chemical Hazards	
Components	Туре	Value
SODIUM HYDROXIDE (NA(OH)) (CAS 1310-73-2)	Ceiling	2 mg/m3
	tal Exposure Level (WEEL) Guides	
Components	Туре	Value
HYPOCHLOROUS ACID, SODIUM SALT (1:1) (CAS 7661-52-9)	STEL	2 mg/m3
Biological limit values	No biological exposure limits noted for th	ne ingredsent(s).
Appropriate engineering controls	should be matched to conditions. If apple or other engineering controls to maintain exposure limits have not been establishe	changes per hour) sknowld be used. Venitiation rates cable, use process enclosures, local exhaust venitiation, attborne levels below recommended exposure timits. If rd, maintain attborne levels to an acceptable level. Eye us be available when handling this product.
Individual protection measures,	such as personal protective equipment	
Eye/face protection	Wear safety glasses with side shields (or	r goggles) and a face shield.
Skin protection		
Hand protection	Wear appropriate chemical resistant glov supplier.	ves. Suitable gloves can be recommended by the glove
Other	Wear appropriate chemical resistant clot	hing.
Respiratory protection	In case of insufficient ventilation, wear su	uitable respiratory equipment.
Thermal hazards	Wear appropriate thermal protective cipt	hing, when necessary
General hygiene considerations		measures, such as washing after hanoting the materiat ing. Routinely wash work clothing and protective
9. Physical and chemical	properties	
Appearance		
Physical state	Liquid.	
Form	Liquid.	
Color	Coloriess to pale yellow	
Odor	CHLORINE	
Odor threshold	Nct available	
На	115-135	
Melting point/freezing point	10 °F (-12 22 °C)	
Initial boiling point and boiling range	230.55 °F (110.3 °C) estimated	
Flash point	Not available	
Evaporation rate	Not available	
Flammability (solid, gas)	Not applicable.	
Doper/lower flammability or exp		
oppennower nationability of exp	NOTION IN THE PARTY	

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Flammability limit - upper (%)	Net available.		OSHA Specifically Regulat Not listed.	eo substance:	s (49 GER 1910.1081-1050)		
Explosive limit - lower (%)	Not avaitable		US. National Toxicology Pr	rogram (NTP) i	Report on Carcinogens		
Explosive limit - upper (%)	Not available.		Not available.				
Vapor pressure	Not available		Reproductive toxicity	This produc	t is not expected to cause reproductive or	developmental effects.	
Vapor density	Nct available		Specific target organ toxicity -	Not classifie	ed.		
Relative density	Not available.		single exposure Specific target organ toxicity -	Not classifie	uń.		
Solubility(les) Solubility (water)	Not available.		repeated exposure	i su ciadone			
Partition coefficient	Not available.		Aspiration hazard		ration hazaro.		
(n-octanol/water)			Chronic effects	Protonged in	nhalation may be barmful.		
Auto-ignition temperature	Not available		<ol> <li>Ecological informatio</li> </ol>	ก			
Decomposition temperature	Not available		Ecotoxicity	The product	t is not classified as environmentally haza	rdous. However, this does not exclude	⊭de t
Viscosity	Not avaitable			possibility th	sat large or frequent spills can have a har		renn
Other information			Components	000 01 01 <b>7</b> 0	Species	Test Results	
Density	10 14 lbs/gal		HYPOCHLOROUS ACID. So Aquatic	UDIUM SALT (*	1:1) (CAS 7661-52-9)		
Explosive properties Oxidizing properties	Not explosive. Not oxidizing.		Fish	LC50	Chinopk salmon (Oncorhypochus	0.038 - 0.065 mg/l, 96 hours	
Percent volatile	86.8 % estimated		1.01	2000	tshawytscha)	5.550 - 5 205 Hg., 56 Hours	
Specific gravity	1.22		SODIUM HYDROXIDE (NA)	OH)) (CAS 131	0.73.2)		
	1-64		Aquatic				
<ol><li>Stability and reactivity</li></ol>			Grustacea	EC50	Water flea (Ceriodaphnia dubia)	34.59 - 47.13 mg/l, 48 hours	
Reactivity	Reacts violently with strong acids. This product may react with oxidizing agents		Fish	LC50	Western mosquitofish (Gambusia affit	tis) 125 mg/l, 96 hours	
Chemical stability	Material is stable under normal conditions.			N			
Possibility of hazardous reactions	Hazardous polymerization does not occur.		Persistence and degradability		ditional component data not shown. Wailable on the degradability of this produ	urt .	
Conditions to avoid	Contact with incompatible materials. Do not mix with other chemicals.		Bioaccumulative potential	No data ava		not.	
Incompatible materials	Acids Oxidizing agents.		Mobility in soil	Ne data ava			
Hazardous decomposition	No hazardous decomposition products are known.		Other adverse effects		iverse environmental effects (e.g. ozone d	eoletion, photochemical azone creat	ation
products					docrine disruption, global warming poten		
11. Toxicological informat	ion		13. Disposal consideration	กร			
Information on likely routes of e	xposlité		Disposal instructions		reclaim or dispose in sealed containers a		ose
Inhalation	May cause irritation to the respiratory system. Prolonged inhalation may be harr	nful.			ntainer in accordance with local/regional/r		
Skin contact	Causes severe skin burns.		Local disposal regulations Hazardous waste code		secordance with all applicable regulations tode should be assigned in discussion bet		
Eye contact	Causes serious eye camage.		Razardous waste code	disposal cor		week the aset, the producer and the	.e w
ingestion	Causes digestive tract burns.		Waste from residues / unused	Dispose of I	h accordance with local regulations. Emp		
Symptoms related to the physical, chemical and	Burning pain and severe corrosive skin damage. Causes serious eye damage. include stinging, tearing, redness, swelling, and biurted vision. Permanent eye of		products	product resi Disposat ins	idues. This material and its container mus structions).	i be disposed of in a safe manner (si	see:
toxicological characteristics	blinoness could result.		Contaminated packaging		ed containers may retain product residue, npty containers should be taken to an app		
Information on toxicological effe				disposal.	npty containers should be laken to an app	soved waste carding site for recycli	шц
Acute toxicity	Not available		a a Turnen ent internetien				
Skin corrosion/irritation	Causes severe skin burns and eye damage.		14. Transport information DOT	8			
Serious eye damage/eye irritation	Causes serious eye damage.		UN number	UN1791			
Respiratory or skin sensitization			UN proper shipping name		DRITE SOLUTION		
Respiratory sensitization	Net a respiratory sensitizer.		Transport hazard class(es)				
Skin sensitization	This product is not expected to cause skip sensitization.		Class	8			
Germ cell mutagenicity	No data available to indicate product or any components present at greater that mutagenic or genetoxic.	0 1% are	Subsidiary risk Packing group	-			
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OS	HA.	Special precautions for use ERG number	er Read safely 154	instructions, SDS and emergency proces	zures before handling.	
IARC Monographs. Overall I Not available.	Evaluation of Carcinogenicity		DOT information on packagin	ng may be diffe	rent from that listed.		
Material name: AQUACHLOR 12.5%	NSF SODIUM HYPOCHLORITE	នបន ប៊ុន	Material name: AQUACHLOR 12.5%	NSF SODIUM H	HYPOCHLORITE		-
	ts: 01-19-2016 Issue date: 07-02-2015	4/8	200091 Version # DB Revision d				

LATA	1704		
UN number UN proper shipping name	1791 HYPOCHLORITE SOLUTIO	N	
Transport hazard class(es) Class	5		
Subsidiary risk	-		
Packing group Environmental hazards	lil Ne		
Environmental hazaros ERG Code	154		
		S and emergency procedures before handling.	
тот			
CORROSIVE 8			
General information	IMDG Regulated Marine Pol	lutant	
15. Regulatory information	ĥ		
US federal regulations	This product is a "Hazardous Standard, 29 CFR 1910.120	s Chemical' as defined by the OSHA Hazard Communication 0.	
TSCA Section 12(b) Export Not regulated.	Notification (40 CFR 707, Sul	bpt. D)	
CERCLA Hazardous Substa			
HYPOCHLOROUS ACID 7681-52-9)	, SODIUM SALT (1:1) (CAS	Listed.	
	(A(OH)) (CAS 1310-73-2) se notification	Listed.	
Not regulated.	d Substances (29 CFR 1910.	1001-1050)	
Not listed.			
Superfund Amendments and Re		ARA)	
Hazard categories	Immediate Hazard - Yes Delayed Hazard - No Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No		
SARA 302 Extremely hazaro Not listed.			
SARA 311/312 Hazardous chemical	Yes		
· · · · ·	NSF SODIUM HYPOCHLORITE		SDS

Other federal regulations		
-	ion 112 Hazardous Air Pollutants (HAPs) List	
Not regulated.		
	ion 112(r) Accidental Release Prevention (40 CFR 68.130)	
Not regulated.		
Sate Drinking Water Act (SDWA)	Not regulated.	
IS state regulations		
	Substances. CA Department of Justice (California Health and Safe	ty Code Section 11100)
Not listed. US. California. Candidate (al)	Chemicals List. Safer Consumer Products Regulations (Cal. Code	Regs, tit. 22, 69502.3, subd.
	E (NA(OH)) (CAS 1310-73-2)	
US. Massachusetts RTK		
	CID. SODIUM SALT (1-1) (CAS 7681-52-9)	
	E (NA(OH)) (CAS 1310-73-2)	
	ind Community Right-to-Know Act DD, SODIUM SALT (1:1) (CAS 7881-52-9)	
	E (NA(OH)) (CAS 1310-73-2)	
	r and Community Right-to-Know Law	
SODIUM HYDROXIDI	CID. SODIUM SALT (1:1) (CAS 7681-52-9) E (NA(OH)) (CAS 1310-73-2)	
US. Rhode Island RTK		
	CID, SODIUM SALT (1:1) (CAS 7681-52-9) E (NA(OH)) (CAS 1310-73-2)	
	n 65 Ig Water and Toxic Enforcement Act of 1986 (Proposition 65): This mate ly listed as carcinogens or reproductive toxins.	rial is not known to contain
California Safe Drinkin any chemicals current	g Water and Toxic Enforcement Act of 1986 (Proposition 65): This mate	rial is not known to contain
California Safe Drinkin any chemicals current	g Water and Toxic Enforcement Act of 1986 (Proposition 65): This mate	
California Safe Drinkin any chemicals current nternational Inventories	ig Water and Toxic Enforcement Act of 1986 (Proposition 65): This mate ly listed as carcinogens or reproductive toxins.	On inventory (yes/no)
California Safe Drinkir any chemicals current nternational Inventories Country(s) or region	g Water and Toxic Enforcement Act of 1986 (Proposition 65): This mate ly fisted as carcinogens or reproductive toxins. Inventory name	On inventory (yes/no) Yet
California Sate Drinkir any chemicals current nternational Inventories Country(s) or region Australia	g Water and Toxic Enforcement Act of 1986 (Proposition 65): This mate y listed as carcinogens or reproductive toxins. Inventory name Australian Inventory of Chemical Substances (AICS)	On inventory (yes/no) Yet Yet
California Safe Drinkir any chemicals current nternational Inventories Country(s) or region Australia Canada	g Water and Toxic Enforcement Act of 1985 (Proposition 65): This mate ly listed as carcinogens or reproductive toxins. Inventory name Australian Inventory of Chemical Substances (AICS) Domesic Substances List (DSL)	On inventory (yes/no) Yer Yer No
California Sate Drinkir any chemicals current nternational Inventories Country(s) or region Australia Canada Canada	g Water and Toxic Enforcement Act of 1966 (Proposition 65): This mate ly listed as carcinogehs or reproductive toxins. Inventory name Australian Inventory of Chemical Substances (AICS) Domestic Substances List (DSL) Non-Domestic Substances List (NDSL) Inventory of Existing Chemical Substances in China (IECSC) European Inventory of Existing Commercial Chemical Substances (EINECS)	On inventory (yes/no) Yet Yet No
California Safe Drinki any chemicals current nternational Inventories Country(s) or region Australia Canada Canada Canada China	g Water and Toxic Enforcement Act of 1986 (Proposition 65): This mater y listed as carcinogens or reproductive toxins. Inventory name Australian Inventory of Chemical Substances (AICS) Domestic Substances List (OSL) Non-Domestic Substances List (NOSL) Inventory of Existing Chemical Substances in China (IECSC) European Inventory of Existing Commercial Chemical Substances (ELINCS) European List of Notified Chemical Substances (ELINCS)	On inventory (yes/no) Yes No Yes Yes Yes No
California Sate Denkir any chemicals current international Inventories Country(s) or region Austrasa Canada Canada Canada China Europe Europe Japan	g Water and Toxic Enforcement Act of 1965 (Proposition 65): This mater y listed as carcinogens or reproductive toxins. Inventory name Australian Inventory of Chemical Substances (AICS) Domestic Substances List (OSL) Non-Domestic Substances List (NOSL) Inventory of Existing Chemical Substances in China (IECSC) European Inventory of Existing Chemical Substances (ELINCS) European List of Notified Chemical Substances (ELINCS) European List of Notified Chemical Substances (ELINCS)	On inventory (yesino) Yer Ne Yer Yer Yer Yer Yer Yer
California Sate Drinki any obenicals current international Inventories Country(s) or region Australia Canada Canada China Europe Europe Europe Japan Korea	g Water and Toxic Enforcement Act of 1986 (Proposition 65): This mate y listed as carcinegens or reproductive toxins. Inventory name Australian Inventory of Chemical Substances (AICS) Domestic Substances List (NDSL) Inventory of Existing Chemical Substances in China (IECSC) European Inventory of Existing Commercial Chemical Substances (EINECS) European List of Notifier Chemical Substances (ELINCS) Inventory of Existing and New Chemical Substances (EICSS) Invertory of Existing and New Chemical Substances (ENCS) Existing Chemicals List (ECL)	On inventory (yesino) <sup>*</sup> Yes No Yes Yes Yes Yes Yes
California Sate Drinkir any chemicals current international Inventories Country(s) or region Australia Canada Canada China Europe Europe Japan Korea New Zealand	g Water and Toxic Enforcement Act of 1986 (Proposition 65): This mater y listed as carcinogens or reproductive toxins. Inventory name Australian Inventory of Chemical Substances (AICS) Domestic Substances List (OSL) Inventory of Existing Chemical Substances in China (IECSC) European Inventory of Existing Chemical Substances (ELINCS) Inventory of Existing Chemical Substances (ELINCS) Inventory of Existing Chemical Substances (ELINCS) Inventory of Existing Chemical Substances (ENCS) Eventor List of Notified Chemical Substances (ENCS) Existing Chemicals Liet (ECL) New Zealand Inventory	On inventory (yesino)' Yes Nes Yes Yes Yes Yes Yes Yes
California Sate Drinki any chemicals current International Inventories Country(§) or region Australia Canada Canada Canada Crinia Europe Europe Europe Europe Korea New Zealand Philippines	g Water and Toxic Enforcement Act of 1986 (Proposition 65): This mater y listed as carcinegens or reproductive toxins. Inventory name Australian Inventory of Chemical Substances (AICS) Domestic Substances List (NDSL) Invertory of Existing Chemical Substances in China (IECSC) European Inventory of Existing Commercial Chemical Substances (EINECS) European List of Notified Chemical Substances (ELINCS) Invertory of Existing Chemical Substances (ELINCS) Invertory of Existing Chemical Substances (ELINCS) Invertory of Existing Chemical Substances (ELINCS) Existing Chemicas List (ECL) New Zealand Invertory Philippine Inventory of Chemicals and Chemical Substances (PICCS)	On inventory (yesino) Yer Ne Yer Yer Yer Yet Yet Yet
California Sate Drinki any chemicals current international Inventories Country(§) or region Australia Canada Canada Canada Canada Canada Europe Europe Europe Europe Europe Bapan Korea New Zealand Philippines United States & Puerto Ric "A "Yes" inducites that all down	g Water and Toxic Enforcement Act of 1986 (Proposition 65): This mater y listed as carcinegens or reproductive toxins. Inventory name Australian Inventory of Chemical Substances (AICS) Domestic Substances List (NDSL) Invertory of Existing Chemical Substances in China (IECSC) European Inventory of Existing Commercial Chemical Substances (EINECS) European List of Notified Chemical Substances (ELINCS) Invertory of Existing Chemical Substances (ELINCS) Invertory of Existing Chemical Substances (ELINCS) Invertory of Existing Chemical Substances (ELINCS) Existing Chemicas List (ECL) New Zealand Invertory Philippine Inventory of Chemicals and Chemical Substances (PICCS)	On inventory (yesino)' Yes No Yes Yes Yes Yes Yes Yes Yes
California Sate Denkir any chemicals current international Inventories Country(s) or region Australia Canada Canada Canada Curope Europe Europe Europe Japan Korea New Zealand Philippines United States & Puerto Ric a "Ne" indicates that all corr a "Ne" indicates that all corr	g Water and Toxic Enforcement Act of 1986 (Proposition 65): This mater y listed as carcinegens or reproductive toxins. Inventory name Australian Inventory of Chemical Substances (AICS) Domestic Substances List (NDSL) Invertory of Existing Chemical Substances in China (IECSC) European Inventory of Existing Commercial Chemical Substances (EINECS) European List of Notified Chemical Substances (ELINCS) Invertory of Existing and New Chemical Substances (ELINCS) Invertory of Existing Chemical Substances (ELINCS) Invertory of Existing Chemical Substances (ELINCS) Invertory of Existing and New Chemical Substances (ENCS) Existing Chemicals List (ECL) New Zealand Invertory Philippine Inventory of Chemicals and Chemical Substances (PICCS) © Toxic Substances Control Act (TSCA) Invertory points of the product comply with the inventory requirements administered by	On inventory (yesino)' Yes Ne Yes Yes Yes Yes Yes Yes Yes Yes
California Sate Drinkir any chemicals current international Inventories Country(s) or region Australia Canada Canada Canada Canada Europe Europe Europe Europe Europe Europe United States & Puerto Rick Yhilippines United States & Puerto Rick 'A "Yea" indicates that or or m cumity(s).	g Water and Toxic Enforcement Act of 1986 (Proposition 65): This mater y listed as carcinegens or reproductive toxins. Inventory name Australian Inventory of Chemical Substances (AICS) Domestic Substances List (NDSL) Inventory of Existing Chemical Substances in China (IECSC) European Inventory of Existing Commercial Chemical Substances (EINECS) European List of Notifier Chemical Substances (ELINCS) Inventory of Existing and New Chemical Substances (EICS) Existing Chemicals Lust (ECL) New Zeeland Inventory Philippier Inventory of Chemicals and Chemical Substances (PICCS) or Toxic Substances Control Act (TSCA) Inventory ponents of his product oxing you to use an examplificant same growthered production of the product are not tabled or examplificant intering on the meredi	On inventory (yesino)' Yes Ne Yes Yes Yes Yes Yes Yes Yes Yes
California Sate Drinkir any chemicals current international Inventories Canada Canada Canada Canada Canada Europe Europe Europe Europe Europe Burge Mew Zealand Philippines United States & Puerto Ric A Traf indicates that can or m country(s).	g Water and Toxic Enforcement Act of 1986 (Proposition 65): This mater y listed as carcinegens or reproductive toxins. Inventory name Australian Inventory of Chemical Substances (AICS) Domestic Substances List (NDSL) Invertory of Existing Chemical Substances in China (IECSC) European List of Notified Chemical Substances (ELINCS) Invertory of Existing Chemical Substances (ELINCS) Existing Chemicals List (CL) New Zealand Invertory Philippine Inventory of Chemicals and Chemical Substances (PICCS) onents of the product comply with the inventory equipments at aphinatered by one consponents of the product are not listed or exempt from listing on the inventor hold and the of preparation or last revision	On inventory (yesino)' Yes Ne Yes Yes Yes Yes Yes Yes Yes Yes
California Sate Denkir any chemicals current international Inventories Country(s) or region Australia Canada Canada Canada Curope Europe Europe Europe Europe Japan Korea New Zealand Philippines United States & Puerto RIG A "res" industries that all corr a "res" industries that all corr	g Water and Toxic Enforcement Act of 1986 (Proposition 65): This mater y listed as carcinogens or reproductive toxins. Inventory name Australian Inventory of Chemical Substances (AICS) Domestic Substances List (DSL) Inventory of Existing Chemical Substances in China (IECSC) European Inventory of Existing Commercial Chemical Substances (EINECS) European List of Notified Chemical Substances (ELINCS) Inventory of Existing Chemical Substances (ELINCS) Inventory of Existing Chemical Substances (ELINCS) Existing Chemicats List (ECL) New Zealand Inventory Philippine Inventory of Chemicats and Chemical Substances (PICCS) e Toxic Substances Control Act (TSCA) Inventory ponentis of his product comply with the inventory requirements administerad by its component of the product are not listed or exemption in listing on the inventory of Complexity of the product are not listed or exemption in listing on the inventory encluding date of preparation or last revision 07-02-2015	On inventory (yesino)' Yes No Yes Yes Yes Yes Yes Yes Yes

Health: 3 Flammability: 0 Instability: 0 NFPA ratings While Trendrag believes the information contained herein to be accurate. Brendrag makes no representation or warranty, express or implied, regarding and assumes no liability for, the acouracy or completeness of the information. The Boyer assumes and is exponsible, for handling, using and/or reselling the Product In accordance with applicable foceral, state, and local taw. This SDS shall not in any way limit or preclude the operation and effect of any of the provisions of Brendrag's terms and conditions of sale. Fire-fighting measures. Suitable extinguishing media Accidental release measures: Personal precautions, protective equipment and emergency Revision information Accidential release measures, versional processions, protective squapment and emerger prodectives Accidential release measures. Methods and materials for containment and cleaning up Handing and storage. Conclusions for safe storage, including any incompatibilities Toxicological information: Chronic effects Toxicological information: Chronic effects Transport information: General information



#### SAFETY DATA SHEET

1. Identification			
Product identifier	CD24		
Other means of identification	None.		
Recommended use	Cooling Water Treatment		
Recommended restrictions	None known.		
Manufacturer/Importer/Supplie	er/Distributor information		
Manufacturer			
Company name	ChemTreat, Inc. 5640 Cox Road		
Address	Glen Allen, VA 23060		
	United States		
Telephone	800-648-4579		
Website	chemtreat.com		
E-mail	productcompliance@chemtreat.com		
Emergency phone number	800-424-9300		
2. Hazard(s) identification	n		
Physical hazards	Not classified.		
Health hazards	Skin corrosion/irritation	Category 1	
	Serious eye damage/eye irritation	Category 1	
Environmental hazards	Not classified.		
OSHA defined hazards	Not classified.		
Label elements			
Signal word	Danger		
Hazard statement	Causes severe skin burns and eye damage	. Causes serious eye damage.	
Precautionary statement			
Prevention	Do not breathe mist/vapors. Wash thorough clothing/eye protection/face protection.	ly after handling. Wear protecti	ve gloves/protective
Response	If swallowed: Rinse mouth. Do NOT induce contaminated clothing. Rinse skin with wate keep comfortable for breathing. If in eyes: R Remove contact lenses, if present and easy center/doctor. Wash contaminated clothing I	r/shower. If inhaled: Remove p tinse cautiously with water for s to do. Continue rinsing. Immed	erson to fresh air and everal minutes.
Storage	Store locked up.		
Disposal	Dispose of contents/container in accordance	e with local/regional/national/int	ternational regulations
Hazard(s) not otherwise classified (HNOC)	None known.		
Supplemental information	None.		
3. Composition/informat	tion on ingredients		
Mixtures			
Chemical name	Common name and synonyms	CAS number	%
Sulfuric acid		7664-93-9	10 - < 20
	ortable levels		80 - < 90
Other components below rep			

Material name: AQUACHLOR 12.5% NSF SODIUM HYPOCHLORITE Issue date: 07-02-2015 Version #: DB Revision date: 01-19-2016

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4. First-aid measures Move to fresh air. Call a physician if symptoms develop or persist. Inhalation Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a physician or poison control center immediately. Chemical burns must be treated by a physician. Wash contaminated clothing before reuse. Skin contact Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control center immediately Eye contact Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Ingestion Burning pain and severe corrosive skin damage. Causes serious eve damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Most important symptoms/effects, acute and delayed Indication of immediate medical attention and special treatment needed Provide general supportive measures and treat symptomatically. Chemical burns: Flush v immediately. While flushing, remove clothes which do not adhere to affected area. Call ar ambulance. Continue flushing during transport to hospital. Keep victim under observation Symptoms may be delayed. General information Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. 5. Fire-fighting measures Suitable extinguishing media Foam. Powder. Carbon dioxide (CO2). Do not use water jet as an extinguisher, as this will spread the fire. Unsuitable extinguishing media Specific hazards arising from the chemical During fire, gases hazardous to health may be formed. Special protective equipment and precautions for firefighters Self-contained breathing apparatus and full protective clothing must be worn in case of fire Fire fighting equipment/instructions Move containers from fire area if you can do so without risk. Specific methods Use standard firefighting procedures and consider the hazards of other involved materials. General fire hazards No unusual fire or explosion hazards noted. 6. Accidental release measures Keep unnecessary personnel away. Keep people away from and upwind of spiil/leak. Wear appropriate protective equipment and dohing during clean-up. Do not touch damaged containers or spiiled material unless wearing appropriate protective dohing. Ensure adequate ventilation. Local authorities should be advised if significant spiilages cannot be contained. For personal protection, see section 8 of the SDS. Personal precautions protective equipment and emergency procedures Methods and materials for Should not be released into the environment. containment and cleaning up Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product possible. Absorb in vermiculite, recovery, flush area with water. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. Prevent further leakage or spillage if safe to do so. Do not contaminate water. Avoid discharge into drains, water courses or onto the ground. Environmental precautions 7. Handling and storage Do not breathe mist/vapors. Do not get in eyes, on skin, or on clothing. Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. Precautions for safe handling Store locked up. Store in tightly closed container. Store away from incompatible materials (see Section 10 of the SDS). Conditions for safe storage, including any incompatibilities

Material name: CD24

584 Version #: 01 Issue date: 05-05-2023

8. Exposure controls/personal protection upational exposure limits The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits. US. OSHA Table Z-1 Permissible Exposure Limits (PEL) for Air Contaminants (29 CFR 1910.1000) Components Туре Value Sulfuric acid (CAS 7664-93-9) PEL 1 ma/m3 US. ACGIH Threshold Limit Values (TLV) Type Form Value Components Sulfuric acid (CAS 7664-93-9) TWA 0.2 mg/m3 Thoracic fraction. NIOSH. Immediately Dangerous to Life or Health (IDLH) Values, as amended Components Type Value Sulfuric acid (CAS 7664-93-9) IDLH 15 mg/m3 US. NIOSH: Pocket Guide to Chemical Hazards Recommended Exposure Limits (REL) Components Value Value Sulfuric acid (CAS 7664-93-9) TWA 1 mg/m3 Biological limit values No biological exposure limits noted for the ingredient(s). Good general verilation should be used. Verilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust venilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits, have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product. Appropriate engineering controls Individual protection measures, such as personal protective equipment Eye/face protection Wear safety glasses with side shields (or goggles) and a face shield. Skin protection Hand protection Wear appropriate chemical resistant gloves Other Wear appropriate chemical resistant clothing. Respiratory protection In case of insufficient ventilation, wear suitable respiratory equipment. Thermal hazards Wear appropriate thermal protective clothing, when necessary. Always observe good personal hygiene measures, such as washing after handling the material and before eating, dinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. General hygiene considerations 9. Physical and chemical properties Appearance Physical state Liquid. . Liquid. Form Color Colorless Mild Odor Odor threshold Not available 0 - 2 (10% Dilution) pН <-11.20 °F (<-24.00 °C) Melting point/freezing point Initial boiling point and boiling Not available Flash point Not available Evaporation rate Not available Not applicable Flammability (solid, gas) Upper/lower flammability or explosive limits Explosive limit - lower (%) Not available

Explosive limit - upper (%)	Not available.	
Vapor pressure	Not available.	
Vapor density	Not available.	
Relative density	Not available.	
Solubility(ies)		
Solubility (water)	Not available.	
Partition coefficient (n-octanol/water)	Not available.	
Auto-ignition temperature	Not available.	
Decomposition temperature	Not available.	
Viscosity	Not available.	
Other information		
Explosive properties	Not explosive.	
Oxidizing properties	Not oxidizing.	
Pounds per gallon	9.56	
Specific gravity	1.12 - 1.16 @ 20C	
10. Stability and reactivity	/	
Reactivity	Reacts violently with strong alkali	ne substances. This product may react with reducing agents.
Chemical stability	Material is stable under normal co	
Possibility of hazardous reactions	Hazardous polymerization does n	
Conditions to avoid	Contact with incompatible materia	als. Do not mix with other chemicals.
Incompatible materials	Bases. Reducing agents.	
Hazardous decomposition products	No hazardous decomposition pro-	ducts are known.
11. Toxicological informa	tion	
Information on likely routes of e	exposure	
Inhalation	May cause irritation to the respira	tory system. Prolonged inhalation may be harmful.
Skin contact	Causes severe skin burns.	
Eve contact	Causes serious eye damage.	
Ingestion	Causes digestive tract burns.	
Symptoms related to the physical, chemical and toxicological characteristics	Burning pain and severe corrosive	e skin damage. Causes serious eye damage. Symptoms may swelling, and blurred vision. Permanent eye damage including
Information on toxicological eff	ects	
Acute toxicity	Not known.	
Components	Species	Test Results
Sulfuric acid (CAS 7664-93-9)		
Acute		
Inhalation		
LC50	Guinea pig	0.018 mg/l, 8 Hours
	Rat	347 mg/l, 1 Hours
Oral		
LD50	Rat	2140 mg/kg
Skin corrosion/irritation	Causes severe skin burns and ey	e damage.
Serious eye damage/eye irritation	Causes serious eye damage.	-
Respiratory or skin sensitization	n	
Respiratory sensitization	Not a respiratory sensitizer.	
Skin sensitization	This product is not expected to ca	ause skin sensitization.
Material name: CD24 584 Version #: 01 Issue date: 05-		sos 4

UN proper shipping name		ACID SOLUTION		
DOT UN number	UN2796			
14. Transport information	1			
Contaminated packaging	emptied. Er disposal.		ct residue, follow label warnings even after containe to an approved waste handling site for recycling or	
Waste from residues / unused products	product res Disposal in	idues. This material and its con structions).	ions. Empty containers or liners may retain some tainer must be disposed of in a safe manner (see:	
	The waste disposal co	code should be assigned in dise mpany.	cussion between the user, the producer and the wast	
Local disposal regulations Hazardous waste code		accordance with all applicable r te Corrosive material [pH ≤2 or	•	
	drain into s local/regior	ewers/water supplies. Dispose al/national/international regulat	of contents/container in accordance with ions.	
Disposal instructions			hazardous or special waste collection point. Inciner an approved incinerator. Do not allow this material to	
13. Disposal consideration	ons			
Other adverse effects			g. ozone depletion, photochemical ozone creation ning potential) are expected from this component.	
Mobility in soil	No data av	ailable.		
Partition coefficient n-octar Sulfuric acid	nol / water (lo	g Kow) -2.2		
Bioaccumulative potential	. NO Uatd 15	available on the degradebility o	any my condition in the mature.	
Persistence and degradability		available on the degradability of		
Fish	LC50		les promelas) > 100 mg/l, 96 hours (Estimated)	
O USTROGA	2000	Daphnia pulex	> 100 mg/l, 48 hours (Estimated)	
Acute Crustacea	LC50	Daphnia magna	> 100 mg/l, 48 hours (Estimated)	
Aquatic				
CD24				
Product		Species	Test Results	
Ecotoxicity		the low pH of this product, it we aquatic organisms and aquation	ould be expected to produce significant ecotoxicity up systems.	
12. Ecological informatio				
		nnaiation may be narmitui.		
Aspiration hazard Chronic effects		ration hazard. nhalation may be harmful.		
Specific target organ toxicity - repeated exposure	Not classifi			
Specific target organ toxicity - single exposure	Not classifi			
Reproductive toxicity			oductive or developmental effects.	
US. National Toxicology Pr Sulfuric acid (CAS 7664-	-93-9)	Known To	Be Human Carcinogen.	
OSHA Specifically Regulate Not regulated.		. ,		
Not listed.	Eraldadon o	ouroniogonioty		
IARC Monographs. Overall		• •		
Carcinogenicity		mutagenic or genotoxic. Not classifiable as to carcinogenicity to humans.		

8	>				
15. Regulatory inform	ation				
US federal regulations		t is a "Hazardou 9 CFR 1910.12		d by the OSHA Hazard	Communication
Toxic Substances Con	trol Act (TSCA)				
TSCA Section 12(b Not regulated.	) Export Notificati	on (40 CFR 70	7, Subpt. D)		
CERCLA Hazardous S	ubstance List (40 (	CFR 302.4)			
Sulfuric acid (CAS 7 SARA 304 Emergency	(664-93-9)		Listed.		
Sulfuric acid (aeros OSHA Specifically Reg			1000 LBS .1001-1053)		
Not regulated.					
Superfund Amendments an SARA 302 Extremely h			SARA)		
Chemical name	CAS number	Reportable quantity (pounds)	Threshold planning quantity (pounds)	Threshold planning quantity, lower value (pounds)	Threshold planning quanti upper value (pounds)
Sulfuric acid	7664-93-9	1000	1000	(p=====)	(+)
SARA 311/312 Hazardo chemical	us Yes				
Classified hazard categories		on or irritation damage or eye	irritation		
SARA 313 (TRI reportin Chemical name	ng)	C	AS number	% by wt.	
Sulfuric acid		7	664-93-9	10 - < 20	
Other federal regulations					
Clean Air Act (CAA) Se	ction 112 Hazardo	ous Air Polluta	nts (HAPs) List		
Not regulated. Clean Air Act (CAA) Se	ction 112(r) Accid	ental Release	Prevention (40 CFR 6	8.130)	
Not regulated. Safe Drinking Water A	t Not regulate	ed.			
(SDWA) Drug Enforcement Chemical Code Nu		EA). List 2, Es	sential Chemicals (21	CFR 1310.02(b) and 1	1310.04(f)(2) and
Sulfuric acid (C	AS 7664-93-9)	)EA). List 1 & 2	6552 Exempt Chemical Mi	xtures (21 CFR 1310.1	2(c))
Sulfuric acid (C DEA Exempt Chen	AS 7664-93-9)		20 %WV		-(0)/
Ben exempt offer			6552		
Sulfuric acid (C					
Sulfuric acid (C US state regulations	A0 7004-33-3)				

Transport hazard class(es) Class Subsidiary risk Label(s) 
 Subsidiary risk

 Label(s)
 8

 Packing group
 I

 Environmental hazards
 No.

 Special processions for user
 Read safety instructions, SDS and emergency procedures before handling.

 Special provisions
 A3, A7, B2, B15, IB2, N6, N34, T8, TP2, TP12

 Packaging provisions
 A3, A7, B2, B15, IB2, N6, N34, T8, TP2, TP12

 Packaging non bulk
 202

 Packaging non bulk
 202

 Packaging provisions
 SUSE

 VN number
 UV2796

 UN proper shipping name
 SULFURIC ACID SOLUTION

 Transport hazard class(es)
 5

 Class
 8

 Subsidiary risk

 Packaging roup
 II

 EIRC Code
 8

 Special precautions for user
 Read safety instructions, SDS and emergency procedures before handling.

 Other information
 Aloved with restrictions.

 aircraft
 Carog aircraft only

 UN number
 UNoved with restrictions.
 -8 11 
 Class of an Cartoniny
 Allowed with resolutions.

 UBG
 UN proper shipping name
 SULFURIC ACID SOLUTION

 Transport hazard class(es)
 SULFURIC ACID SOLUTION

 Class
 8

 Subsidiary risk

 Packing group
 II

 Environmental hazards
 No.

 Ems
 F-A, S-B

 Special precautions for user
 Read safety instructions, SDS and emergency procedures before handling.

 Transport in bulk according to
 Not established.

 He BC Code
 DOT
 IMDG DOT

8



#### California Proposition 65

WARNING: This product can expose you to Sulfuric acid, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

California Proposition 65 - CRT: Listed date/Carcinogenic substance Sulfuric acid (CAS 7664-93-9) Listed: March 14, 2003

International Inventories		
Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Industrial Chemicals (AICIS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes
	nents of this product comply with the inventory requirements administered by the components of the product are not listed or exempt from listing on the inventory a	
16. Other information, inc	luding date of preparation or last revision	
Issue date	05-05-2023	
Version #	01	
HMIS® ratings	Health: 3 Flammability: 0 Physical hazard: 0 Personal protection: B	
Disclaimer	ChemTreat, Inc. cannot anticipate all conditions under which this inform the products of other manufacturers in combination with its product, me responsibility to ensure safe conditions for handling, storage and dispo assume liability for loss, injury, damage or expense due to improper us	y be used. It is the user's sal of the product, and to e. The information in the

assume liability for loss, injury, damage or expense due to import use. The information in the standard or the best knowledge and experience currently available. Although the information and recommendations set forth hereinater "information" and are presented in good faith and believed to be correct as of the date hereor, ChemTreat, Inc. makes no more the persons recommendation and the persons recommendation good faith and believed to be correct as of the date hereor, ChemTreat, Inc. makes no mortion in the persons recommendation game with a match bein own determination as to its suitability for their purposes prior to use. In no event will ChemTreat, Inc. be responsible for damages of any mature whatsever resulting from the use or reliance upon information. No representation or warranties, either expressed or implied, of merchantability, fitness for a particular purpose, or of any other nature are made hereunder with respect to information refers.

Prepared by: Product Compliance Department: ProductCompliance@chemtreat.com Other information

```
erial name: CD24
Version #: 01 Issue date: 05-05-2023
```

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Response:	P314 Get medical advice/attention if you feel unwell. P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing P301 + 330 + 331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P315 Get immediate medical advice/attention.
Storage:	P405 Store locked up.
Disposal:	P501 Dispose of contents and container in accordance with applicable local, regional, national, and/or international regulations.
System of Classification Used:	Classification under 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).
Hazards Not Otherwise Classified:	None.

#### Section 3. Composition/Hazardous Ingredients

Component	CAS Registry #	Wt.%
Sodium chlorite	7758-19-2	25
Comments	ty and/or exact percenta	

#### Section 4. First Aid Measures

Inhalation:	Call a POISON CENTER or doctor/physician if you feel unwell.
Eyes:	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor/physician.
Skin:	Call a poison center or doctor/physician if you feel unwell.
Ingestion:	DO NOT INDUCE VOMITING. Rinse mouth. Immediately call a POISON CENTER or doctor/physician.
Most Important Symptoms:	N/D





# SAFETY DATA SHEET

Section 1. Chemical Product and Company Identification

DANGER

Product Name: Product Use:

Supplier's Name: Emergency Telephone Number: Address (Corporate Headquarters): Telephone Number for Information: Date of SDS: Revision Date: Revision Number:

#### Section 2. Hazard(s) Identification

Signal Word: GHS Classification(s):

Hazard Statement(s):

Acute Toxicity Oral – Category 3 Eye damage/irritation – Category 1 Specific Target Organ Toxicity – Single Exposure – Category 3 Specific Target Organ Toxicity – Repeated Exposure – Category

Hazardous to the aquatic environment Acute - Category 1 H301 Toxic if swallowed.

H316 Causes serious eye damage. H335 May cause respiratory irritation. H373 May cause damage to organs through prolonged or repeated exposure. H400 Very toxic to aquatic life.

ChemTreat CL25D Cooling Water Microbiocide and Chlorine Dioxide Precursor ChemTreat, Inc. (800)424–9300 (701 Free) 5640 Cox Road Glen Allen, VA 23060 (800)648–4579 February 7, 2019 February 7, 2019 19020701AN

Precautionary Statement(s):

Prevention:

P280 Wear protective gloves/protective clothing/eye protection/face protection. P271 Use only outdoors or in a well-ventilated area. P260 Do not breathe dust/fume/gas/mist/vapors/spray. P270 Do not eat, drink, or smoke when using this product. P264 Wash thoroughly after handling. P273 Avoid release into the environment.

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ChemTreat CL25D





Indication of Immediate Medical Attention and Special Treatment Needed, If Necessary:

Have the product container, label or MSDS with you when calling a poison control center or doctor, or when going for treatment.

# Section 5. Fire Fighting Measures

Flammability of the Product:	Not flammable.
Suitable Extinguishing Media:	Use extinguishing media suitable to surrounding fire.
Specific Hazards Arising from the Chemical:	Product may emit toxic gases or fumes under fire conditions.
Protective Equipment:	If product is involved in a fire, wear full protective clothing including a positive-pressure, NIOSH approved, self-contained breathing apparatus.

#### Section 6. Accidental Release Measures

Personal Precautions:	Use appropriate Personal Protective Equipment (PPE).
Environmental Precautions:	This pesticide is toxic to fish and aquatic organisms. Do not discharge effluent containing this product into lakes, ponds, streams, estuaries, oceans or public waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit, and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA.
Methods for Cleaning up:	Contain spill. Spilled materials may be absorbed using non-combustible and non-organic commercial absorbents. Dampen and scoop spilled material into clean, dedicated equipment. Every attempt should be made to avoid mixing spilled material with other chemicals or debris when cleaning up. Keep collected material damp and put into drums. Dried material can ignite upon contact with combustibles. Dispose of promptly. Dispose of in accordance with all applicable regulations.
Other Statements:	None.



Handling:

Storage:

Exposure Limits

Engineering Controls:

Personal Protection

Eyes:

Skin:

Respiratory:

Component

Section 7. Handling and Storage

Section 8. Exposure Controls/Personal Protection

Source

N/E

Exposure Limits

Use only with adequate ventilation. The use of local ventilation is recommended to control emission near the source.

Maintain quick-drench facilities in work area. Wear appropriate chemical resistant gloves.

Wear chemical splash goggles or safety glasses with full-face shield. Maintain eyewash fountain in work area.

If misting occurs, use NIOSH approved organic vapor/acid gas dual cartridge respirator with a dust/mist prefilter in accordance with 29 CFR 1910.134.







ChemTreat CL25D

Clear

### Section 9. Physical and Chemical Properties

Specif pH: Freezi Flash Odor: Mettin, initial Solubi Evapo Vapor Molect Viscos Flamm Autoig Densit Vapor % VOC Odor T n-octa	g Point: Boiling Point and Boiling Rar Iity in Water: Density: Jar Weight: Jar Weight: Jability (solid, gas): Jability (solid, gas): Jability (solid, gas): Jition Temperature: Y: Pressure:	nge:	Liquid, Light Straw, Cir 1.205 @ 20°C 12.0 @ 20°C, 100.0% -0.4°F N/A Moderate N/D N/D N/D N/D N/A N/A N/A N/A N/A N/A N/D N/D N/D N/D N/D

#### Section 10. Stability and Reactivity

Chemical Stability:	Stable at normal temperatures and pressures.
Incompatibility with Various Substances:	Strong acids, Strong oxidizers, Reducing agents, Organic compounds, Organic solvents, Halogens.
Hazardous Decomposition Products:	Chlorine dioxide gas, Chlorine.
Possibility of Hazardous Reactions:	None known.
Reactivity:	N/D
Conditions To Avoid:	N/D

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Wear appropriate Personal Protective Equipment (PPE) when handling this product. Do not get in eyes, or on skin and clothing. Wash thoroughly after handling. Do not ingest. Avoid breathing vapors, mist or dust.

Store away from incompatible materials (see Section 10). Store at ambient temperatures. Keep container securely closed when not in use. Label precautions also apply to empty container. Recondition or dispose of empty containers in accordance with government regulations. For industrial use only. Do not freeze. Store above Freeze Point. If freezes, then mechanical mixing is required.

ChemTreat CL25D





#### Section 11. Toxicological Information

Chemical Name	Exp	osure	Type of Effect	Concentration	Species
Sodium chlorite		alation	LC50	0.23 MG/L	Rat
	Den		LD50	134 MG/KG	Rabbit
	Ora		LD50	284 MG/KG	Rat
ChemTreat CL25D	N/D		N/D	N/D	N/D
arcinogenicity Category					
Component		Source	Code	Brief Description	
Sodium chlorite		N/E	N/E	N/E	
kely Routes of Exposure:	N/D				
Inhalation:		N/D			
Eye Contact:		N/D			
Skin Contact:		N/D			
Ingestion:		N/D			
kin Corrosion/Irritation:	N/D				
erious Eye Damage/Eye ritation:	N/D				
Sensitization:	N/D				
Germ Cell Mutagenicity:	N/D				
Reproductive/Developmental Foxicity:	N/D				
Specific Target Organ Toxicity					
Single Exposure:		N/D			
Repeated Exposure:		N/D			
Aspiration Hazard:	N/D				

# Section 12. Ecological Information

**ChemTreat** 

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Comments:

Comments:

Species		Duration	Type of Effect	Test Results
Daphnia magna		48h	EC50	<1 mg/l
Mysid Shrimp		96h	LC50	0.65 mg/l
Sheepshead Minnow		96h	LC50	105 mg/l
Ceriodaphnia dubia		48h	LC50	0.392 mg/l
Fathead Minnow		96h	LC50	147.4 mg/l
Persistence and Biodegradability:	N/D			
Bioaccumulative Potential:	N/D			
Mobility In Soil:	N/D			
Other Adverse Effects:	N/D			

#### Based on active ingredient

None.

Section 13. Disposal Considerations

PESTICIDE DISPOSAL: Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance. CONTAINER DISPOSAL: Non-refillable container. Do not reuse or refill this container. Triple rinse or pressure rinse container (or equivalent) promptly after emptying. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by procedures approved by state and local authorities. EPA corrosivity characteristic hazardous waste D002 when disposed of in the original product form.





# Section 14. Transport Information

Controlling Regulation	UN/NA#:	Proper Shipping Name:	Technical N	ame:	Hazard Class:	Packing Group:
DOT	UN1908	CHLORITE SOLUTION, WITH MORE THAN 5% AVAILABLE CHLORINE	N/A		8	PGII
lote:		N/A				
Section 1	5. Regulat	ory Information				
nventory Sta	tus					
	United State Canada (DS				listed or exemp listed or exemp	
Federal Regu	lations					
SARA	Title III Rules	6				
	Sections 31 Classes	1/312 Hazard				
		Fire Hazard: Reactive Hazard: Release of Pressure: Acute Health Hazard: Chronic Health Hazard:			No No Yes Yes	
	Other Section	ons				
	Comp Sodiur	onent n chlorite		Section 313 Toxic Chemical N/A	Section 302 EHS TPQ N/A	CERCLA RQ N/A
	Com	ments:	None.			





ChemTreat CL25D

#### State Regulations

California Proposition 65:	None known.
Special Regulations	
Component	States
Sodium chlorite	MA, NJ, PA
ompliance Information	
NSF:	Certified to NSF/ANSI Standard 60 Maximum use rate for potable water – 28 mg/L This product ships as NSF from: Facility #30 USA Facility #30 USA Facility #34 USA Facility #34 USA
Food Regulations:	N/A
KOSHER:	This product has not been evaluated for Kosher approval.
Halal:	This product has not been evaluated for Halal approval.
FIFRA:	Registered pesticide under 40 CFR 152.10, Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), EPA Registration Number: 9150-7-15300.
Other:	None
omments:	None.

#### Section 16. Other informatio

# HMIS Hazard Rating

Health:	
nealul.	
Flammability:	
Physical Hazard:	
PPE:	
FFE.	

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ChemTreat CL25D





Notes:

The PPE rating depends on circumstances of use. See Section 8 for recommended PPE. The Hazardous Material Information System (HMIS) is a voluntary, subjective alpha-numeric symbolic system for recommending hazard risk and personal protection equipment information. It is a subjective rating system based on the evaluator's understanding of the chemical associated risks. The end-user must determine if the code is appropriate for their use.

#### Abbreviations

Abbreviation	Definition
<	Less Than
>	Greater Than
ACGIH	American Conference of Governmental Industrial Hygienists
EHS	Environmental Health and Safety Dept
N/A	Not Applicable
N/D	Not Determined
N/E	Not Established
OSHA	Occupational Health and Safety Dept
PEL	Personal Exposure Limit
STEL	Short Term Exposure Limit
TLV	Threshold Limit Value
TWA	Time Weight Average
UNK	Unknown
Prepared by:	Product Compliance Department; ProductCompliance@chemtreat.com

Revision Date:

February 7, 2019

#### Disclaimer

Although the information and recommendations set forth herein (hereinafter 'information') are presented in good faith and believed to be correct as of the date hereord. ChemTreat, Inc. makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving manuer with make there one determination as to its subability for the purposes profit to use. In oververt WIChemTreat, the creations the top testing of any nature whatoever resulting from the use or reliance upon information. No representation or warrarities, either expressed or implied, of mechanism is a particular purpose, or of any other relacrituding with respect to the with respect to the with respect to the white mechanism relax. ChemTreat

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# SAFETY DATA SHEET

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1. Identification			
Product identifier	CL4520		
Other means of identification	None.		
Recommended use	Cooling Water Microbiocide		
Recommended restrictions	None known.		
Manufacturer/Importer/Supplier	Distributor information		
Manufacturer			
Company name	ChemTreat, Inc.		
Address	5640 Cox Road Glen Allen, VA 23060		
	United States		
Telephone	800-648-4579		
Website	chemtreat.com		
E-mail	productcompliance@chemtreat.com		
Emergency phone number	800-424-9300		
2. Hazard(s) identification	1		
Physical hazards	Not classified.		
Health hazards	Serious eye damage/eye irritation	Category 2	
Environmental hazards	Not classified.		
OSHA defined hazards	Not classified.		
Label elements			
Circul word	$\mathbf{\mathbf{v}}$		
Signal word	Warning		
Hazard statement	Causes serious eye irritation.		
Precautionary statement			
Prevention	Wash thoroughly after handling. Wear eye pro		
Response	If in eyes: Rinse cautiously with water for several easy to do. Continue rinsing. If eye irritation p		
Storage	Not available.		
Disposal	Not available.		
Hazard(s) not otherwise classified (HNOC)	None known.		
Supplemental information	None.		
3. Composition/informati	on on ingredients		
Mixtures			
Chemical name	Common name and synonyms	CAS number	%
Ammonium sulfate		7783-20-2	20 - < 30
Other components below repor	table levels		80 - < 90
4. First-aid measures			
Inhalation	Move to fresh air. Call a physician if symptom	s develop or persist.	
Skin contact	Wash off with soap and water. Get medical at	tention if irritation develops and	I persists.
Eye contact	Immediately flush eyes with plenty of water for present and easy to do. Continue rinsing. If e	r at least 15 minutes. Remove ye irritation persists: Get medic	contact lenses, if al advice/attention.
Material name: CL4520			SDS US
971 Version #: 01 Issue date: 05-	05-2023		1/6

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Ingestion	Rinse mouth. Get medical attention if symptoms occur.
Most important symptoms/effects, acute and delayed	Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.
5. Fire-fighting measures	
Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	Move containers from fire area if you can do so without risk.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	No unusual fire or explosion hazards noted.
6. Accidental release mea	sures
Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spiil/leak. Wear appropriate protective equipment and dothing during clean-up. Do not buch damaged container or spilled material unless wearing appropriate protective otothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this possible. Absorb in vermiculitie, dry sand or earth and place into containers. Following product recovery, flush area with water.
	Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.
Environmental precautions	Never return spills to original containers for re-use. For waste disposal, see section 13 of the SD Avoid discharge into drains, water courses or onto the ground.
7. Handling and storage	
Precautions for safe handling	Avoid contact with eyes. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities	Store in tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).
8. Exposure controls/pers	onal protection
Occupational exposure limits	This mixture has no ingredients that have PEL, TLV, or other recommended exposure limit.
Biological limit values	No biological exposure limits noted for the ingredient(s).
Appropriate engineering	Good general ventilation should be used. Ventilation rates should be matched to conditions. If
	applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station.
controls	maintain airborne levels below recommended exposure limits. If exposure limits have not been
controls	maintain airborrie levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station. such as personal protective equipment
controls Individual protection measures, Eye/face protection Skin protection Hand protection	maintain airborrie levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station. such as personal protective equipment Wear safety glasses with side shields (or goggles). Wear appropriate chemical resistant gloves.
controls Individual protection measures, Eye/face protection Skin protection	maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station. such as personal protective equipment Wear safety glasses with side shields (or goggles).

physical, chemical and toxicological characteristics	Severe eye i vision.	rritation. Symptoms may include stinging, te	earing, redness, swelling, and blurred
Information on toxicological ef	fects		
Acute toxicity			
Components	Species	т	est Results
Ammonium sulfate (CAS 7783-20	)-2)		
Acute			
Dermal			
LD50	Rat	>	2000 mg/kg
Inhalation			
LC50	Guinea pig	9	00 mg/m3, 8 Hours
Oral			
LD50	Rat	31	000 mg/kg
Skin corrosion/irritation	Prolonged sk	kin contact may cause temporary irritation.	
Serious eye damage/eye rritation	Causes serio	ous eye irritation.	
Respiratory or skin sensitizatio	on		
Respiratory sensitization	Not a respira	tory sensitizer.	
Skin sensitization	This product	is not expected to cause skin sensitization.	
Germ cell mutagenicity	No data avai mutagenic or	lable to indicate product or any components r genotoxic.	s present at greater than 0.1% are
Carcinogenicity	Not classifiat	ble as to carcinogenicity to humans.	
IARC Monographs. Overall	Evaluation of	Carcinogenicity	
Not regulated. US. National Toxicology Pr Not listed.	rogram (NTP) R	Report on Carcinogens	
US. National Toxicology Pr Not listed.	• • •	teport on Carcinogens is not expected to cause reproductive or de	evelopmental effects.
US. National Toxicology Pr Not listed. Reproductive toxicity Specific target organ toxicity -	• • •	is not expected to cause reproductive or de	evelopmental effects.
US. National Toxicology Pr Not listed. Reproductive toxicity Specific target organ toxicity - single exposure Specific target organ toxicity -	This product	is not expected to cause reproductive or de	evelopmental effects.
US. National Toxicology Pr Not listed. Reproductive toxicity Specific target organ toxicity - ingle exposure Specific target organ toxicity - repeated exposure	This product Not classified	is not expected to cause reproductive or de d.	evelopmental effects.
US. National Toxicology Pr Not listed. Reproductive toxicity Specific target organ toxicity - single exposure Specific target organ toxicity - repeated exposure	This product Not classified Not classified Not an aspira	is not expected to cause reproductive or de d.	evelopmental effects.
US. National Toxicology Pr Notlisted. Reproductive toxicity Specific target organ toxicity - specific target organ toxicity - specific target organ toxicity - epeated exposure Aspiration hazard 12. Ecological information	This product Not classified Not classified Not an aspire on The product	is not expected to cause reproductive or de d.	
US. National Toxicology Pr Not listed. Seproductive toxicity Specific target organ toxicity - single exposure Specific target organ toxicity - repeated exposure Aspiration hazard 12. Ecological information	This product Not classified Not classified Not an aspire on The product	is not expected to cause reproductive or de d. d. ation hazard.	
US. National Toxicology Pr Notlisted. Reproductive toxicity Specific target organ toxicity - single exposure Specific target organ toxicity - repeated exposure Aspiration hazard 12. Ecological informatic Ecotoxicity	This product Not classified Not classified Not an aspire on The product	is not expected to cause reproductive or de d. d. ation hazard. is not classified as environmentally hazardo at large or frequent spills can have a harmfu	us. However, this does not exclude the
US. National Toxicology Pr Not tisted. Reproductive toxicity Specific target organ toxicity - ingle exposure Specific target organ toxicity - epeated exposure Separation hazard 12. Ecological informatic Ecotoxicity Product CL4520 Aquatic	This product Not classified Not classified Not an aspire on The product	is not expected to cause reproductive or de d. d. ation hazard. is not classified as environmentally hazardo at large or frequent spills can have a harmfu	us. However, this does not exclude the
US. National Toxicology Pr Not listed. Reproductive toxicity Specific target organ toxicity - ingle exposure Aspiration hazard 12. Ecological informatic Ecotoxicity Product CL4520 Aquatic Acute	This product Not classified Not an aspira Not an aspira The product possibility that	is not expected to cause reproductive or de d. d. ation hazard. is not classified as environmentally hazardo at large or frequent spills can have a harmft <b>Species</b>	bus. However, this does not exclude the I or damaging effect on the environment. Test Results
US. National Toxicology Pr Not tisted. Reproductive toxicity Specific target organ toxicity - ingle exposure Specific target organ toxicity - epeated exposure Separation hazard 12. Ecological informatic Ecotoxicity Product CL4520 Aquatic	This product Not classified Not an aspire <b>on</b> The product possibility that EC50	is not expected to cause reproductive or de d. d. ation hazard. is not classified as environmentally hazard at large or frequent spills can have a harmfu <b>Species</b> Water flea (Ceriodaphnia dubia)	ous. However, this does not exclude the l or damaging effect on the environment. <b>Tost Results</b> > 260 mg/l, 48 hours (Estimated)
US. National Toxicology Pr Not listed. Reproductive toxicity Specific target organ toxicity - ingle exposure Specific target organ toxicity - epeated exposure Separation hazard 12. Ecological informatic Ecotoxicity Product CL4520 Aquatic Acute Crustacea	This product Not classified Not an aspire <b>on</b> The product possibility the EC50 LC50	is not expected to cause reproductive or de d. d. ation hazard. is not classified as environmentally hazardo species Water flea (Ceriodaphnia dubia) Daphnia pulex	<ul> <li>Jow However, this does not exclude the all or damaging effect on the environment.</li> <li>Test Results</li> <li>&gt; 260 mg/l, 48 hours (Estimated)</li> <li>&gt; 100 mg/l, 48 hours (Estimated)</li> </ul>
US. National Toxicology Pr Not listed. Reproductive toxicity Specific target organ toxicity - single exposure Specific target organ toxicity - Aspiration hazard 12. Ecological informatic Ecotoxicity Product CL4520 Aquatic Acute	This product Not classified Not an aspire <b>on</b> The product possibility that EC50	is not expected to cause reproductive or de d. d. ation hazard. is not classified as environmentally hazard at large or frequent spills can have a harmfu <b>Species</b> Water flea (Ceriodaphnia dubia)	<ul> <li>Jow However, this does not exclude the all or damaging effect on the environment.</li> <li>Test Results</li> <li>&gt; 260 mg/l, 48 hours (Estimated)</li> <li>&gt; 100 mg/l, 48 hours (Estimated)</li> </ul>
US. National Toxicology Pr Not listed. Reproductive toxicity Specific target organ toxicity - single exposure Aspiration hazard 12. Ecological informatic Ecotoxicity Product CL4520 Aquatic Acute Crustacea Fish Persistence and degradability	This product Not classified Not an aspire on The product possibility the ECS0 LCS0 LCS0 LCS0 LCS0 LCS0 LCS0	is not expected to cause reproductive or de d. ation hazard. is not classified as environmentally hazardd at large or frequent spills can have a harmfu <b>Species</b> Water flea (Ceriodaphnia dubia) Daphnia pulex Fathead minnow (Pimephales promelas) vallable on the degradability of any ingredie	<ul> <li>However, this does not exclude the l or damaging effect on the environment.</li> <li>Test Results</li> <li>&gt; 260 mg/l, 48 hours (Estimated)</li> <li>&gt; 100 mg/l, 48 hours (Estimated)</li> <li>&gt; 100 mg/l, 96 hours (Estimated)</li> </ul>
US. National Toxicology Pr Not listed. Reproductive toxicity Specific target organ toxicity - single exposure Specific target organ toxicity - Repeated exposure Aspiration hazard 12. Ecological informatic Ecotoxicity Product CL4520 Aquatic Acute Crustacea	This product Not classified Not an aspire on The product product LC50 LC50 LC50 No data is av	is not expected to cause reproductive or de d. d. ation hazard. is not classified as environmentally hazardo at large or frequent spills can have a harmfo Species Water flea (Ceriodaphnia dubia) Daphnia pulex Fathead minnow (Pimephales promelas) valiable on the degradability of any ingredie lable.	<ul> <li>However, this does not exclude the l or damaging effect on the environment.</li> <li>Test Results</li> <li>&gt; 260 mg/l, 48 hours (Estimated)</li> <li>&gt; 100 mg/l, 48 hours (Estimated)</li> <li>&gt; 100 mg/l, 96 hours (Estimated)</li> </ul>
US. National Toxicology Pr Not listed. Reproductive toxicity Specific target organ toxicity - single exposure Specific target organ toxicity - sopriation hazard 12. Ecological informatio Ecotoxicity Product CL4520 Aquatic Acute Crustacea Fish Persistence and degradability	This product Not classified Not an aspire on The product possibility the ECS0 LCS0 LCS0 LCS0 LCS0 LCS0 LCS0 LCS0	is not expected to cause reproductive or de d. d. ation hazard. is not classified as environmentally hazardo at large or frequent spills can have a harmfo Species Water flea (Ceriodaphnia dubia) Daphnia pulex Fathead minnow (Pimephales promelas) valiable on the degradability of any ingredie lable.	<ul> <li>However, this does not exclude the l or damaging effect on the environment.</li> <li>Test Results</li> <li>&gt; 260 mg/l, 48 hours (Estimated)</li> <li>&gt; 100 mg/l, 48 hours (Estimated)</li> <li>&gt; 100 mg/l, 96 hours (Estimated)</li> </ul>

General hygiene considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.
9. Physical and chemical	properties
Appearance	
Physical state	Liquid.
Form	Liquid.
Color	Colorless.
Odor	Mild
Odor threshold	Not available.
pH	5.5 - 7.5 (100% Dilution)
Melting point/freezing point	32.00 °F (0 °C)
Initial boiling point and boiling range	Not available.
Flash point	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or exp	
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	0 - 200 cps
Other information	
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.
Pounds per gallon	9.32
Specific gravity	1.11 - 1.15 @ 20C
10. Stability and reactivity	1
Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.
11. Toxicological informa	tion
Information on likely routes of e Inhalation	xposure No adverse effects due to inhalation are expected.
Skin contact	No adverse effects due to skin contact are expected.
Eye contact	Causes serious eve irritation.
Ingestion	Expected to be a low ingestion hazard.

13. Disposal consideration	IS
Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.
ocal disposal regulations	Dispose in accordance with all applicable regulations.
lazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Vaste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.
14. Transport information	
от	
Not regulated as dangerous go	ods.
ATA	
Not regulated as dangerous go	ods.
MDG	
Not regulated as dangerous go	ods.
	Not established.
Annex II of MARPOL 73/78 and he IBC Code	
15. Regulatory information	
	This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
Toxic Substances Control Ac	:t (TSCA)
() (	ort Notification (40 CFR 707, Subpt. D)
Ammonium sulfate (C/ Toxic Substances Contro E)	AS 7783-20-2) 1.0 % One-Time Export Notification only. ol Act (TSCA) Section 5(a)(2) Final Significant New Use Rules (SNURs) (40 CFR 721, Subpt
Ammonium sulfate (C/	AS 7783-20-2) 721.11253
CERCLA Hazardous Substan	
Not listed.	
SARA 304 Emergency release	e notification
Not regulated.	
OSHA Specifically Regulated Not regulated.	Substances (29 CFR 1910.1001-1053)
Superfund Amendments and Rea SARA 302 Extremely hazardo	
Not listed.	
chemical	Yes
categories	Serious eye damage or eye irritation
SARA 313 (TRI reporting) Not regulated.	
Other federal regulations	
Clean Air Act (CAA) Section	112 Hazardous Air Pollutants (HAPs) List
Not regulated. Clean Air Act (CAA) Section 1	112(r) Accidental Release Prevention (40 CFR 68.130)

US state regulations California Proposition 65 California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins. For more information go to www.P65Warnings.ca.gov.

International Inventories		
Country(s) or region	Inventory name	On inventory (yes/no)'
Australia	Australian Inventory of Industrial Chemicals (AICIS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Ye
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	Ye
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Ye
	nents of this product comply with the inventory requirements administered by the go components of the product are not listed or exempt from listing on the inventory as	
ompliance Information: Biocid	e Regulation	
Registered pesticide und Number: 15300-30.	er 40 CFR 152.10, Federal Insecticide, Fungicide and Rodenticide Act (FI	FRA), EPA Registration
16. Other information, inc	luding date of preparation or last revision	
ssue date	05-05-2023	
/ersion #	01	
HMIS® ratings	Health: 1	

HMIS® ratings	Heatth: 1 Flammability: 0 Physical hazard: 0 Personal protection: B
Disclaimer	ChemTreat, Inc. cannot anticipate all conditions under which this information and its product, or the products of other manifacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper user. The information in the sheet was written based on the best knowledge and experience currently available. Although the information and recommendations set for the herein (hereinafter "information") are presented in good faith and believed to be correct as of the date hereof. ChemTreat, Inc. makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for their purposes prior to use. In no event will ChemTreat, Inc. be responsible for damages of any nature whatsoever resulting from the use or reliance upon information. No representation or warranties, either expressed or implied, of merchanability, fitness for a particular purpose, or of any other nature are made hereunder with respect to information or the product to which information refers.
Other information	Prepared by: Product Compliance Department: ProductCompliance@chemtreat.com

Other information Prepared by: Product Compliance Department; ProductCompliance@chemtreat.com

Mate	rial name: CL45	20	SDS US
971	Version #: 01	Issue date: 05-05-2023	6 / 6

Section 2. Hazards	identification	
Disposal	: Dispose of contents and container in accordance with all local, regional, national and international regulations.	
Supplemental label elements	: Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials and food and drink.	

# Section 3. Composition/information on ingredients

Substance/mixture : Mixture		
Ingredient name	%	CAS number
Sodium chlorate Hydrogen Peroxide	40 - 50 ≤10	7775-09-9 7722-84-1
Any concentration shows as a range is to protect a	onfidentiality as is due to betably aristian	

Any concentration shown as a range is to protect confidentiality or is due to batch variation. There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health and hence require reporting in this section. Occupational exposure limits, if available, are listed in Section 8.

#### Section 4. First aid measures

Description of first aid	measures
Eye contact	: Get medical attention immediately. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. In case of contact with eyes, flush eyes with plenty of water for at least 30 minutes. Chemical burns must be treated promptly by a physician.
Inhalation	: Get medical attention immediately. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If unconscious, place in recovery position and get medical attention immediately. Maintai an open airway. Loosen tight clothing such as a collar, lie, belt or waistband. If not breathing, if breathing is forgune by a fragment or respiratory arrest occurs, provide artifical respirator, or xoygen by a trained professional, using a pocket type respirator.
Skin contact	In case of contact, flush skin with plenty of water for at least 30 minutes. Get medical attention immediately. Rinse immediately contaminated clothing and skin with plenty of water. Immediately remove contaminated dothing and shoes. Wash contaminated clothing throughly with water before removing it, or ware gloves. Wash clothing before reuse. Clean shoes throughly before reuse.
Ingestion	: Get medical attention immediately. Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink Do not induce vormiting unless directed to do so by medical personnel. If vormiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
Potential acute health	
Eye contact	: Causes serious eye damage.
Inhalation	: Toxic if inhaled. Causes damage to organs following a single exposure if inhaled. May give off gas, vapor or dust that is very irritating or corrosive to the respiratory system.
Skin contact	: Causes severe burns.
Ingestion	: Harmful if swallowed. May cause burns to mouth, throat and stomach.

# **IC SAFETY DATA SHEET**

A design of 1952 We design	
Section 1. Identif	
Product identifier	: PurDOX™ BCD
Material Number	: 201801251
Identified uses	: Industrial use
Supplier/Manufacturer	: International Dioxcide, Inc.
	40 Whitecap Drive
	North Kingstown, RI 02852
	For Information: (800) 477-6071
	International: +1 (401) 295-8800
In case of emergency	: CHEMTREC (800) 424 9300 International (703) 527 3887
	International (103) 321 3001
Section 2. Hazard	s identification
HAZCOM Standard Status	: This material is considered hazardous by the OSHA Hazard Communication Standard
Physical state	(29 CFR 1910.1200). : Liquid.
Color	Clear. to Light Blue.
Classification of the	: OXIDIZING LIQUIDS - Category 2
substance or mixture	ACUTE TOXICITY (oral) - Category 4
	ACUTE TOXICITY (inhalation) - Category 3
	SKIN CORROSION - Category 1 SERIOUS EYE DAMAGE - Category 1
	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (digestive system and
	respiratory tract) (inhalation) - Category 1
Hazard pictograms	
Signal word Hazard statements	: Danger May interprify first avidizer. Taxis if inheled, Harmful if availated. Causes severe skin
Hazaro statements	: May intensify fire; oxidizer. Toxic if inhaled. Harmful if swallowed. Causes severe skin burns and eye damage. Causes damage to organs if inhaled. (digestive system,
	respiratory tract)
Hazard Not Otherwise	: None known.
Classified (HNOC)	
Precautionary statements	
Prevention	: Wear protective gloves/clothing and eye/face protection. Keep away from heat No
	smoking. Keep away from clothing, incompatible materials and combustible materials.
	Take any precaution to avoid mixing with combustibles and other incompatible materials.
	Use only in a well-ventilated area. Do not breathe vapor. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling.
Response	: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for
licopolico	breathing. IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or
	hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
	Wash contaminated clothing before reuse. IF IN EYES: Rinse cautiously with water for
	several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.
Storage	: Store locked up.
	·

PurDOX™ BCD

20180125 Version 1

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Section 4. First aid	i measures
Eye contact	<ul> <li>Corrosive with symptoms of reddening, tearing, swelling, burning and possible permanent damage.</li> </ul>
Inhalation	: No specific data.
Skin contact	: Corrosive with symptoms of reddening, itching, swelling, burning and possible permanent damage.
Ingestion	<ul> <li>Corrosive with symptoms of coughing, burning, ulceration, and pain.</li> <li>Symptoms of ingestion may include abdominal pain, nausea, vomiting, and diarrhea.</li> </ul>
Potential chronic health eff No known significant effects	
Notes to physician Protection of first-aiders See toxicological informatio	: Treat symptomatically. No specific treatment. : If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparentus. Wash contaminated clothing thoroughly with water before removing it, or weargloves. n (Section 11)
Section 5. Fire-figl	
Extinguishing media Suitable extinguishing	
media	: Can only be extinguished with large quantities of water.
Unsuitable extinguishing	
media	: Do not use dry chemical or foam.
Specific hazards arising from the chemical	: Oxidizing material. May intensify fire. In a fire or if heated, a pressure increase will occur and the container may burst. Toxic and irritating gases/fumes may be given off during burning or thermal decomposition. Water runoff from fire fighting may be corrosive.
Hazardous thermal decomposition products	: Decomposition products may include the following materials: halogenated compounds metal oxide/oxides
Special protective actions for fire-fighters	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
Special protective equipment for fire-fighters	: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
Section 6. Accider	ntal release measures
Personal precautions, protective equipment and emergency procedures	: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through splilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
Environmental precautions	: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and severs. Inform the relevant authorities if the product has caused environmental pollution (severs, waterways, soil orair).

#### Section 6. Accidental release measures Section 8. Exposure controls/personal protection Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. A NIOSH approved air purifying respirator with organic vapor cartridges and particulate prefitter can be used to minimize exposure. Permeation resistant clothing and foot protection. Permeation resistant glotwes. chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead. If contact with product is possible, wear safety glasses with side shields. Not available. Methods and materials for Stop leak if without risk. Move containers from spill area. Use spark-proof tools and Respiratory protection containment and cleaning up explosion-proof equipment. Approach release from upwind. Do not absorb in sawdust or other combustible material. It may lead to a fire risk when it dries out. Wash or other combustible material. It may lead to a tire nsk when it dires out. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, verniculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal. Prevent entry into sewers, water courses, basements or confined areas. Skin protection Eye/face protection Medical Surveillance Not available Section 9. Physical and chemical properties Section 7. Handling and storage Liquid. Clear. to Light Blue. Not available. Not available. Physical state Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate venillation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Keep away from float. Empty containers retain product residue and can be hazardous. Do not reuse container. Remove contaminated clothing and protective equipment before entering eating areas. Workers should wash hands and face before eating, drinking and smoking. Put on appropriate personal protection equipment. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Separate from reducing agents and combustible materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. Empty containers thetain product residue and can be hazardous. Do not reuse container: See NFPA 430. Code for the Storage of Liquid and Solid Oxidizers. Precautions for safe h Color Protective measures Odor Odor threshold 4.5 to 5 pН Boiling point Melting point Not available Not available Closed cup: Not applicable. Not available. Flash point Evaporation rate Conditions for safe storage **Explosion limits** Not available Vapor pressure Density Not available 1.38 g/cm3 Specific gravity (Relative 1.38 density) Solubility in water Partition coefficient: n-octanol/water Not available. Not available Section 8. Exposure controls/personal protection Vapor density Not available Occupational exposure limits Not available Not available Viscosity Ingredient name Exposure limits Auto-ignition temperature Sodium chlorate Hydrogen Peroxide None ACGIH TLV (United States, 3/2016). TWA: 1 ppm 8 hours. TWA: 1.4 mg/m<sup>3</sup> 8 hours. OSHA PEL (United States, 6/2016). TWA: 1 ppm 8 hours. TWA: 1.4 mg/m<sup>3</sup> 8 hours. Decomposition temperature : Not available Section 10. Stability and reactivity No specific test data related to reactivity available for this product or its ingredients. Reactivity Chemical stability The product is stable Possibility of hazardous Hazardous reactions or instability may occur under certain conditions of storage or use. reactions Conditions may include the following: contact with combustible materials : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants belowany recommended or statutory limits. Appropriate engineering controls Reactions may include the following: Reactions may include the following: risk of causing or intensifying fire 2 Drying on clothing or other combustible materials may cause fire. 2 Reactive or incompatible with the following materials: combustible materials reducing materials 2 Inder normal conditions of storage and use, hazardous decomposition products should not be produced. Conditions to avoid Incompatible materials Personal protection Hygiene measures Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated inthing. Wash contaminated dofting before reusing. Ensure that eyewash stations and safety showers are close to the workstation location. Hazardous decomposition products

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nformation on the likely outes of exposure Potential acute health effects		act. Eye contact	. Inhalation. Ingesti	on.	
Eye contact Inhalation	: Causes serio : Toxic if inhale give off gas.	ed. Causes dar		owing a single expo or corrosive to the r	osure if inhaled. May espiratory system.
Skin contact	: Causes seve	re burns.	, ,		
Ingestion symptoms related to the phy			ause burns to mou		ach.
Eye contact		h symptoms of	reddening, tearing,		nd possible
Inhalation	: No specific d				
Skin contact	: Corrosive with permanent d		eddening, itching, s	welling, burning ar	d possible
Ingestion	: Corrosive wit	h symptoms of	coughing, burning, include abdominal		
otential chronic health effe	cts				
Short term exposure					
Potential immediate effects	: Not available				
Long term exposure					
Potential delayed effects General Carcinogenicity Mutagenicity Teratogenicity	No known sig	gnificant effects	or critical hazards. or critical hazards. or critical hazards.		
	No known sig	nificant effects	or critical hazards.		
Developmental effects Fertility effects nformation on toxicological	: No known sig		or critical hazards. or critical hazards.		
Acute toxicity					
Product/ingredient name	Result	Species	Dose	Exposure	Test
Sodium chlorate	LD50 Oral	Rat	1200 mg/kg	-	-
Hydrogen Peroxide	LD50 Oral	Rat	>500 mg/kg	-	-
Hydrogen Peroxide	LD50 Dermal	Rat	4060 mg/kg	-	-
Sodium chlorate	LC50	Rat	>7 mg/l	4 hours	-
Hydrogen Peroxide	Inhalation Vapor LC50 Inhalation Vapor	Rat	>0.17 mg/l *	4 hours	-
Conclusion/Summary		naximalen Sätti	alative LC50 (Ratte gungskonzentratior		

Product/ingredient	Result		Species	Score	Exposure	Observation	Reversibilit	
Sodium chlorate	Eyes - Mild irritant		Mammal - species unspecified	-	-	-	-	
Conclusion/Summary Skin	: Hydroge	en Peroxide:sli	ghtly irritant					
Eyes				serious eye irritation. ere irritant, Risk of serious damage to eyes.				
Respiratory	: Hydroge	en Peroxide:M	ay cause resp	piratory irrit	ation.			
<u>Sensitization</u> Skin Carcinogenicity	: Hydroge	en Peroxide:No	ot sensitizing					
Product/ingredient nam	e	CAS #	IARC		NTP	OSHA		
Sodium chlorate Hydrogen Peroxide		7722-84-1		assified. assified.	Not classified Not classified			
Specific target organ to:	cicity (single e	exposure)						
Name			Categ	jory	Route of exposure	Target	organs	
PurDOX™ BCD			Categ	ory 1	Inhalation		e system piratory trac	
Sodium chlorate			Categ	ory 3	Not applicabl		itory tract	
Acute toxicity estimates								
Route				ATE	value (Acute T	oxicity Estir	nates)	
Oral					.2 mg/kg			
Dermal				4640	0 mg/kg			

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## Section 12. Ecological information

Product/ingredient name	Test	Result	Species	Exposure
Hydrogen Peroxide	-	Acute EC50 1.38 mg/l (growth	Algae -	72 hours
		rate)	Skeletonema	
	-	Acute EC50 2.4 mg/l	Daphnia - Daphnia magna	48 hours
	-	Acute LC50 16.4 mg/l	Fish - Pimephales promelas	96 hours
	-	Chronic NOEC 0.63 mg/l (growth rate)	Algae - Skeletonema costatum	72 hours
	-	Chronic NOEC 0.63 mg/l	Daphnia - Daphnia magna	21 days

Persistence and degradability

1

1

5/10

### Section 12. Ecological information

: Not available

Product/ingredient name Hydrogen Peroxide	Aquatic half-life -	Photolysis -	Biodegradability Readily
Bioaccumulative potential			
Product/ingredient name	LogPow	BCF	Potential
Hydrogen Peroxide	-1.1	-	low

Soil/water partition coefficient (Koc) Other adverse effects

: No known significant effects or critical hazards.

### Section 13. Disposal considerations

Disposal methods	The generation of waste should be avoided or minimized wherever possible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or insed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Waste disposal should be in accordance with existing federal state, provincial and or local environmental controls laws.
RCRA classification	<ul> <li>: When discarded in its purchased form, this product meets the criteria of ignitability, and should be managed as a hazardous waste (EPA Hazardous Waste Number D001).</li> </ul>

and should be managed as a nazardous waste (EFA nazardous waste wutneer bour), (40 CFR 261.20-24) Under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product, should be classified as a hazardous waste. (40 CFR 261.20-24)

# Section 14. Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
DOT Classification	UN3139	Oxidizing liquid, n.o.s. (SODIUM CHLORATE, HYDROGEN PEROXIDE)	5.1	11	٢	62, 127, 148, A2, IB2
IMDG Class	UN3139	OXIDIZING LIQUID, N.O.S. (SODIUM CHLORATE, HYDROGEN PEROXIDE)	5.1	11		Emergency schedules (EmS) F-A, S-Q
IATA-DGR Class	UN3139	Oxidizing liquid, n.o.s. (SODIUM CHLORATE, HYDROGEN PEROXIDE)	5.1	11		Passenger aircraft 550: 1 L Cargo aircraft 554: 5 L

PG\* : Packing group

KQ	<ul> <li>0 lbs</li> </ul>				
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#### Section 16. Other information

C Our method of hazard communication is comprised of Product Labels and Safety Data Sheets. HMIS and NFPA ratings are provided as a customer service. Reprinted with permission from NFPA 704-2001, identification of the Hazards of Materials for Emergency Response Copyright C1997, National Fire Protection Association, Quincy, MA 02269. This reprinted material is not the complete and official position of the National Fire Protection Association, on the referenced subject which is represented only by the standard in its entirety.

Date of issue	: 01-25-2018
Date of previous issue	: 08-03-2017
Version	: 1

Product Safety and Regulatory Affairs
 Indicates information that has changed from previously issued version.

Notice to reader This information is furnished without warranty, express or implied. This information is believed to be accurate to the best knowledge of International Dioxcide, Inc.. The information in this SDS relates only to the specific material designated herein. International Dioxcide, Inc. assumes no legal responsibility for use of or reliance upon the information in this SDS.

# Section 15. Regulatory information

SARA 311/312	: Fire hazard Immediate (acute) health hazard Ingredient name
SARA Title III Section 302 Extremely Hazardous Substances	: Hydrogen Peroxide
SARA Title III Section 313 Toxic Chemicals	: None
US EPA CERCLA Hazardous Subtances (40 CFR 302.4) State regulations	: None

The following chemicals are specifically listed by individual states; other product specific health and safety data in other sections on the SDS may also be applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.

Ingredient name	CAS number	State Code	Concentration
-			(%)
Sodium chlorate	7775-09-9	MA - S, NJ - HS, PA - RTK HS	25 - 50
Hydrogen Peroxide	7722-84-1	MA - S, NJ - HS, PA - RTK HS	≤10
Water	7732-18-5		50 - 75
Massachusetts Substances: MA - S			

Massachusetts Extraordinary Hazardous Substances: MA - Extra HS New Jersey Hazardous Substances: NJ - HS Pennsylvania RTK Hazardous Substances: PA - RTK HS

Pennsylvania Special Hazardous Substances: PA - Special HS

Ha Inf

California Prop. 65
To the best of our knowledge, this product does not contain any of the listed chemicals, which the state of California has
found to cause cancer, birth defects or other reproductive harm.
U.S. Toxic Substances
Listed on the TSCA Inventory.
Control Act

azardous Material formation System	Health	4
	Flammability	0
	Physical hazards	1
	0=Insignificant 1=Slight 2=M	odera

rate 3=High 4=Extreme

U=Insignmcant 1=Signt Z=Moderate 3=Hign 4=Extreme \*=Chronic The customer is responsible for determining the PPE code for this material. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

National Fire Protection Association (U.S.A.)



0= Minimal 1=Slight 2=Moderate 3=Serious 4=Severe

PurDOX™ BCD

20180125 Version 1 Concentration (%)

CAS number 7722-84-1



Safety Data Sheet (SDS) Sulfuric Acid Solution 78%

#### Revision Date: 5/13/2015

	Section 1: Identification	
Product Name:	Sulfuric Acid Solution 78%	
Synonyms:	Sulfuric Acid	
Product Use Description:	Various	
Manufacturer/Supplier:	ChemQuest Chemicals	
	9730 Bay Area Blvd.	
	Pasadena, Texas 77507	
Telephone:	(281) 291 - 9966	
Emergency Contact	(800) 424 - 9300 CHEMTREC	
Number:		

Classifications:	Metal corrosion H290 Fatal if swallowed H300 Harmful if swallowed H302 Skin corrosion H314 Harmful if inhaled H332
Pictograms:	
Signal Word:	Danger; Warning
Hazard Statements:	H290 – May be corrosive to metals H300 – Fatal if swallowed H302 – Harmful if swallowed H314 – Causes severe skin burns and eye damage H332 – Harmful if inhaled
Precautionary Statements:	P234 – Keep in original container. P260 – Do not breathe mist, spray, and vapors.

P390 – Absorb spillage to prevent material damage. P403+P233 – Store in a well-ventilated place. Keep container tightly closed. P405 – Store locked up.
P405 – Store locked up. P406 – Store in corrosive resistant containers with a resistant inner liner.
P501 – Dispose of contents/container to comply with local, state and federal regulations.
inner liner. P501 – Dispose of contents/container to comply with local, state

Section 3: Composition/Information on Ingredients				
Chemical characteriza	tion: Mixture	Substances?		
Component	CAS – No.	Weight %	GHS-US Classification	
Sulfuric Acid	7664-93-9	78%	H290 – May be corrosive to metals	
			H300 – Fatal if swallowed	
			H302 – Harmful if swallowed	
			H314 – Causes severe skin burns and eye damage	
			H332 – Harmful if inhaled	
		Section 4: First	t-Aid Measures	
Inhalation:		Move patient 1	to obtain fresh air. Allow the victim to rest. Remove	
		to fresh air and	d keep at rest in a position comfortable for	
		breathing, Imn	nediately call a POISON CENTER or	
		physician/doct	or.	
Skin Contact:		Remove/Take off immediately all contaminated clothing. Rinse		
			r/shower. Immediately call a POISON CENTER or	
		doctor/physici		
Eye Contact:			ly with water for several minutes. Remove contact	
Lye contact.			ent and easy to do. Continue rinsing. Immediately	
			CENTER or doctor/physician.	
Ingestion:			DO NOT induce vomiting. If victim is conscious and	
ingestion:			capfuls of milk or water. Never give anything by	
			nconscious person. Immediately call a POISON	
		CENTER or doo		
Information for doct	or:		should be based on observed signs and symptoms	
			n by the patient. Monitor arterial blood gases,	
			d pulmonary function tests if respiratory tract	
			spiratory depression is evident. Treat dermal	
			rns with the standard topical therapy. Do NOT use	
			pnate in an attempt to neutralize the acid.	
Most important sym			skin burns and eye damage. May cause	
effects, both acute a	nd delayed:		al burns with nausea, vomiting and diarrhea.	
			result in inflammation and edema of the lungs,	
		larynx, and bro	onchi.	
	5	ection 5: Fire-F	ighting Measures	
Suitable extinguishin	g agents:	For small fires	use dry chemical or carbon dioxide (CO <sub>2</sub> ). Do NOT	
			ire. Expect violent reaction with water. For large	
			a with water from A DISTANCE. Do NOT get solid	
			er on spilled material.	
Special hazards arisir	ng		netals may evolve into flammable hydrogen gas. Do	

2

From substance or mixture:	NOT get water inside containers. Reacts violently with water and
	organic materials with evolution of heat and sulfur dioxide.
	Oxidising material contributes to combustion of other materials.
Recommendations for	Cool the fire exposed containers/tanks with water spray (Do NOT
firefighters:	get water inside containers). Wear self-contained breathing
in engineers.	apparatus (NIOSH-approved) and full protective equipment (eye,
	body, and respiratory). Prevent spillage form entering drains or
	waterways.
Protective equipment:	Wear OSHA standard goggles or face shield. Wear self-contained
	breathing apparatus (NIOSH-approved) if necessary. Wear
	gloves, apron, and footwear impervious to this material.
	0
S	ection 6: Accidental Release Measures
Personal precautions:	Wear full face shield. Goggles. Rubber Gloves. Cartridge Mask.
	Rubber Boots. Slicker Suit.
Emergency procedures:	Shut off or remove all ignition sources. Evacuate unnecessary
	personnel. Ventilate area.
Environmental precautions:	Prevent entry to sewers and public water. Notify the authorities in
	liquid enters sewers or public waters.
Methods for cleaning up:	Dike the flow of spilled material and absorb spills with absorbent
	vermiculite or sand and place in suitable containers for later
	disposal. Neutralize with soda ash or lime.
	Section 7: Handling and Storage
Precautions for safe handling:	Wash hands and other exposed areas with mild soap and water
recoulding for sale nationing.	before eating, drinking or smoking and when leaving work.
	Provide proper ventilation. Do not ingest. Do not breathe
	gas/fumes/vapor/spray. Do not add water to this product add
	acid to water slowly. Avoid contact with skin or eyes. Wear
	proper protective equipment when handling this material (See
	Section 8).
Conditions for safe storage.	Store in a cool, dry, well ventilated place, in a securely closed
	container that is corrosive proof. Do not store near combustible
Including incompatibilities:	

Section 8: Exposure Controls/Personal Protection

Exposure Guidelines List Components OSHA (PEL) Sulfuric Acid ACGIH (TLV) Sulfuric Acid Sulfuric Acid NIOSH (REL) Sulfuric Acid Sulfuric Acid CAS-NO. 7664-93-9 7664-93-9 7664-93-9 7664-93-9 7664-93-9 Value 1 mg/m<sup>3</sup> 1 mg/m<sup>3</sup> 3 mg/m<sup>3</sup> 1 mg/m<sup>3</sup> 15 mg/m<sup>3</sup> Type TWA TWA STEL TWA

4

Engineering measures:	Local exhaust ventilation should be provided at the site of chemical release. Emergency showers and eye wash stations should be readily accessible. Wash hands at the end of each work
	shift and before eating, smoking or using the toilet. Launder or discard contaminated clothing.
Eye protection:	Impact resistant eye protection with side shields, goggles or face shield
Hand protection:	Rubber gloves
Skin and body protection:	Slicker suit and rubber boots
Respiratory protection:	Filter or cartridge respirator (NIOSH Approved)
Work/Hygiene practices:	Do not eat, drink or smoke during use,

3

Appearance	
Form:	Liquid
Color:	Colorless
Odor:	Odorless
Odor Threshold:	Not available
pH:	1.0
Change in condition	
Melting point:	-4.4°C (24°F)
Boiling point:	109.5°C (229.1°F)
Flash point:	Not combustible
Evaporation rate:	Not available
Flammability (solid, gaseous):	Not flammable
Ignition temperature:	Not available
Decomposition temperature:	Not available
Auto igniting:	Not available
Danger of explosion:	Not available
Explosion limits	Not available
Lower:	
Upper:	
Vapor pressure @ 20°C (68°F):	Not available
Specific Gravity @ 25°C (77°F):	1.71
Density @ 20°C (68°F):	14.26
Solubility in/Miscibility with	Miscible
Water :	
Partition coefficient	Not available
(n-octanol/water)	
Viscosity:	Not available

Section 10: Stability and Reactivity		
Reactivity:		
Chemical stability:	Stable under normal conditions.	
Possibility of hazardous reactions:	Sulfuric acid in contact with metal surfaces can generate flammable and explosive hydrogen gas. A fire risk can arise on contact with organic materials and chemicals such as nitrates, carbides, and chlorates.	
Conditions to avoid:	Incompatible materials and excess heat. Do NOT add water to acid make sure to add acid to water slowly.	
Hazardous decomposition dioxide:	Sulfur oxides may form when heated.	
Incompatible materials:	Avoid contact with different organics, chlorates, carbides, fulminates, picrates, metals. Material reacts violently (exothermically) with water.	

Section 11: Toxicological Information

Information on Toxicological effect	s		
Acute Toxicity:			
LD/LC50			1
Oral LD50 (Rat) – Sulfuric Acid		2140 mg/kg	_
Inhalation LC50 (Rat) – Sulfuric Ac	id	510 mg/m <sup>3</sup> /2H	
Irritant effects			
Skin:		irritation, burning, itching, a	
Eye:	Causes severe vapor.	irritation and damage from	direct exposure or
Respiratory:		ion to the mucous membran	es.
Ingestion:	Can cause bur	ns to the mouth, throat, eso	phagus, and stomach.
Specific target organ toxicity	Eves, skin, mo	uth, and digestive system.	
(single exposure):	,	,	
Specific target organ toxicity	Eyes, skin, mo	uth, and digestive system. W	orkers that are
(repeated exposure):	chronically exposed to sulfuric acid mists may show various		
	lesions of the	skin, tracheobronchitis, storr	atitis, conjunctivitis, or
	gastritis.		
Aspiration hazard:			
Symptoms/injuries after	Causes burns	of the respiratory tract. Inhal	ation of mists may
inhalation:	become fatal	as a result of inflammation a	nd edema of the lungs,
	larynx, and br	onchi.	
Symptoms/injuries after	Causes severe gastrointestinal tract burns, nausea, vomiting, and		
ingestion:	diarrhea. May	cause perforation of the gas	trointestinal tract or
	peritonitis and		
Symptoms/injuries after eye		burns, irritation, irreversible	eye damage, and
contact:	possible blind	ness.	

6

IARC (International Agency for Research on Cancer) NTP(national Toxicity Program)	Occupational exposure to strong inorganic acid mists containing sulfuric acid causes cancer. Listed as a carcinogen. Occupational exposure to strong inorganic acid mists containing sulfuric acid causes cancer. Listed as a carcinogen.
	Section 12: Ecological Information
Aquatic Toxicity: Persistence and degradability: Bioaccumulative potential: PBT and vPvB assessment PBT: vPvB: vPvB: Mobility in soil: Other adverse effects:	Extremely toxic to all forms of aquatic life
	Section 13: Disposal Considerations
Waste treatment methods Recommendation:	Consult the local, state, and federal regulatory agencies for the acceptable disposal procedures and correct disposal locations.
Uncleaned packaging's Recommendation:	
Recommendation.	
	Section 14: Transport Information
US DOT	Section 14: Transport Information
	Section 14: Transport Information
US DOT	
US DOT UN Nurber: UN proper shipping name: Transport Hazard class(es):	UN1830 Sulfuric Acid Class 8 – Corrosive substances
US DOT UN Number: UN proper shipping name: Transport Hazard class(es): Packing group number:	UN1830 Sulfuric Acid
US DOT UN Number: UN proper shipping name: Transport Hazard class(es): Packing group number: TDG	UN1830 Sulfuric Acid Class 8 – Corrosive substances II
US DOT UN Number: UN proper shipping name: Transport Hazard class(es): Packing group number: TDG UN Number:	UN1830 Sulfuric Acid Class 8 – Corrosive substances II UN1830
US DOT UN Number: UN proper shipping name: Transport Hazard class(es): Packing group number: TDG UN Number: UN proper shipping name:	UN1830 Sulfuric Acid Class 8 – Corrosive substances II UN1830 Sulfuric Acid
US DOT UN Number: UN proper shipping name: Transport Hazard class(es): Packing group number: TDG UN Number: UN proper shipping name: Transport Hazard class(es):	UN1830 Sulfuric Acid Class 8 – Corrosive substances II UN1830 Sulfuric Acid Class 8 – Corrosive substances
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US DOT UN Number: UN proper shipping name: Transport Hazard class(es): Packing group number: TDG UN Number: UN proper shipping name: Transport Hazard class(es): Packing group number: IATA/ICAO	UN1830 Sulfuric Acid Class 8 – Corrosive substances II UN1830 Sulfuric Acid Class 8 – Corrosive substances II
US DOT UN Number: UN proper shipping name: Transport Hazard class(es): Packing group number: TDG UN Number: UN proper shipping name: Transport Hazard class(es): Packing group number:	UN1830 Sulfuric Acid Class 8 – Corrosive substances II UN1830 Sulfuric Acid Class 8 – Corrosive substances

Packing group number:	II
IMDG	
UN Number:	UN1830
UN proper shipping name:	Sulfuric Acid
Transport Hazard class(es):	Class 8 – Corrosive substances
Packing group number:	II.
Environmental hazards:	None
Special precaution for user:	Warning! Corrosive
Transport in bulk (according to	Not available
Annex II of MARPOL 73/78 and	
IBC code):	
UN "Model Regulation"	UN1830, Sulfuric Acid Solution, 8, II
Reportable Quantity	1000 lbs
	Section 15: Regulatory Information

Safety, health and environmental regulations/legislation specific for the substance or mixture

State/International Right to Know Regulations California: Not Listed Connecticut: Survey Florida: Toxic substances RTK Illinois: Toxic, Chem Louisiana: RTK, Spill RQ-1,000 lbs Massachusetts: RTK; EHS, 1 PPM Threshold, Spill RQ = 50 lbs Mew Jersey: ID# 1761, RTK, Special Hazard; Corrosive, Reactive; Tax New York: Spill: Air RQ-1,000 lbs, L/W RQ = 100 lbs Pennsylvania: RTK, ENV. Rhode Island: RTK, HAZ. Codes: Flammable, Toxic Canada: List, 1%, No. 1485 EPA SARA Title III Section 302 Extremely Hazardous Substance Yes

EPA SARA Title III Section 311, 312 (40CFR370) Hazard Class Acute Health Hazard

EPA SARA Title III Section 313 (40CFR372) Toxic Chemicals above "De Minimis" Level Are This material contains Sulfuric Acid which is subject to the reporting requirements of section 313 of SARA Title III.

Toxic Substance Control Act This material is listed in the TSCA Inventory.

Clean Air Act – Hazardous Air Pollutants (HAPs) None of the components are on this list Clean Air Act – Class 1 Ozone Depletors None of the components are on this list

Carcinogonic Catogorio

Clean Air Act – Class 1 Ozone Depletors None of the components are on this list

Clean Water Act – Hazardous Substances CAS# 7664-93-9 is listed as a Hazardous Substance under the CWA

Clean Water Act – Priority Pollutants None of the components are on this list

Clean Water Act – Toxic Pollutants None of the components are on this list

#### CERCLA/SUPERFUND, 40 CFR 117.302

RQ = 1000 lbs/2270 kg

# Section 16: Other Information

9

Indication of changes: Other Information: 07/01/2014









# SAFETY DATA SHEET

ation 1. Chamical Product and Co Se dontificatio

Section 1. Chemical Product and Company Identification				Remove/take off immediately all contaminated cloth
Product Name: Product Use: Supplier's Name: Emergency Telephon Address (Corporate H Telephone Number fo Date of SDS: Revision Date: Revision Number:	leadquarters):	ChemTreat CT775 Cooling Water Treatment Corrosion Inhibitor ChemTreat, Inc. (800)424–9300 (Toll Free) 5640 Cox Road Glen Allen, VA 23060 (800)648–4579 June 17, 2020 June 17, 2020 20061701AN	Storage:	P304 + P340 IF INHALED: Remove person to fresl air and keep comfortable for breathing P305 + P351 + P338 IF IN EVES: Rinse cautiously with water for several minutes. Remove lenses, if present and easy to do. Continue rinsing, P310 Immediately call a POISON CENTER/doctor, P363 Wash contaminated clothing before reuse. P390 Absorb spillage to prevent material damage. P405 Store locked up. P406 Store in a corrosive resistant container with a resistant inner liner. P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
Section 2. Hazard(s)	DANGER		Disposal:	P501 Dispose of contents and container in accorda with applicable local, regional, national, and/or international regulations.
GHS Classification(s):	ssification(s): Skin corrosion/irritation - Category 1b		System of Classification Used:	Classification under 2012 OSHA Hazard Communication S (29 CFR 1910.1200).
	Eye damage/irritation – Category 1 Acute Toxicity Oral – Category 4 Specific Target Organ Toxicity – Single Exposure – Category 3 Corrosive to Metals – Category 1		Hazards Not Otherwise Classified:	None.
Hazard Statement(s):	H318 Causes serious eye damage. H302 Harmful if swallowed. H290 May be corrosive to metals.		Section 3. Composition/	Hazardous Ingredients
	H335 May cause	e respiratory irritation.	Component Phosphoric acid	CAS Registry # Wt% 7664-38-2 60 - 100
Precautionary Statement(s):			L	
Prevention:	P264 Wa P270 Do P271 Us P280 Wa protectio P234 Ke P261 Av	not breathe dust/fume/gas/mist/vapors/spray. ash thoroughly after handling. not eat, drink, or smoke when using this product. e only outdoors or in a well-ventilated area. as protective gloves/protective clothing/eye n/face protection. e only in original container. oid breathing dust/fume/gas/mist/vapors/spray. e only outdoors or in a well-ventilated area.	Comments	If chemical identity and/or exact percentage of composition withheld, this information is considered to be a trade secre

20061701AN 06/17/20

ChemTreat CT775

**ChemTreat** 



# Section 4. First Aid Measures

Inhalation:	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a poison center or doctor/physician.
Eyes:	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor/physician.
Skin:	Immediately remove/take off all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before re-use. Immediately call a poison center or doctor/physician.
Ingestion:	DO NOT INDUCE VOMITING. Rinse mouth. Call a POISON CENTER or doctor/physician.
Most Important Symptoms:	N/D
Indication of Immediate Medical Attention and Special Treatment Needed, If Necessary:	N/A

Page 1 of 10

# Section 5. Fire Fighting Measures

Flammability of the Product:	Not flammable.
Suitable Extinguishing Media:	Use extinguishing media suitable to surrounding fire.
Specific Hazards Arising from the Chemical:	Use water spray to keep containers cool.
Protective Equipment:	If product is involved in a fire, wear full protective clothing including a positive-pressure, NIOSH approved, self-contained breathing apparatus.

Response:	P301 + P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell P301 + 330 + 331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. P303 + P361 + P353 IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing P305 + P351 + P338 IF IN EVES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P310 Immediately call a POISON CENTER/doctor. P363 Wash contaminated clothing before reuse. P390 Absorb spillage to prevent material damage.
Storage:	P405 Store locked up. P406 Store in a corrosive resistant container with a resistant inner liner. P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
Disposal:	P501 Dispose of contents and container in accordance with applicable local, regional, national, and/or international regulations.
System of Classification Used:	Classification under 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).
Hazards Not Otherwise	None

Component	CAS Registry #	Wt.%
Phosphoric acid	7664-38-2	60 - 100
Comments	y and/or exact percenta rmation is considered to	

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# Section 6. Accidental Release Measures

Personal Precautions:	Use appropriate Personal Protective Equipment (PPE).	
Environmental Precautions:	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains, and sewers.	
Methods for Cleaning up:	Contain and recover liquid when possible. Flush spill area with water spray.	
Other Statements:	If RQ (Reportable Quantity) is exceeded, report to National Spill Response Office at 1-800-424-8802. Reportable Quantity of the product is 506 Gal.	
	Reportable quantity of the product is 500 Gal.	
Section 7. Handling and	<b>Storage</b> Wear appropriate Personal Protective Equipment (PPE) when	
	Storage	

#### Section 8. Exposure Controls/Personal Protection

#### Exposure Limits

Component		Source	Exposure Limits
Phosphoric acid		ACGIH TLV	3 mg/m <sup>3</sup> STEL
		OSHA PEL	1 mg/m <sup>3</sup> TWA
Engineering Controls:			uate ventilation. The use of local ventilation is

Use only with adequate ventilation. The use of local ventilation is recommended to control emission near the source.









#### Personal Protection

Eyes:	Wear chemical splash goggles or safety glasses with full–face shield. Maintain eyewash fountain in work area.
Skin:	Maintain quick-drench facilities in work area. Wear butyl rubber or neoprene gloves. Wash them after each use and replace as necessary. If conditions warrant, wear protective clothing such as boots, aprons, and coveralls to prevent skin contact.
Respiratory:	If misting occurs, use NIOSH approved organic vapor/acid gas dual cartridge respirator with a dust/mist prefilter in accordance with 29 CFR 1910.134.

#### Section 9. Physical and Chemical Properties

Physical State and Appearance: Specific Gravity: pH: Freezing Point: Flash Point: Odor: Initial Boiling Point and Boiling Range: Solubility in Water: Evaporation Rate: Vapor Density: Molecular Weight: Viscosity: Flammability (solid, gas): Flammability (solid, gas): Flammability (solid, gas): Flammability (solid, gas): Flammability (solid, gas): Composition Temperature: Density: Vapor Pressure: % VOC: Odor Threshold n-octanol Partition Coefficient Decomposition Temperature	Liquid, Colorless, Clear 1.579 @ 20°C <1.0 @ 20°C, 100.0% 0°F N/D Mild N/A N/D Miscible <1 N/D N/D N/D N/D N/A N/A N/A N/A N/A N/A N/A N/A
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# Section 10. Stability and Reactivity

Chemical Stability:	Stable at normal temperatures and pressures.
Incompatibility with Various Substances:	Strong oxidizers, Bases, Fluorine, Reducing agents, Sulfur trioxide, Phosphorus pentoxide.
Hazardous Decomposition Products:	Oxides of phosphorus.
Possibility of Hazardous Reactions:	None known.
Reactivity:	N/D
Conditions To Avoid:	N/D

# Section 11. Toxicological Information

Chemical Name	Expo	osure	Type of Effect	Concentration	Species
Phosphoric acid	Derm	nal	LD50	2740 MG/KG	Rabbit
	Oral		LD50	1530 MG/KG	Rat
Carcinogenicity Category					
calcinogenicity category					
Component		Source	Code	Brief Description	
Phosphoric acid		N/E	N/E	N/E	
Likely Routes of Exposure:	N/D				
Symptoms					
Inhalation:		N/D			
innalation.		IN/D			
Eye Contact:		N/D			
Skin Contact:		N/D			
Ingestion:		N/D			
	NUD				
Skin Corrosion/Irritation:	N/D				

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Serious Eye Damage/Eye Irritation:

Germ Cell Mutagenicity:

Reproductive/Developmental Toxicity:

Specific Target Organ Toxicity

Single Exposure:

Repeated Exposure:

Sensitization:





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# Section 13. Disposal Considerations

Dispose of in accordance with local, state and federal regulations. EPA corrosivity characteristic hazardous waste D002 when disposed of in the original product form.

### Section 14. Transport Information

Controlling					Packing
Regulation	UN/NA#:	Proper Shipping Name:	Technical Name:	Hazard Class:	Group:
DOT	UN1805	PHOSPHORIC ACID SOLUTION	N/A	8	PGIII
Over 506 GA	RQ UN1805	PHOSPHORIC ACID SOLUTION	N/A	8	PGIII
IMDG	UN1805	PHOSPHORIC ACID SOLUTION	N/A	8	PGIII
TDG	UN1805	PHOSPHORIC ACID SOLUTION	N/A	8	PGIII
ICAO	UN1805	PHOSPHORIC ACID SOLUTION	N/A	8	PGIII

# Section 15. Regulatory Information

Inventory Status					
	ted States (TSCA): aada (DSL/NDSL):	All ingredients listed. All ingredients listed.			
Federal Regulatio	ns				
SARA Title	SARA Title III Rules				
	tions 311/312 Hazard sses				
	Fire Hazard: Reactive Hazard: Release of Pressure: Acute Health Hazard: Chronic Health Hazard:	No No Yes No			

# Section 12. Ecological Information

N/D

N/D

N/D

N/D

N/D

None.

N/D

N/D

# Ecotoxicity

Comments:

Aspiration Hazard:

Species		Duration	Type of Effect	Test Results
Ceriodaphnia dubia		48h	LC50	1649 mg/l
Fathead Minnow		96h	LC50	3536 mg/l
Mysid Shrimp		48h	LC50	884 mg/l
Inland Silverside		96h	LC50	3491 mg/l
Persistence and Biodegradability:	N/D			
Bioaccumulative Potential:	N/D			
Mobility In Soil:	N/D			
Other Adverse Effects:	N/D			
Comments:	None.			



State Regulations

Compliance Information

NSE:

Other Sections

California Proposition 65:

sphoric ac

Special Regulations Component Phosphoric aci

Food Regulations:

KOSHER:

Halal:

FIFRA:

Other<sup>.</sup>

Comments:

Component Phosphoric acid Comments:



CERCLA RQ

Section 313 Toxic Chemical

This product has not been evaluated for Kosher approval.

This product has not been evaluated for Halal approval.

None

States MA, MN, NY, WA

Certified to NSF/ANSI Standard 60 Maximum use rate for potable water This product ships as NSF from: Ashland, VA Eldridge, IA Nederland, TX Facility #32 USA

None known.

N/A

N/A

None

None

Section TPQ

– 13 mg/L





Notes:

The PPE rating depends on circumstances of use. See Section 8 for recommended PPE. The Hazardous Material Information System (HMIS) is a voluntary, subjective apha-numeric symbolic system for recommending hazard risk and personal protection equipment information. It is a subjective rating system based on the evaluator's understanding of the chemical associated risks. The end-user must determine if the code is appropriate for their use their use.

# Abbreviations

Abbreviation	Definition	
<	Less Than	
>	Greater Than	
ACGIH	American Conference of Governmental Industrial Hygienists	
EHS	Environmental Health and Safety Dept	
N/A	Not Applicable	
N/D	Not Determined	
N/E	Not Established	
OSHA	Occupational Health and Safety Dept	
PEL	Personal Exposure Limit	
STEL	Short Term Exposure Limit	
TLV	Threshold Limit Value	
TWA	Time Weight Average	
UNK	Unknown	
Prepared by:	Product Compliance Department; ProductCompliance@chemtreat.com	

Revision Date:

June 17, 2020

# Disclaimer

rect as of the dat nd faith and b ed to be are pre same will make nature whatsoer a particular pure their own determination as to its ver resulting from the use or reliai suitability for their purposes pr nce upon information. No repre reat, Inc. be responsible for damages of any pressed or implied, of merchantability, fitness for will Cl

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HMIS Hazard Rating		
	Health: Flammability: Physical Hazard: PPE:	

Section 16. Other Information

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**ChemTreat** 

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# SAFETY DATA SHEET

Section 1. Chemical Product and Company Identification

Product Name: Product Use:	ChemTreat P817E Water Clarification/Solids Conditioning Agent
Supplier's Name: Emergency Telephone Number: Address (Corporate Headquarters):	ChemTreat, Inc. (800)424–9300 (Toll Free) 5640 Cox Road Glen Allen, VA 23060
Telephone Number for Information: Date of SDS: Revision Date: Revision Number:	(800)648–4579 March 26, 2019 March 26, 2019 19032601AN

# Section 2. Hazard(s) Identification

Signal Word:	None
GHS Classification(s):	Non-Hazardous Substance
Hazard Statement(s):	Non-Hazardous Substance
Precautionary Statement(s):	No significant health risks are expected from exposures under normal conditions of use.
Prevention:	None.
Response:	None.
Storage:	None.
Disposal:	None.
System of Classification Used:	Classification under 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).
Hazards Not Otherwise Classified:	None.

# **ChemTreat**

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# Section 3. Composition/Hazardous Ingredients

Component		CAS Registry #	Wt.%
Components not listed are either non hazardous or in concentration of less than 1%		N/A	N/A
Comments	If chemical identit withheld, this info	y and/or exact percentage of com rmation is considered to be a trad	position has been e secret.

#### Section 4. First Aid Measures

Inhalation:	Call a POISON CENTER or doctor/physician if you feel unwell.
Eyes:	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice/attention.
Skin:	Call a poison center or doctor/physician if you feel unwell.
Ingestion:	Rinse mouth. Call a poison center or doctor/physician if you feel unwell.
Most Important Symptoms:	N/D
Indication of Immediate Medical Attention and Special Treatment Needed, If Necessary:	N/A

#### Section 5. Fire Fighting Measures

Flammability of the Product:	Not flammable.
Suitable Extinguishing Media:	Use extinguishing media suitable to surrounding fire.
Specific Hazards Arising from the Chemical:	Product becomes slippery when wet.
Protective Equipment:	If product is involved in a fire, wear full protective clothing including a positive-pressure, NIOSH approved, self-contained breathing apparatus.

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Personal Precautions: Environmental Precautions:

Methods for Cleaning up: Other Statements:

Handling:

Storage:

Exposure Limits Component

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oncentration of less than 1% Engineering Controls:

Section 7. Handling and Storage

Section 6. Accidental Release Measures

None.

is unusable.

Source

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Section 8. Exposure Controls/Personal Protection

Use appropriate Personal Protective Equipment (PPE).

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains, and sewers.

Contain and recover liquid when possible. Flush spill area with water spray.

Wear appropriate Personal Protective Equipment (PPE) when handling this product. Do not get in eyes, or on skin and clothing. Wash thoroughly after handling. Do not ingest. Avoid breathing vapors, mist or dust. Material is very slippery if spilled.

Store away from incompatible materials (see Section 10). Store at ambient temperatures. Keep container securely closed when not in use. Label precations also apply to empty container. Recondition or dispose of empty containers in accordance with government regulations. For Industrial use only. Do not store below 41°F. Do not store above 86°F. Do not freeze. Store above Freeze Point. If freezes, then product is unusable

Exposure Limits

Use only with adequate ventilation. The use of local ventilation is recommended to control emission near the source.







Personal Protection Eyes:

Skin:

Safety glasses are recommended if risk of eye contact.

Wear butyl rubber or neoprene gloves. Wash them after each use and replace as necessary. If conditions warrant, wear protective clothing such as boots, aprons, and coveralls to prevent skin contact.

If misting occurs, use NIOSH approved organic vapor/acid gas dual cartridge respirator with a dust/mist prefilter in accordance with 29 CFR 1910.134.

Respiratory:

#### Section 9. Physical and Chemical Properties

Physical State and Appearance: Specific Gravity: pH: Freezing Point: Flash Point: Odor: Melting Point: Initial Boiling Point and Boiling Range: Solubility in Water: Evaporation Rate: Vapor Density: Molecular Weight: Viscosity: Flammability (solid, gas): Flammabile Limits: Autoignition Temperature: Density: Vapor Pressure: % VOC: Odor Threshold	Liquid Emulsion, White, Opaque 1.072 @ 20°C 6.0 - 8.0 @ 20°C, 100.0% 32°F N/D N/A N/D Complete N/D N/D N/D N/D N/A N/D N/A N/A N/A N/A N/A N/A N/A N/A
n-octanol Partition Coefficient Decomposition Temperature	N/D N/D
Decomposition remperature	

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# Section 10. Stability and Reactivity

Chemical Stability:	Stable at normal temperatures and pressures.
Incompatibility with Various Substances:	Strong oxidizers.
Hazardous Decomposition Products:	Oxides of carbon, Oxides of nitrogen.
Possibility of Hazardous Reactions:	None known.
Reactivity:	N/D
Conditions To Avoid:	N/D

## Section 11. Toxicological Information

Chemical Name	Expo	sure	Type of Effect	Concentration	Species
ChemTreat P817E	Oral		LD50	>5000 MG/KG	Rat
	Derm	nal	LD50	>5000 MG/KG	Rat
Carcinogenicity Category					
Component		Source	Code	Brief Description	
Components not listed are either non hazardous or in		N/E	N/E	N/E	
concentration of less than 1%					
Likely Routes of Exposure:	N/D				
	N/D				
		N/D			
Symptoms		N/D N/D			
Symptoms Inhalation:		=			
Symptoms Inhalation: Eye Contact:		N/D			

# Section 12. Ecological Information

Ecotoxicity

Species	Duration	Type of Effect	Test Results
Algae	72h	IC50	>100 mg/l
Daphnia magna	48h	EC50	>100 mg/l
Mysid Shrimp	48h	LC50	6.8 mg/l
Inland Silverside	96h	LC50	320 mg/l
Ceriodaphnia dubia	48h	LC50	0.58 mg/l
Fathead Minnow	96h	LC50	104 mg/l
	48h	LC50	287 mg/l
Daphnia pulex	48h	LC50	0.21 mg/l

Persistence and Biodegradability:

Bioaccumulative Potential:	N/D
Mobility In Soil:	N/D
Other Adverse Effects:	N/D

N/D

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Serious Eye Damage/Eye Irritation:	N/D
Sensitization:	N/D
Germ Cell Mutagenicity:	N/D
Reproductive/Developmental Toxicity:	N/D
Specific Target Organ Toxicity	
Single Exposure:	

Reproductive/Developmental Toxicity:	N/D
Specific Target Organ Toxicity	
Single Exposure:	
Repeated Exposure:	

Single Exposure:	N/D
Repeated Exposure:	N/D
Aspiration Hazard:	N/D
Comments:	None.









Water clarification polymers function by multipoint adsorption and charge neutralization with suspended solids. Polymers inherently migrate with solids in the separation process and with the exception of uneconomic overdose do not remain in the clarified waters. Aquatic toxicity determinations in test method protocol waters without suspended solids overestimate the toxicity compared to natural receiving waters. Comments Federal Regulations SARA Title III Rules Sections 311/312 Hazard Classes Fire Hazard: No Reactive Hazard: Release of Pressure: Acute Health Hazard: Chronic Health Hazard: No No No No Section 13. Disposal Considerations Dispose of in accordance with local, state and federal regulations. Not a RCRA-regulated hazardous waste when disposed in the original product form. Other Sections action 313 Section 302 FHS Component Components not listed are either non hazardous or concentration of less than 1% TPQ CERCLA RO Section 14. Transport Information Comments: None Controlling Packing Regulation UN/NA#: Proper Shipping Name: COMPOUND, INDUSTRIAL Technical Nan lazard Clas Group: State Regulations N/A WATER TREATMENT, LIQUID COMPOUND, INDUSTRIAL WARNING: This product can expose you to chemicals including Acrylamide, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov. California Proposition 65: IMDG N/A WATER TREATMENT, LIQUID COMPOUND, INDUSTRIAL ICAO WATER TREATMENT, LIQUID COMPOUND, INDUSTRIAL TDG Special Regulations WATER TREATMENT, LIQUID Note: N/A Component Components not listed are either non hazardous or in States None. concentration of less than 1% Section 15. Regulatory Information Compliance Information Certified to NSE/ANSI Standard 60 NSE: Inventory Status Maximum use rate for potable water – 3 mg/L Facility #6 USA United States (TSCA): Canada (DSL/NDSL): All ingredients listed FDA: Complies with 21 CFR 176.170 and 21 CFR 176.180 for use in paper and paperboard which contacts food. All ingredients listed. Food Regulations: KOSHER: This product has not been evaluated for Kosher approval Halal: This product has not been evaluated for Halal approval. FIFRA: N/A 501AN 03/26/19 Page 7 of 10 ChemTreat P817E 19032601AN 03/26/19 Page 8 of 10 ChemTreat P817E **ChèmTreat ChemTreat** Other: None Comments: None. Disclaimer tion and recommendations set forth herein (hereinafter Inc. makes no representations as to the completeness own determination as to its suitability for their purpose soulting from the use or reliance upon information. No r or of any other nature are made hereunder with respec "information") are presented in good faith and believed to be correct as of the date r accuracy thereof. Information is supplied upon the condition that the persons rec prior to use. In overwit will Chem Treat, inc. be responsible for damages of any presentation or warranties, either expressed or implied, of merchantability, fitness to information or the orduct to which information refere Section 16. Other Information ages of any HMIS Hazard Rating Health: 0 Flammability: Physical Hazard: PPE: 1 0 X The PPE rating depends on circumstances of use. See Section 8 for recommended PPE. The Hazardous Material Information System (HMIS) is a voluntary, subjective alpha-numeric symbolic system for recommending hazard risk and personal protection equipment information. It is a subjective rating system based on the evaluator's understanding of the chemical associated risks. The end-user must determine if the code is appropriate for their use. Notes:

Abbreviations

Abbreviation	Definition
<	Less Than
>	Greater Than
ACGIH	American Conference of Governmental Industrial Hygienists
EHS	Environmental Health and Safety Dept
N/A	Not Applicable
N/D	Not Determined
N/E	Not Established
OSHA	Occupational Health and Safety Dept
PEL	Personal Exposure Limit
STEL	Short Term Exposure Limit
TLV	Threshold Limit Value
TWA	Time Weight Average
UNK	Unknown

Prepared by: Revision Date:

Product Compliance Department; ProductCompliance@chemtreat.com March 26, 2019









# SAFETY DATA SHEET

Section 1. Chemical Product and Company Identification

Product Name:	ChemTreat P835E
Product Use:	Water Clarification/Solids Conditioning
	Agent
Supplier's Name:	ChemTreat, Inc.
Emergency Telephone Number:	(800)424-9300 (Toll Free)
Address (Corporate Headquarters):	5640 Cox Road
	Glen Allen, VA 23060
Telephone Number for Information:	(800)648-4579
Date of SDS:	February 7, 2019
Revision Date:	February 7, 2019
Revision Number:	19020701AN

# Section 2. Hazard(s) Identification

Signal Word:	None	
GHS Classification(s):	Non-Hazardous Substance	
Hazard Statement(s):	Non-Hazardous Substance	
Precautionary Statement(s):	No significant health risks are expected from exposures under normal conditions of use.	
Prevention:	None.	
Response:	None.	
Storage:	None.	
Disposal:	None.	
System of Classification Used:	Classification under 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).	
Hazards Not Otherwise Classified:	None.	

# Section 3. Composition/Hazardous Ingredients

Component		CAS Registry #	Wt.%		
Components not listed are either non hazardous or in concentration of less than 1%		N/A	N/A		
Comments		If chemical identity and/or exact percentage of composition has been withheld, this information is considered to be a trade secret.			
Section 4. First Aid Mea	isures				
Inhalation:	Call a POISON (	CENTER or doctor/physi	ician if you feel unwell.		
Eyes:	lenses, if presen	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice/attention.			
Skin:	Call a poison cer	Call a poison center or doctor/physician if you feel unwell.			
Ingestion:	Rinse mouth. Ca unwell.	Rinse mouth. Call a poison center or doctor/physician if you feel unwell.			
Most Important Symptoms:	N/D	N/D			
Indication of Immediate Medical Attention and Special Treatment Needed, If Necessary:	N/A				
Section 5. Fire Fighting	Measures				
Flammability of the Product:	Not flammable.				
	Use extinguishing media suitable to surrounding fire.				

· · · · · · · · · · · · · · · · · · ·	
Suitable Extinguishing Media:	Use extinguishing media suitable to surrounding fire.
Specific Hazards Arising from the Chemical:	Use water spray to keep containers cool.
Protective Equipment:	If product is involved in a fire, wear full protective clothing including a positive-pressure, NIOSH approved, self-contained breathing apparatus.

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# Section 6. Accidental Release Measures

Personal Precautions:	Use appropriate Personal Protective Equipment (PPE).
Environmental Precautions:	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains, and sewers.
Methods for Cleaning up:	Contain and/or absorb spill with inert material then place in suitable container. Material is very slippery if spilled.
Other Statements:	None.

# Section 7. Handling and Storage

Handling:	Wear appropriate Personal Protective Equipment (PPE) when handling this product. Do not get in eyes, or on skin and clothing. Wash thoroughly after handling. Do not ingest. Avoid breathing vapors, mist or dust.
Storage:	Store away from incompatible materials (see Section 10). Store at ambient temperatures. Keep container securely closed when not in use. Label precautions also apply to empty container. Recondition or dispose of empty containers in accordance with government regulations. For Industrial use only. Protect from heat and sources of ignition. Do not freeze. Store above Freeze Point. If freezes, then product is unusable.

#### Section 8. Exposure Controls/Personal Protection

Exposure Limits			
Component		Source	Exposure Limits
Components not listed are either non hazardous or in		N/E	N/E
concentration of less than 1%			
Engineering Controls: Use only with adequate ventilation. The use of local ventilation is recommended to control emission near the source.			





ChemTreat P835E

## Personal Protection Eyes:

Skin:

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Safety glasses are recommended if risk of eye contact.

None needed under normal conditions of use.

Wear PVC or other plastic material gloves. Wash them after each use and replace as necessary. If conditions warrant, wear protective clothing such as boots, aprons, and coveralls to prevent skin contact.

Respiratory:

# Section 9. Physical and Chemical Properties

Physical State and Appearance: Specific Gravity: pH: Freezing Point: Flash Point: Odor: Melting Point: Initial Boiling Point and Boiling Range: Solubility in Water: Evaporation Rate: Vapor Density: Molecular Weight: Viscosity: Flammability (solid, gas): Flammability (solid, gas): Glor Threshold	Liquid Emulsion, White, Opaque 1.044 @ 20°C 3.4 @ 20°C, 100.0% 32°F >200°F Mild N/A N/D Appreciable N/A Similar to water N/D N/A N/D N/A N/A N/A N/A N/A N/A N/A N/A
n–octanol Partition Coefficient Decomposition Temperature	N/D N/D

#### Section 10. Stability and Reactivity

Chem	ical Stability:
	patibility with Various ances:
Hazar	dous Decomposition

Stable at normal temperatures and pressures. Oxidizers.

Products:

Oxides of carbon, Oxides of nitrogen, Hydrogen chloride, Hydrogen cyanide, Ammonia.









Possibility of Hazardous Reactions:	None known.
Reactivity:	N/D
Conditions To Avoid:	N/D

# Section 11. Toxicological Information

Acute Toxicity				
Chemical Name	Exposure	Type of Effect	Concentration	Species
ChemTreat P835E	Oral	LD50	>5000 MG/KG	Rat
	Dermal	LD50	>5000 MG/KG	Rat

# Carcinogenicity Category

Component		Source	Code	Brief Description
Components not listed are either non hazardous or in concentration of less than 1%		N/E	N/E	N/E
Likely Routes of Exposure:	N/D			
Symptoms				
Inhalation:		N/D		
Eye Contact:		N/D		
Skin Contact:		N/D		
Ingestion:		N/D		
Skin Corrosion/Irritation:	N/D			
Serious Eye Damage/Eye Irritation:	N/D			
Sensitization:	N/D			
Germ Cell Mutagenicity:	N/D			
Reproductive/Developmental Toxicity:	N/D			

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Specific Target Organ Toxicity	
Single Exposure:	
Repeated Exposure:	
Aspiration Hazard:	N/D

None.

N/D

# Section 12. Ecological Information

Ecotoxicity

Comments:

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Comments:

Species	Duration	Type of Effect	Test Results
Ceriodaphnia dubia	48h	LC50	1.233 mg/l
Sheepshead Minnow	96h	LC50	117.5 mg/l
Mysid Shrimp	48h	LC50	33.2 mg/l
Fathead Minnow	96h	LC50	5.815 mg/l
	48h	LC50	3.4 mg/l
Daphnia pulex	48h	LC50	1.3 mg/l

N/D N/D

# Persistence and Biodegradability:

• •	
Bioaccumulative Potential:	N/D
Mobility In Soil:	N/D
Other Adverse Effects:	N/D

Water clarification polymers function by multipoint adsorption and charge neutralization with suspended solids. Polymers inherently migrate with solids in the separation process and with the exception of uneconomic overdose do not remain in the clarified waters. Aquatic toxicity determinations in test method protocol waters without suspended solids overestimate the toxicity compared to natural receiving waters.

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ChemTreat P835E

**ChemTreat** 





Dispose of in accordance with local, state and federal regulations. Not a RCRA-regulated hazardous waste when disposed in the original product form.

Section 14. Transport Information

Controlling Regulation	UN/NA#:	Proper Shipping Name:	Technical Name:	Hazard Class:	Packing Group:
DOT	N/A	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	N/A	N/A
IMDG	N/A	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	N/A	N/A
ICAO	N/A	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	N/A	N/A
TDG	N/A	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	N/A	N/A
Note:		N/A		·	

Note:

#### Section 15. Regulatory Information

Inventory Status

United States (TSCA): Canada (DSL/NDSL):

All ingredients listed. All ingredients listed.





ChemTreat P835E

Federal Regulations

SARA Title III Rules

Sections 311/312 Hazard Classes	
Fire Hazard:	No
Reactive Hazard:	No
Release of Pressure:	No
Acute Health Hazard:	No
Chronic Health Hazard:	No

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Other Sections

	Section 313	Section 302 EHS	
Component	Toxic Chemica	TPQ	CERCLA RQ
Components not listed are either non hazardous or in	N/A	N/A	N/A
concentration of less than 1%			

This product contains chemical(s) known to the State of California to cause cancer and/or to cause birth defects or other reproductive harm: residual acrylamide.

State Regulations

California Proposition 65:

Special Regulations		
Component		States
Components not listed are either nor concentration of less than 1%	hazardous or in	None.
Compliance Information		
NSF:	Certified to NSF/A Maximum use rate This product ships Facility #6 USA	e for potable water - 3 mg/L
Food Regulations:	N/A	
KOSHER:	This product has r	not been evaluated for Kosher approval.
Halal:	This product has r	not been evaluated for Halal approval.
FIFRA:	N/A	
Other:	None	



#### Comments:

Section 16. Other Information

None

HMIS Hazard Rating

Health: Flammability: Physical Hazard: PPE:

Notes:

The PPE rating depends on circumstances of use. See Section 8 for recommended PPE. The Hazardous Material Information System (HMIS) is a voluntary, subjective alpha-numeric symbolic system for recommending hazard risk and personal protection equipment information. It is a subjective rating system based on the evaluator's understanding of the chemical associated risks. The end-user must determine if the code is appropriate for their use.

#### Abbreviations

Abbreviation	Definition
<	Less Than
>	Greater Than
ACGIH	American Conference of Governmental Industrial Hygienists
EHS	Environmental Health and Safety Dept
N/A	Not Applicable
N/D	Not Determined
N/E	Not Established
OSHA	Occupational Health and Safety Dept
PEL	Personal Exposure Limit
STEL	Short Term Exposure Limit
TLV	Threshold Limit Value
TWA	Time Weight Average
UNK	Unknown

Prepared by: Revision Date:

701AN 02/07/19

Product Compliance Department; ProductCompliance@chemtreat.com February 7, 2019

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#### Disclaimer

Although be information and recommendations as forth have in hereinable "information") are presented in good faith and believed to be correct as of the data hereof. Chemitras, line, makes on expresentations as to be completeness or accuracy tensor (information is supplied up to the constitution that the person receiving same will make their corn determination as to its subability for their purposes prior to use. In no event will Chemitras, line, be reportable for damages of any approximation of the supplied of the suppli

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Supplemental information

ChemTreat P835E

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30% of the mixture consists of component(s) of unknown acute dermal toxicity. 30% of the mixture consists of component(s) of unknown acute inhalation toxicity. 30% of the mixture consists of component(s) of unknown acute hazards to the aquatic environment. 30% of the mixture consists of component(s) of unknown long-term hazards to the aquatic environment.

ChemTreat P835E

ChemTreat	SAFETY DATA SHE	ET C-SERIES
1. Identification		
Product identifier	BL124	
Other means of identification		
Product code	RL124	
Recommended use	Boiler Water Treatment	
Recommended restrictions	None known.	
Manufacturer/Importer/Supplier	/Distributor information	
Manufacturer		
Company name	ChemTreat	
Address	5640 Cox Road	
	Glen Allen, VA 23060	
	United States	
Telephone	800-648-4579	
E-mail	Not available.	
Emergency phone number	800-424-9300	
2. Hazard(s) identification	n	
Physical hazards	Corrosive to metals	Category 1
Health hazards	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 1
	Sensitization, respiratory	Category 1
	Sensitization, skin	Category 1
Environmental hazards	Hazardous to the aquatic environment, acute hazard	Category 3
	Hazardous to the aquatic environment, long-term hazard	Category 3
OSHA defined hazards	Not classified.	
Label elements		
	$\vee$ $\vee$	
Signal word	Danger	
Hazard statement		tion. May cause an allergic skin reaction. Causes thma symptoms or breathing difficulties if inhaled. with long lasting effects.
Precautionary statement		
Prevention	Contaminated work clothing must not be allow	g mist/vapors. Wash thoroughly after handling. ed out of the workplace. Avoid release to the tion. Wear protective gloves. In case of inadequate
Response	and keep comfortable for breathing. If in eyes: Remove contact lenses, if present and easy to	d: If breathing is difficult, remove person to fresh a Rinse cautiously with water for several minutes. o do. Continue rinsing. Immediately call a poison 3et medical advice/attention. Take off contaminate lage to prevent material damage.
Storage	Store in corrosive resistant container with a re	sistant inner liner.
Disposal	Dispose of contents/container in accordance v	vith local/regional/national/international regulations
Hazard(s) not otherwise classified (HNOC)	None known.	

3. Composition/information on ingredients Mixtures Chemical name Common name and synonyms CAS number % 25 - < 40 dium bisulfite 7631-90-5 70 - < 80 Other components below reportable levels 4. First-aid measures If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If experiencing respiratory symptoms: Call a poison center or dotor/physician. Remove contaminated dothing immediately and wash skin with scap and water. In case of eczema or other skin disorders: Seek medical attention and take along these instructions. Wash contaminated dothing before reuse. Inhalation Skin contact Containmated closing vector redue. Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately. Rinse mouth. Get medical attention if symptoms occur. Eye contact Ingestion Most important symptoms/effects, acute and delayed Severe eye intation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Difficulty in breathing. Skin irritation. May cause redness and pain. May cause an allergic skin reaction. Dermatitis. Rash Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed. Indication of immediate medical attention and special treatment needed General information Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Wash contaminated clothing before reuse. 5. Fire-fighting measures Suitable extinguishing media Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2). Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire. Specific hazards arising from During fire, gases hazardous to health may be formed. the chemical Special protective equipment and precautions for firefighters Self-contained breathing apparatus and full protective clothing must be worn in case of fire. Fire fighting equipment/instructions Move containers from fire area if you can do so without risk. Specific methods Use standard firefighting procedures and consider the hazards of other involved materials 6. Accidental release measures Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Avoid breathing mist/vapors. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS. Personal precautions, protective equipment and emergency procedures Methods and materials for Prevent entry into waterways, sewer, basements or confined areas containment and cleaning up Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb spillage to prevent material damage. Use a non-combustible material like vermiculite, said or earth to seak up the product and place into a container for later disposal. Following product recovery, flush area with water. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. Material name: BL124

Material name: BL124 RL124 Version #: 01 Issue date: 07-13-2022

Environmental precautions		orm appropriate managerial or supervisory personnel of all ner leakage or spillage if safe to do so. Avoid discharge into und.		
7. Handling and storage				
Precautions for safe handling	skin, and clothing. Avoid prolonged e			
Conditions for safe storage, including any incompatibilities	Store in a cool, dry place out of direct sunlight. Store in corrosive resistant nornainer with a resistant inner liner. Store in lightly closed container. Keep only in the original container. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).			
8. Exposure controls/pers	sonal protection			
	the only constituents of the product wi ents have no known exposure limits.	nich have a PEL, TLV or other recommended exposure limit.		
US. ACGIH Threshold Limit Components		Value		
Sodium bisulfite (CAS 7631-90-5)	TWA	5 mg/m3		
US. NIOSH: Pocket Guide to Components	Chemical Hazards Type	Value		
Sodium bisulfite (CAS 7631-90-5)	TWA	5 mg/m3		
Biological limit values	No biological exposure limits noted for	• • • • • • • • • • • • • • • • • • • •		
Appropriate engineering controls	Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain aitome levels below recommended exposure limits. If exposure limits have not been established, maintain aitome levels to an acceptable level. General ventilation normally adequate. Provide evewash station and safety shower.			
ndividual protection measures, Eye/face protection	such as personal protective equipm Chemical respirator with organic vap			
Skin protection Hand protection	Wear appropriate chemical resistant	gloves.		
Other	Wear appropriate chemical resistant	clothing.		
Respiratory protection	Chemical respirator with organic vap	Chemical respirator with organic vapor cartridge and full facepiece.		
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.			
General hygiene considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.			
9. Physical and chemical	properties			
Appearance	Clear			
Physical state	Liquid.			
Form	Liquid. Liquid			
Color	Yellow			
Ddor	Strong			
Odor threshold	Not available.			
H	3.9 @ 100%			
Allenting point/freezing point	30.20 °F (-1.00 °C)			
nitial boiling point and boiling range	Not available.			
Flash point	Not available.			
Evaporation rate	Not available.			
Material name: BI 124		SDS US		
RL124 Version #: 01 Issue date: 0	07-13-2022	3/9		

Components Sodium bisulfite (CAS 7631-90-5) Test Results Species Acute Oral LD50 Rat 2 g/kg Causes skin irritation. Causes serious eye damage. Skin corrosion/irritation Serious eye damage/eye irritation irritation
Respiratory or skin sensitization
Respiratory sensitization
May cause allergy or asthma symptoms or breathing difficulties if inhaled. Skin sensitization May cause an allergic skin reaction. No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic. Germ cell mutagenicity Carcinogenicity Not classifiable as to carcinogenicity to humans. IARC Monographs. Overall Evaluation of Carcinogenicity Sodium bisulfite (CAS 7631-90-5) 3 Not classifiable as to carcinogenicity to humans. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053) Not regulated. US. National Toxicology Program (NTP) Report on Carcinogens Not listed. Reproductive toxicity This product is not expected to cause reproductive or developmental effects. Specific target organ toxicity - Not classified. single exposure Specific target organ toxicity - Not classified. repeated exposure Aspiration hazard Not an aspiration hazard. Chronic effects Prolonged inhalation may be harmful. 12. Ecological information Ecotoxicity Harmful to aquatic life with long lasting effects Test Results Product Species BL124 Aquatic Crustacea LC50 Ceriodaphnia dubia 459 mg/l, 48 hours 390.4 mg/l, 48 hours 70.7 mg/l, 48 hours Opossum shrimp order (Mysida) LOEC Ceriodaphnia dubia 600 mg/l, 7 days NOEC Ceriodaphnia dubia 300 mg/l, 7 days Fish IC25 Fathead minnow (Pimephales promelas) 750 mg/l, 7 days Fathead minnow (Pimephales promelas) > 1000 mg/l, 96 hours LC50 849 mg/l, 96 hours Sheepshead minnow (Cyprinodon variegatus) 100 mg/l, 96 hours Fathead minnow (Pimephales promelas) 1200 mg/l, 7 days LOEC NOEC Fathead minnow (Pimephales promelas) 600 mg/l, 7 days Persistence and degradability No data is available on the degradability of any ingredients in the mixture. Bioaccumulative potential No data available. Mobility in soil No data available.

No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

Flammability (solid, gas)	
	Not applicable.
Upper/lower flammability or expl Flammability limit - lower	Not available.
(%)	
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	0 - 200 cps
Other information	
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.
Percent volatile	21 % estimated
Pounds per gallon	10.3
Specific gravity	1.24 @ 20C
VOC	0 %w/w
10. Stability and reactivity	
Reactivity	May be corrosive to metals.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents. Metals.
Hazardous decomposition products	No hazardous decomposition products are known.
11. Toxicological informat	tion
Information on likely routes of e	xposure
Inhalation	May cause allergy or asthma symptoms or breathing difficulties if inhaled. Prolonged inhalation may be harmful.
Skin contact	Causes skin irritation. May cause an allergic skin reaction.
Eye contact	Causes serious eye damage.
Ingestion	Expected to be a low ingestion hazard.
Symptoms related to the physical, chemical and toxicological characteristics	Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Difficulty in breathing. Skin irritation. May cause redness and pain. May cause an allergic skin reaction. Dermatitis. Rash.
-	octs
Information on toxicological effe	

13. Disposal consideration	IS
Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Incinerate the material under controlled conditions in an approved incinerator. Do not alow this material to drain into sewers/lwater supplies. Do not containinate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	D002: Waste Corrosive material [pH <=2 or =>12.5, or corrosive to steel] The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.
14. Transport information	
DOT	
UN number	UN2693
UN proper shipping name Transport hazard class(es)	BISULFITES, AQUEOUS SOLUTIONS, N.O.S. (Sodium bisulfite RQ = 16667 LBS)
Class	8
Subsidiary risk	-
Packing group	
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	IB3, T7, TP1, TP28
Packaging exceptions	154
Packaging non bulk	203
Packaging bulk	241
IATA	
UN number	UN2693
UN proper shipping name Transport hazard class(es)	BISULFITES, AQUEOUS SOLUTIONS, N.O.S. (Sodium bisulfite)
Class	8
Subsidiary risk	
Packing group	
Environmental hazards	No.
	Read safety instructions, SDS and emergency procedures before handling.
IMDG	
UN number	
UN proper shipping name Transport hazard class(es)	BISULFITES, AQUEOUS SOLUTIONS, N.O.S. (Sodium bisulfite)
Class	8
Subsidiary risk	-
Packing group	III
Environmental hazards	
Marine pollutant	No.
EmS	Not available.
Special precautions for user Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Read safety instructions, SDS and emergency procedures before handling. Not established.

Other adverse effects

DOT		International Inventories			
		Country(s) or region	Inventory name	On inventory	(yes/no)*
63		Australia	Australian Inventory of Chemical	Substances (AICS)	Yes
We De		Canada Canada	Domestic Substances List (DSL) Non-Domestic Substances List (		Yes No
CORROSIVE		China	Inventory of Existing Chemical S		Yes
		Europe	European Inventory of Existing C Substances (EINECS)	Commercial Chemical	Yes
$\mathbf{\nabla}$		Europe	European List of Notified Chemic		No
ATA; IMDG		Japan Korea	Inventory of Existing and New Cl Existing Chemicals List (ECL)	nemical Substances (ENCS)	Yes Yes
		New Zealand	New Zealand Inventory		Yes
I Shi Del		Philippines	Philippine Inventory of Chemical	s and Chemical Substances	Yes
		Taiwan	(PICCS) Taiwan Chemical Substance Inve	entory (TCSI)	Yes
			Rico Toxic Substances Control Act (T		Yes
8				ventory requirements administered by the governing country(s) ted or exempt from listing on the inventory administered by the	
15. Regulatory information	on	Compliance Information: H	lalal		
JS federal regulations	This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication	Compliance Information: K	osher		
Toxic Substances Control	Standard, 29 CFR 1910.1200.		fied by the Orthodox Unionas Kosher pa	ireve	
	port Notification (40 CFR 707, Subpt. D)	Eldridge IA Ashland VA			
Not regulated.		Nederland TX			
CERCLA Hazardous Subst		Fontana CA			
Sodium bisulfite (CAS 76 SARA 304 Emergency relea					
Not regulated.		(())			
OSHA Specifically Regulate Not regulated.	ed Substances (29 CFR 1910.1001-1053)				
	eauthorization Act of 1986 (SARA) dous substance	Compliance Information: N	ISF Whitebook		
Not listed.		This product confor	ms to the requirements of the NSF Nonfe	ood Compounds Registration Program, Registration # 14	48827;
SARA 311/312 Hazardous chemical	Yes	Category G6, G7.			
Classified hazard	Corrosive to metal	NAE			
categories	Skin corrosion or irritation Serious eye damage or eye irritation	NSF.			
	Respiratory or skin sensitization				
SARA 313 (TRI reporting)		Compliance Information: F	ood Regulations		
Not regulated.		FDA: All ingredients may contact food.	in this product are authorized in 21 CFF	R 173.310 for use as "Boiler Water Additives" where the	steam
Other federal regulations Clean Air Act (CAA) Section	n 112 Hazardous Air Pollutants (HAPs) List	,	, including date of preparation	or last revision	
Not regulated.		Issue date	07-13-2022	or last revision	
	n 112(r) Accidental Release Prevention (40 CFR 68.130)	Version #	01		
Not regulated. Safe Drinking Water Act	Not regulated.	HMIS® ratings	Health: 2		
(SDWA)			Flammability: 0 Physical hazard: 0		
US state regulations			Personal protection: X		
California Proposition 65 California Safe Drinking	Water and Toxic Enforcement Act of 1986 (Proposition 65): This material				
is not known to contain a	any chemicals currently listed as carcinogens or reproductive toxins. For www.P65Warnings.ca.gov.				
Material name: BL124		SDS US Material name: BL124			SDS US
RL124 Version #: 01 Issue date:	07-13-2022	7 / 9 RL124 Version #: 01 Issue	date: 07-13-2022		8/9
Disclaimer	ChemTreat cannot anticipate all conditions under which this information and its product, products of other manufacturers in combination with its product, may be used. It is the u				
	responsibility to ensure safe conditions for handling, storage and disposal of the product,	and to ChomTroy	at'		
	assume liability for loss, injury, damage or expense due to improper use. The information sheet was written based on the best knowledge and experience currently available. Altho	ugh the	<u> </u>		0.00
	information and recommendations set forth herein (hereinafter "information") are present good faith and believed to be correct as of the date hereof, ChemTreat, Inc. makes no	ed in			SDS
	representations as to the completeness or accuracy thereof. Information is supplied upor				
	condition that the persons receiving same will make their own determination as to its suit their purposes prior to use. In no event will ChemTreat, Inc. be responsible for damages	of any	SAFETY DA	ATA SHEET	
	nature whatsoever resulting from the use or reliance upon information. No representation warranties, either expressed or implied, of merchantability, fitness for a particular purpos	or a. or of			
	any other nature are made hereunder with respect to information or the product to which information refers.				
Other information	Prepared by: Product Compliance Department; ProductCompliance@chemtreat.com	Section 1. Chem	ical Product and Compa	any Identification	
		Product Name:		Chemical Treatment CL2150	
		Product Name. Product Use:		Cooling Water Microbiocide and Paper Slimicide	
		Supplier's Nam	e:	ChemTreat, Inc.	
		Emergency Tel	ephone Number:	(800)424-9300 (Toll Free)	
			orate Headquarters):	5640 Cox Road Glen Allen, VA 23060	
		Telephone Nun Date of SDS:	ber for Information:	(800)648-4579 May 28, 2020	
		Revision Date:		May 28, 2020	
		Revision Numb	er:	20052801AN	
		Section 2 Hazan	d(s) Identification	^	$\wedge$
		Signal Word:	DANGER		$\forall $
		Signal Word: GHS Classification(s):		tion - Cotogony th	-
		GES GASSIICATION(S):	OND COLOSION/ITTIA		

# A SHEET

#### y Identification

Skin corrosion/irritation – Category 1b Eye damage/irritation – Category 1 Acute Toxicity Dermal – Category 4 Acute Toxicity Inhalation – Category 4 Acute Toxicity Oral – Category 4 Hazardous to the aquatic environment Acute – Category 3 Sensitization Skin – Category 1 GHS Classification(s): H314 Causes severe skin burns and eye damage. H318 Causes serious eye damage. H312 Harmful if inhaled. H332 Harmful if inhaled. H302 Harmful if swallowed. H402 Harmful to aquatic life. H317 May cause an allergic skin reaction. Hazard Statement(s):

Precautionary Statement(s):



Prevention:

Response:

Storage: Disposal:

Hazards Not Otherwise Classified:

System of Classification Used:







P260 Do not breathe dust/fume/gas/mist/vapors/spray. P264 Wash thoroughly after handling. P270 Do not eat, drink, or smoke when using this product. P271 Use only outdoors or in a well-ventilated area. P280 Wear protective gloves/protective clothing/eye protection/face protection. P273 Avoid release into the environment.	Section 3. Compositio	on/Hazardous Ingredients	WL%
P272 Contaminated work clothing should not be allowed	5-chloro-2-methyl-4-isothiazolin-3-one	26172-55-4 2682-20-4	1.11 0.39
out of the workplace.	2-methyl-4-isothiazolin-3-one	2682-20-4	0.39
P301 + P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell P301 + 330 + 331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.	Comments	If chemical identity and/or exact percent: withheld, this information is considered t	
P303 + P361 + P353 IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower	Section 4. First Aid M	easures	
P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact	Inhalation:	Remove to fresh air and keep at rest in a breathing. Call a poison center or doctor unwell.	
lenses, if present and easy to do. Continue rinsing. P310 Immediately call a POISON CENTER/doctor. P363 Wash contaminated clothing before reuse. P302 + P352 IF ON SKIN: Wash with plenty of soap	Eyes:	Rinse cautiously with water for several n lenses, if present and easy to do. Contin call a poison center or doctor/physician.	
and water. P333 + P313 If skin irritation or rash occurs: Get medical advice/attention. P362 + P364 Take off contaminated clothing and wash	Skin:	Immediately remove/take off all contamin with water/shower. Wash contaminated Immediately call a poison center or doct	clothing before re-use.
it before reuse.	Ingestion:	DO NOT INDUCE VOMITING. Rinse mo CENTER or doctor/physician.	outh. Call a POISON
P405 Store locked up. P501 Dispose of contents and container in accordance	Most Important Symptoms:	N/D	
with applicable local, regional, national, and/or international regulations.	Indication of Immediate Medical Attention and	Probable mucosal damage may contrain lavage.	5
sification under 2012 OSHA Hazard Communication Standard CFR 1910.1200).	Special Treatment Needed, If Necessary:	Have the product container, label or MSI a poison control center or doctor, or whe	

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None.

Classification under 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

Chemical Treatment CL2150

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Chemical Treatment CL2150





# Section 5. Fire Fighting Measures

Flammability of the Product:	Not flammable.
Suitable Extinguishing Media:	Use extinguishing media suitable to surrounding fire.
Specific Hazards Arising from the Chemical:	Use water spray to keep containers cool.
Protective Equipment:	If product is involved in a fire, wear full protective clothing including a positive-pressure, NIOSH approved, self-contained breathing apparatus.

# Section 6. Accidental Release Measures

Personal Precautions:	Use appropriate Personal Protective Equipment (PPE).
Environmental Precautions:	This pesticide is toxic to fish and aquatic organisms. Do not discharge effluent containing this product into lakes, ponds, streams, estuaries, oceans or public waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit, and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA.
Methods for Cleaning up:	Contain and recover liquid when possible. Flush spill area with water spray.
Other Statements:	If RQ (Reportable Quantity) is exceeded, report to National Spill Response Office at 1–800–424–8802.



# Section 7. Handling and Storage

Handling:	Wear appropriate Personal Protective Equipment (PPE) when handling this product. Do not get in eyes, or on skin and clothing. Wash thoroughly after handling. Do not ingest. Avoid breathing vapors, mist or dust.
Storage:	Store away from incompatible materials (see Section 10). Store at ambient temperatures. Keep container securely closed when not in use. Label precautions also apply to empty container. Recondition or dispose of empty containers in accordance with government regulations. For Industrial use only. Store in corrosive resistant container with a resistant inliner. Store above Freeze Point.

# Section 8. Exposure Controls/Personal Protection

Component		Source	Exposure Limits
5-chloro-2-methyl-4-isothiazolin-3-one		N/E	N/E
2-methyl-4-isothiazolin-3-one		N/E	N/E
			uate ventilation. The use of local ventilation is ontrol emission near the source.
Personal Protection			
Eyes:	Wear chemical splash goggles or safety glasses with full-face shield. Maintain eyewash fountain in work area.		
Skin:	Maintain quick-drench facilities in work area. Wear butyl rubber or neoprene gloves. Wash them after each use and replace as necessary. If conditions warrant, wear protective clothing such as boots, aprons, and coveralls to prevent skin contact.		
Respiratory:		gas dual ca	ccurs, use NIOSH approved organic vapor/acid artridge respirator with a dust/mist prefilter in e with 29 CFR 1910.134.







Section 11. Toxicological Information



Chemical Treatment CL2150

# Section 9. Physical and Chemical Properties

#### Section 10. Stability and Reactivity

Chemical Stability:	Stable at normal temperatures and pressures.
Incompatibility with Various Substances:	Strong oxidizers, Strong bases.
Hazardous Decomposition Products:	Oxides of nitrogen, Oxides of sulfur, Oxides of carbon, Halogenated compounds.
Possibility of Hazardous Reactions:	None known.
Reactivity:	N/D
Conditions To Avoid:	N/D

hemical Name	Ex	posure	Type of Effect	Concentration	Species
hemical Treatment CL2150	Ora		LD50	3810 MG/KG	Rat
		rmal	LD50	>5000 MG/KG	Rabbit
	Inh	alation	LD50	13.7 MG/L	Rat
arcinogenicity Category					
omponent		Source	Code	Brief Description	
-chloro-2-methyl-4-isothiazolin-3-one		N/E	N/E	N/E	
-methyl-4-isothiazolin-3-one		N/E	N/E	N/E	
kely Routes of Exposure:	N/D				
mptoms					
Inhalation:		N/D			
Eye Contact:		N/D			
Skin Contact:		N/D			
Ingestion:		N/D			
in Corrosion/Irritation:	N/D				
rious Eye Damage/Eye tation:	N/D				
nsitization:	N/D				
rm Cell Mutagenicity:	N/D				
productive/Developmental xicity:	N/D				
pecific Target Organ Toxicity					
Single Exposure:		N/D			
Repeated Exposure:		N/D			
piration Hazard:	N/D				

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Comments:

Section 12. Ecological Information

None.

Species		Duration	Type of Effect	Test Results
Daphnia magna		48h	LC50	10.7 mg/l
Bluegill Sunfish		96h	LC50	18.6 mg/l
Rainbow Trout		96h	LC50	12.6 mg/l
Sheepshead Minnow		96h	LC50	70.7 mg/l
Mysid Shrimp		48h	LC50	46.1 mg/l
Daphnia pulex		48h	LC50	17 mg/l
Fathead Minnow		48h	LC50	8.7 mg/l
Ceriodaphnia dubia		48h	LC50	18.1 mg/l
Persistence and Biodegradability:	N/D			
Bioaccumulative Potential:	N/D			
Mobility In Soil:	N/D			
Other Adverse Effects:	N/D			
Comments:	None.			

## Section 13. Disposal Considerations

PESTICIDE DISPOSAL: Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance. CONTAINER DISPOSAL: Non-refiliable container. Do not reuse or refill this container. Triple rinse or pressure rinse container (or equivalent) promptly after emptying. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by procedures approved by state and local authorities.



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# Section 14. Transport Information

Controlling Regulation	UN/NA#:	Proper Shipping Name:	Technical Name:	Hazard Class:	Packing Group:
DOT	UN1760	CORROSIVE LIQUIDS, N.O.S.	(5-CHLORO-2-METHYL-4- ISOTHIAZOLIN-3-ONE AND 2-METHYL-4-ISOTHIAZOLIN-3- ONE)	8	PGII
IMDG	UN1760	CORROSIVE LIQUIDS, N.O.S.	(5-CHLORO-2-METHYL-4- ISOTHIAZOLIN-3-ONE AND 2-METHYL-4-ISOTHIAZOLIN-3- ONE)	8	PGII
TDG	UN1760	CORROSIVE LIQUIDS, N.O.S.	(5-CHLORO-2-METHYL-4- ISOTHIAZOLIN-3-ONE AND 2-METHYL-4-ISOTHIAZOLIN-3- ONE)	8	PGII
ICAO	UN1760	CORROSIVE LIQUIDS, N.O.S.	(5-CHLORO-2-METHYL-4- ISOTHIAZOLIN-3-ONE AND 2-METHYL-4-ISOTHIAZOLIN-3- ONE)	8	PGII
SCT	UN1760	CORROSIVE LIQUIDS, N.O.S.	(5-CHLORO-2-METHYL-4- ISOTHIAZOLIN-3-ONE AND 2-METHYL-4-ISOTHIAZOLIN-3- ONE)	8	PGII

Note:

# Section 15. Regulatory Information

N/A

Inventory Status

United States (TSCA): Canada (DSL/NDSL): All ingredients listed. All ingredients listed.

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SARA Title III Rules

Sections 311/312 Hazard Classes

Other Sections

California Proposition 65:

Special Regulations

2-methyl-4-is Compliance Information NSF:

Food Regulations:

KOSHER:

Halal:

FIFRA:

Other:

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Componen

Comments:

Fire Hazard:

Reactive Hazard: Release of Pressure: Acute Health Hazard: Chronic Health Hazard:

Federal Regulations

State Regulations



CERCLA RQ

No

No No Yes No

tion 313

This product is certified by the Orthodox Union as Kosher for Passover and year-round use. Only when prepared by the following ChemTreat facilities: Ashland, VA; Eldridge, IA; Nederland, TX; Fontana, CA.

This product has not been evaluated for Halal approval. Registered pesticide under 40 CFR 152.10, Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), EPA Registration Number: 15300-24.

PMRA biocide registration NO. 26537.

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None

None known.

-3-one

N/A

N/A

Section 302 EHS TPQ





Comments: None.

Section 16. Other Information

MIS Hazard Rating	
Health: Flammability: Physical Hazard: PPE:	3 0 0 X
Notes:	The PPE rating depends on circumstances of use. See Section 8 for recommended PPE. The Hazardous Material Information System (HMIS) is a voluntary, subjective alpha-numeric symbolic system for recommending hazard risk and personal protection equipment information. It is a subjective rating system based on the evaluator's understanding of the chemical associated risks. The end-user must determine if the code is appropriate for their use.

#### Abbreviations

Abbreviation	Definition
<	Less Than
>	Greater Than
ACGIH	American Conference of Governmental Industrial Hygienists
EHS	Environmental Health and Safety Dept
N/A	Not Applicable
N/D	Not Determined
N/E	Not Established
OSHA	Occupational Health and Safety Dept
PEL	Personal Exposure Limit
STEL	Short Term Exposure Limit
TLV	Threshold Limit Value
TWA	Time Weight Average
UNK	Unknown
Prepared by:	Product Compliance Department; ProductCompliance@chemtreat.com

Revision Date:

May 28, 2020

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#### Disclaimer

Although the information and recommendations set of the term in hereinalite "information" are presented in good faith and believed to be correct as of the data hereo(ChemTendation, makes no representations as to be usuability for their purposes prior to use. In on event will ChemTend, here presentations in supplied use of the information, the supple output on the condition that the periors necesity name whatever exitantly faith the use or relations upon the information, the supple output of the information of the supple output of the information is not be used to the information of the informati





# SAFETY DATA SHEET

#### Section 1. Chemical Product and Company Identification

Product Name: Product Use: Supplier's Name: Emergency Telephone Number: Address (Corporate Headquarters): Telephone Number for Information: Date of SDS: Revision Date: ChemTreat CL4132 Cooling Water Treatment ChemTreat, Inc. (800)424-9300 (Toll Free) 5640 Cox Road Glen Allen, VA 23060 (800)648-4579 October 4, 2019 October 4, 2019 19100401AN

#### Section 2. Hazard(s) Identification

### Signal Word:

Revision Number:

Corrosive to Metals – Category 1 Skin corrosion/irritation – Category 1b Eye damage/irritation – Category 1

DANGER

H290 May be corrosive to metals. H314 Causes severe skin burns and eye damage. H318 Causes serious eye damage.

Precautionary Statement(s): Prevention:

GHS Classification(s):

Hazard Statement(s):

P234 Keep only in original container. P260 Do not breathe dust/fume/gas/mist/vapors/spray. P264 Wash thoroughly after handling. P280 Wear protective glock/protective clothing/eye protection/face protection.



Response:

Storage:

Disposal:

Hazards Not Otherwise Classified:

System of Classification Used:







Ingestion:	Rinse mouth. Call a poison center or doctor/physician if you feel unwell.
Most Important Symptoms:	N/D
Indication of Immediate Medical Attention and Special Treatment Needed, If Necessary:	N/A

#### Section 5. Fire Fighting Measures

Flammability of the Product:	Not flammable.
Suitable Extinguishing Media:	Use extinguishing media suitable to surrounding fire.
Specific Hazards Arising from the Chemical:	Containers exposed in a fire should be cooled with water to prevent vapor pressure build-up leading to rupture.
Protective Equipment:	If product is involved in a fire, wear full protective clothing including a positive-pressure, NIOSH approved, self-contained breathing apparatus.

#### Section 6. Accidental Release Measures

Personal Precautions:	Use appropriate Personal Protective Equipment (PPE).
Environmental Precautions:	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains, and sewers.
Methods for Cleaning up:	Contain and/or absorb spill with inert material then place in suitable container.
Other Statements:	If RQ (Reportable Quantity) is exceeded, report to National Spill Response Office at 1-800-424-8802.

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# Section 9. Physical and Chemical Properties

Physical State and Appearance:         Liquid, Dark Straw, Clear           Specific Gravity:         1.61 (@ 20°C           pH:         13.0 (@ 20°C, 100.0%)           Freezing Point:         12.2°F           Flash Point:         N/A           Odor:         Mild           Metting Point:         N/D
pH:         13.0 @ 20°C, 100.0%           Freezing Point:         12.2°F           Flash Point:         N/A           Odor:         Mild
Freezing Point: 12.2°F Flash Point: N/A Odor: Mild
Flash Point: N/A Odor: Mild
Odor: Mild
Melting Point: N/D
Initial Boiling Point and Boiling Range: 212°F
Solubility in Water: N/D
Evaporation Rate: N/A
Vapor Density: Lighter than air
Molecular Weight: N/D
Viscosity: N/D
Flammability (solid, gas): N/D
Flammable Limits: N/A
Autoignition Temperature: N/A
Density: 9.68 LB/GA
Vapor Pressure: <18 mmHg @ 68°F
% VOC: N/D
Odor Threshold N/D
n-octanol Partition Coefficient N/D
Decomposition Temperature N/D

# Section 10. Stability and Reactivity

Chemical Stability:	Stable at normal temperatures and pressures.
Incompatibility with Various Substances:	Strong acids, Strong oxidizers.
Hazardous Decomposition Products:	Oxides of carbon, Oxides of nitrogen, Hydrogen cyanide.
Possibility of Hazardous Reactions:	None known.
Reactivity:	N/D
Conditions To Avoid:	N/D

#### Section 3. Composition/Hazardous Ingredients Co CAS Registry #

None.

Comments	y and/or exact percentage of com mation is considered to be a trad	
Sodium hydroxide	1310-73-2	1 - 5
Sodium 4(or 5)-methyl-1H-benzotriazolide	64665-57-2	1 - 5
Dichlorotolyltriazole	N/A	2.5 - 10
Chlorotolyltriazole sodium salt	202420-04-0	10 - 20

P405 Store locked up.

#### Section 4. First Aid Measures

Inhalation:	Call a POISON CENTER or doctor/physician if you feel unwell.
Eyes:	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor/physician.
Skin:	Immediately remove/take off all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before re-use. Immediately call a poison center or doctor/physician.

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P301 + 330 + 331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. P303 + P361 + P353 IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P501 Dispose of contents and container in accordance with applicable local, regional, national, and/or international regulations.

Classification under 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

Wt.%

ChemTreat CL4132





# Section 7. Handling and Storage

Handling:	Wear appropriate Personal Protective Equipment (PPE) when handling this product. Do not get in eyes, or on skin and clothing. Wash thoroughly after handling. Do not ingest. Avoid breathing vapors, mist or dust.
Storage:	Store away from incompatible materials (see Section 10). Store at ambient temperatures. Keep container securely closed when not in use. Label precations also apply to empty container. Recondition or dispose of empty containers in accordance with government regulations. For Industrial use only. Do not Freeze. Store above Freeze Point. If freezes, then must warm to freeze recovery temperature 68°F and then mechanical mixing is required.

#### Section 8. Exposure Controls/Personal Protection

Component	Source	Exposure Limits	
Chlorotolyltriazole sodium salt	N/E	N/E	
Dichlorotolyltriazole	N/E	N/E	
Sodium 4(or 5)-methyl-1H-benzotriazolide	N/E	N/E	
Sodium hydroxide	ACGIH TL	LV 2 mg/m <sup>3</sup> Ceiling	
	OSHA PE	L 2 mg/m <sup>a</sup> TWA	
Engineering Controls: Personal Protection		dequate ventilation. The use of local ventilation is to control emission near the source.	
Eyes:		hemical splash goggles or safety glasses with e shield. Maintain eyewash fountain in work area.	
Skin:	Wear bu each us wear pro	Maintain quick-drench facilities in work area. Wear butyl rubber or neoprene gloves. Wash them after each use and replace as necessary. If conditions warrant, wear protective clothing such as boots, aprons, and coveralls to prevent skin contact.	
Respiratory:	If mistin Organic 1910.13	g occurs, wear a NIOSH–approved respirator with 2 Vapor Cartridges, in accordance with 29 CFR 34.	





# Section 11. Toxicological Information

Chemical Name	Expo	sure	Type of Effect	Concentration	Species
Sodium hydroxide	Oral		LD50	300 MG/KG	Rat
	Derma	al	LD50	1350 MG/KG	Rabbit
ChemTreat CL4132	Oral		LD50	>5000 MG/KG	Rat
	Derma	al	LD50	>5000 MG/KG	Rat
Component		Source	Code	Brief Description	
Chlorotolyltriazole sodium salt		N/F	N/E	N/E	
		N/E	N/E	N/E	
		N/E			
Sodium 4(or 5)-methyl-1H-benzotriazolide		N/E	N/E	N/E	
Sodium hydroxide					
Sodium hydroxide Likely Routes of Exposure: Symptoms	N/D	N/E N/E	N/E	N/E	
	N/D	N/E	N/E	N/E	
Sodium hydroxide Likely Routes of Exposure: Symptoms Inhalation:	N/D	N/E N/D	N/E	N/E	

N/D

N/D

N/D

N/D

N/D



Specific Target Organ Toxicity			
Single Exposure:			

Repeated Exposure:		N/D
Aspiration Hazard:	N/D	
Comments:	None.	

# Section 12. Ecological Information

Ecotoxicity

Species	Duration	Type of Effect	Test Results
Ceriodaphnia dubia	48h	LC50	108 mg/l
Fathead Minnow	96h	LC50	44.1 mg/l
	7d	NOEC	12.5 mg/l
	7d	LOEC	25 mg/l
	7d	IC25	31.4 mg/l
Ceriodaphnia dubia	7d	NOEC	12.5 mg/l
-	7d	LOEC	25 mg/l
	74	1025	22.4 mall

N/D

Persistence and Biodegradability:	N/D
Bioaccumulative Potential:	N/D
Mobility In Soil:	N/D
Other Adverse Effects:	N/D
Comments:	None.

# Section 13. Disposal Considerations

Dispose of in accordance with local, state and federal regulations. EPA corrosivity characteristic hazardous waste D002 when disposed of in the original product form.

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Skin Corrosion/Irritation:

Serious Eye Damage/Eye Irritation:

Germ Cell Mutagenicity:

Reproductive/Developmental Toxicity:

Sensitization:



# Section 14. Transport Information

Controlling Regulation	UN/NA#:	Proper Shipping Name:	Technical Name:	Hazard Class:	Packing Group:
DOT	UN1760	CORROSIVE LIQUIDS, N.O.S.	(SODIUM HYDROXIDE AND HALOGENATED AROMATIC HETEROCYCLE SODIUM SALT)	8	PGII
SCT	UN1760	CORROSIVE LIQUIDS, N.O.S.	(SODIUM HYDROXIDE AND HALOGENATED AROMATIC HETEROCYCLE SODIUM SALT)	8	PGII
TDG	UN1760	CORROSIVE LIQUIDS, N.O.S.	(SODIUM HYDROXIDE AND HALOGENATED AROMATIC HETEROCYCLE SODIUM SALT)	8	PGII
ANTT	UN1760	CORROSIVE LIQUIDS, N.O.S.	(SODIUM HYDROXIDE AND HALOGENATED AROMATIC HETEROCYCLE SODIUM SALT)	8	PGII
Note:		N/A			

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Section 15. Regulatory Information

Inventory Sta	tus		
	United States Canada (DSL		All ingredients listed. All ingredients listed.
Federal Regu	lations		
SARA	Title III Rules		
	Sections 311/ Classes	312 Hazard	
		Fire Hazard: Reactive Hazard: Release of Pressure: Acute Health Hazard: Chronic Health Hazard:	No No Yes No

<b>ChemTreat</b>
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#### Other Sections

	Section 313	Section 302 EHS	
Component	Toxic Chemical	TPQ	CERCLA RQ
Chlorotolyltriazole sodium salt	N/A	N/A	N/A
Dichlorotolyltriazole	N/A	N/A	N/A
Sodium 4(or 5)-methyl-1H-benzotriazolide	N/A	N/A	N/A
Sodium hydroxide	N/A	N/A	1000

State Regulations

California Proposition 65: None known.

Special Regulations

Com	ponent		States
	rotolyltriazole sodium salt		None.
	lorotolyltriazole		None.
	um 4(or 5)-methyl-1H-benzotri	iazolide	None.
Sodi	um hydroxide		MA, MN, NY, PA, WA
Compliance Infor	mation		
NSF:		N/A	
Food Regu	ilations:	N/A	
KOSHER:		This product has i	not been evaluated for Kosher approval.
Halal:		This product has i	not been evaluated for Halal approval.
FIFRA:		N/A	
Other:		None	
Comments:	Non	е.	
Section 16. C	)ther Information		
HMIS Hazard Rati	ng		
	mmability: vsical Hazard:		3 1 0 X



Notes:

Abbreviations

Definition

Abbreviation

ACGIH EHS N/A N/D N/E OSHA PEL STEL TLV

TWA Prepared by:

Revision Date:

Disclaimer



The PPE rating depends on circumstances of use. See Section 8 for recommended PPE. The Hazardous Material Information System (HMIS) is a voluntary, subjective alpha-numeric symbolic system for recommending hazard risk and personal protection equipment information. It is a subjective rating system based on the evaluator's understanding of the chemical associated risks. The end-user must determine if the code is appropriate for their use

Product Compliance Department; ProductCompliance@chemtreat.com

their use.

Definition
Less Than
Greater Than
American Conference of Governmental Industrial Hygienists
Environmental Health and Safety Dept
Not Apolicable
Occupational Health and Safety Dept
Personal Exposure Limit
Short Tem Exposure Limit
Timeshold Limit Value
Time Weight Average
Unknown
Compliance Departfr

October 4, 2019

Although the information and recommendations set forth herein (hereinafter "information") are presented in good faith and believed to be correct as of the date hereod; ChemTreat, Inc. makes no representations as to the completeness or accuracy thereod. Information is supplied upon the configure as to the supplied upon the configure as to the purpose prior to use. In on event will ChemTreat, the responsible for damages of any nature whatsever resulting from the use or relatione upon information. No representation or warranties, either expressed or implied, or mechantability, filness for a particular purpose, or of any other nature are made hereuned with respect to information or the pre-sentation of the support of any other nature are made hereuned with respect to information or the super support of the support of th

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# SAFETY DATA SHEET

Section 1. Chemical Product and Company Identification

Product Name: Product Use: Supplier's Name: Emergency Telephone Number: Address (Corporate Headquarters): Telephone Number for Information: Date of SDS: Revision Date: Revision Number: Quadrasperse® CL5859 Cooling Water Treatment Chem Treat, Inc. (800)424–9300 (Toll Free) 5640 Cox Road Gien Allen, VA 23060 (800)648–4579 February 7, 2019 February 7, 2019 19020701AN

#### Section 2. Hazard(s) Identification

Signal Word:	WARNING
GHS Classification(s):	Eye damage/irritation – Category 2b Acute Toxicity Dermal – Category 5 Acute Toxicity Inhalation – Category 5 Acute Toxicity Oral – Category 5
Hazard Statement(s):	H320 Causes eye irritation. H313 May be harmful in contact with skin. H333 May be harmful in inhaled. H303 May be harmful if swallowed.
Precautionary Statement(s):	
Prevention:	P264 Wash thoroughly after handling.
Response:	None.
Storage:	None.
Disposal:	None.
System of Classification Used:	Classification under 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).
Hazards Not Otherwise Classified:	None.

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Quadrasperse® CL5859





Protective Equipment:

If product is involved in a fire, wear full protective clothing including a positive-pressure, NIOSH approved, self-contained breathing apparatus.

#### Section 6. Accidental Release Measures

Personal Precautions:	Use appropriate Personal Protective Equipment (PPE).
Environmental Precautions:	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains, and sewers.
Methods for Cleaning up:	Contain and recover liquid when possible. Flush spill area with water spray.
Other Statements:	None.

#### Section 7. Handling and Storage

Handling:	Wear appropriate Personal Protective Equipment (PPE) when handling this product. Do not get in eyes, or on skin and clothing. Wash thoroughly after handling. Do not ingest. Avoid breathing vapors, mist or dust.
Storage:	Store away from incompatible materials (see Section 10). Store at ambient temperatures, Keep container securely closed when not in use. Label precautions also apply to empty container. Recondition or dispose of empty containers in accordance with government regulations. For Industrial use only. Do not store or handle in aluminum, zinc, copper, or their alloys. Store above Freeze Point.

#### Section 8. Exposure Controls/Personal Protection

Component 2-Phosphono-1,2,4-butane tricarboxylic acid		Exposure Limits	
		N/E	



ChèmTreat



ChemTreat CL4132

# Section 3. Composition/Hazardous Ingredients

Component	CAS Registry #	Wt.%
2-Phosphono-1,2,4-butane tricarboxylic acid	37971-36-1	3 - 7
Comments	f chemical identity and/or exact percentage withheld, this information is considered to	ge of composition has been be a trade secret.

#### Section 4. First Aid Measures

Inhalation:	Remove to fresh air and keep at rest in a position comfortable for breathing. Call a poison center or doctor/physician if you feel unwell.
Eyes:	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice/attention.
Skin:	Wash with plenty of soap and water. Call a poison center or doctor/physician if you feel unwell.
Ingestion:	DO NOT INDUCE VOMITING. Rinse mouth. Call a POISON CENTER or doctor/physician if you feel unwell.
Most Important Symptoms:	N/D
Indication of Immediate Medical Attention and Special Treatment Needed, If Necessary:	N/A

#### Section 5. Fire Fighting Measures

Flammability of the Product:	Not flammable.
Suitable Extinguishing Media:	Use extinguishing media suitable to surrounding fire.
Specific Hazards Arising from the Chemical:	None known.









#### Personal Protection

Eyes:	Wear chemical splash goggles or safety glasses with full-face shield. Maintain eyewash fountain in work area.
Skin:	Maintain quick-drench facilities in work area. Wear butyl rubber or neoprene gloves. Wash them after each use and replace as necessary. If conditions warrant, wear protective clothing such as boots, aprons, and coveralls to prevent skin contact.
Respiratory:	If misting occurs, use NIOSH approved organic vapor/acid gas dual cartridge respirator with a dust/mist prefilter in accordance with 29 CFR 1910.134.

### Section 9. Physical and Chemical Properties

Physical State and Appearance:	Liquid, Yellow, Clear
Specific Gravity:	1.153 @ 20°C
PH:	3.4 @ 20°C, 100.0%
Freezing Point:	34°F
Flash Point:	N/A
Odor:	N/A
Initial Boiling Point and Boiling Range:	N/D
Solubility in Water:	Complete
Evaporation Rate:	N/D
Vapor Density:	N/D
Molecular Weight:	N/D
Viscosity:	N/D
Flammability (solid, gas):	N/A
Flammabile Limits:	N/A
Autoignition Temperature:	N/A
Density:	N/A
Vapor Pressure:	N/A
% VOC:	N/A
Odor Threshold	N/A
n-octanol Partition Coefficient	N/A

# Section 10. Stability and Reactivity

Chemical Stability:	Stable at normal temperatures and pressures.
Incompatibility with Various Substances:	Strong oxidizers, Strong bases.
Hazardous Decomposition Products:	Oxides of nitrogen, Oxides of phosphorus, Oxides of carbon.
Possibility of Hazardous Reactions:	None known.
Reactivity:	N/D
Conditions To Avoid:	N/D

### Section 11. Toxicological Information

Chemical Name	Exp	osure	Type of Effect	Concentration	Species
2-Phosphono-1,2,4-butane tricarboxylic acid	Ora	1	LD50	>6500 MG/KG	Rat
Carcinogenicity Category					
Component		Source	Code	Brief Description	
2-Phosphono-1,2,4-butane tricarboxylic acid		N/E	N/E	N/E	
Likely Routes of Exposure:	N/D				
Symptoms					
Inhalation:		N/D			
Eye Contact:		N/D			
Skin Contact:		N/D			
Ingestion:		N/D			
Skin Corrosion/Irritation:	N/D				

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Quadrasperse® CL5859

## Section 13. Disposal Considerations

Dispose of in accordance with local, state and federal regulations.

### Section 14. Transport Information

Controlling					Packing
Regulation	UN/NA#:	Proper Shipping Name:	Technical Name:	Hazard Class:	Group:
DOT	N/A	COMPOUND, INDUSTRIAL	N/A	N/A	N/A
		WATER TREATMENT, LIQUID			
TDG	N/A	COMPOUND, INDUSTRIAL	N/A	N/A	N/A
		WATER TREATMENT, LIQUID			
Note:		N/A			

### Section 15. Regulatory Information

Inventory Status				
	d States (TSCA): da (DSL/NDSL):	All ingredients All ingredients		
Federal Regulations	3			
SARA Title I	I Rules			
Section	ons 311/312 Hazard es			
	Fire Hazard: Reactive Hazard: Release of Pressure: Acute Health Hazard: Chronic Health Hazard:		No No Yes No	
Other	Sections			
	Component 2-Phosphono-1,2,4-butane tricarboxylic acid	Section 313 Toxic Chemical	Section 302 EHS TPQ	CERCLA RQ

Serious Eye Damage/Eye Irritation:	N/D	
Sensitization:	N/D	
Germ Cell Mutagenicity:	N/D	
Reproductive/Developmental Toxicity:	N/D	
Specific Target Organ Toxicity		
Single Exposure:		N/D
Repeated Exposure:		N/D
Aspiration Hazard:	N/D	
Comments:	None.	

### Section 12. Ecological Information

Species		Duration	Type of Effect	Test Results
Ceriodaphnia dubia		48h	LC50	934 mg/l
Fathead Minnow		96h	LC50	4682 mg/l
Persistence and Biodegradability:	N/D			
Bioaccumulative Potential:	N/D			
Mobility In Soil:	N/D			
Other Adverse Effects:	N/D			
Comments:	Aquatic to	oxicity data is base	ed on testing of a sim	ilar product.





Comments:	None.
State Regulations	
California Proposition 65:	None known.
Special Regulations	
Component	States
2-Phosphono-1,2,4-butane tric	arboxylic acid None.
Compliance Information	
NSF:	N/A
Food Regulations:	N/A
KOSHER:	This product has not been evaluated for Kosher approval.
Halal:	This product has not been evaluated for Halal approval.
FIFRA:	N/A
Other:	None
Comments: N	lone.

#### Section 16. Other Information

Health:	2
Flammability:	0
Physical Hazard:	0
PPE:	X
Notes:	The PPE rating depends on circumstances of use. See Section 8 for recommended PPE. The Hazardous Material Information System (HMIS) is a voluntary, subjective alpha-numeric symbolic system for recommending hazard risk and personal protection equipment information. It is a subjective rating system based on the evaluator's understanding of the chemical associated risks. The end-user must determine if the code is appropriate for their use.

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SAFETY DATA SHEET

Acute Toxicity Dermal – Category 5 Acute Toxicity Inhalation – Category 5 Acute Toxicity Oral – Category 5

H313 May be harmful in contact with skin. H333 May be harmful if inhaled. H303 May be harmful if swallowed.

Chem Treat CL 1495 Cooling Water Treatment Chem Treat, Inc. (800)424–9300 (Toll Free) 5640 Cox Road Glen Allen, VA 23060 (800)648–4579 February 7, 2019 February 7, 2019

19020701AN

No significant health risks are expected from exposures under normal conditions of use.

Classification under 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

Section 1. Chemical Product and Company Identification

WARNING

None. None.

None.

None.

None

Product Name: Product Use: Supplier's Name: Emergency Telephone Number: Address (Corporate Headquarters):

Telephone Number for Information: Date of SDS:

Section 2. Hazard(s) Identification

Revision Date: Revision Number:

Signal Word:

GHS Classification(s):

Hazard Statement(s):

Precautionary Statement(s): Prevention:

Response:

Storage:

Disposal:

Hazards Not Otherwise Classified:

System of Classification Used:





Quadrasperse® CL5859

#### Abbreviations

Abbreviation	Definition
<	Less Than
>	Greater Than
ACGIH	American Conference of Governmental Industrial Hygienists
EHS	Environmental Health and Safety Dept
N/A	Not Applicable
N/D	Not Determined
N/E	Not Established
OSHA	Occupational Health and Safety Dept
PEL	Personal Exposure Limit
STEL	Short Term Exposure Limit
TLV	Threshold Limit Value
TWA	Time Weight Average
UNK	Unknown
Prepared by:	Product Compliance Department; ProductCompliance@chemtreat.com
Revision Date:	February 7, 2019

#### Disclaimer

mendations set forth herein (hereinafter representations as to the completeness o ation as to its suitability for their purposes re use or reliance upon information. No re contra or mode beconder upder with represent safter "information") are presented in good failh and believed to be correct as of the data less or accuracy thereof. Information is supplied upon the condition that the persons receiv poses prior to use. In or event will Chem Treat, Inc. be responsible for damages of any No representation or warranties, whither expressed or implied, of mechanibality, fitness for n and recor makes no

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Quadrasperse® CL5859

**ChemTreat** 





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### Section 3. Composition/Hazardous Ingredients

CAS Registry #	Wt.%
7778-53-2	10 - 30
7320-34-5	5 - 10
	7778-53-2

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#### Section 4. First Aid Measures

Inhalation:	Remove to fresh air and keep at rest in a position comfortable for breathing. Call a poison center or doctor/physician if you feel unwell.
Eyes:	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice/attention.
Skin:	Wash with plenty of soap and water. Call a poison center or doctor/physician if you feel unwell.
Ingestion:	DO NOT INDUCE VOMITING. Rinse mouth. Call a POISON CENTER or doctor/physician if you feel unwell.
Most Important Symptoms:	N/D
Indication of Immediate Medical Attention and Special Treatment Needed, If Necessary:	N/A
Section 5. Fire Fighting Measures	

Flammability of the Product:	Not flammable.
Suitable Extinguishing Media:	Use extinguishing media suitable to surrounding fire.
Specific Hazards Arising from	Product may emit toxic gases or fumes under fire conditions.

Specific Hazar the Chemical: Arising from Product may er



Protective Equipment:

Personal Precautions:

Environmental Precautions:

Section 7. Handling and Storage

Methods for Cleaning up: Other Statements:

Handling:

Storage:

Exposure Limits

Potassium phosphate, tribasic Tetrapotassium pyrophosphate

Engineering Controls:

Component

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Section 6. Accidental Release Measures

None.

Section 8. Exposure Controls/Personal Protection



If product is involved in a fire, wear full protective clothing including a positive-pressure, NIOSH approved, self-contained breathing apparatus.

Use appropriate Personal Protective Equipment (PPE). Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains, and sewers.

Contain and recover liquid when possible. Flush spill area with water spray.

Wear appropriate Personal Protective Equipment (PPE) when handling this product. Do not get in eyes, or on skin and clothing. Wash thoroughly after handling. Do not ingest. Avoid breathing vapors, mist or dust.

Store away from incompatible materials (see Section 10). Store at ambient temperatures. Keep container securely closed when not in use. Label precautions also apply to empty container. Recondition or dispose of empty containers in accordance with government regulations. For Industrial use only. Store above Freeze Point.

Exposure Limits

Use only with adequate ventilation. The use of local ventilation is recommended to control emission near the source.

Source

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N/E N/E





Eyes:	Wear chemical splash goggles or safety glasses with full-face shield. Maintain eyewash fountain in work area.
Skin:	Maintain quick-drench facilities in work area. Wear butyl rubber or neoprene gloves. Wash them after each use and replace as necessary. If conditions warrant, wear protective clothing such as boots, aprons, and coveralls to prevent skin contact.
Respiratory:	If misting occurs, use NIOSH approved organic vapor/acid gas dual cartridge respirator with a dust/mist prefilter in accordance with 29 CFR 1910.134.

### Section 9. Physical and Chemical Properties

Physical State and Appearance: Specific Gravity: pH: Freezing Point: Flash Point: Flash Point: Odor: Melting Point: Initial Boiling Point and Boiling Range: Solubility in Water: Evaporation Rate: Vapor Density: Molecular Weight: Viscosity: Flammability (solid, gas): Gar Dressure: Vapor Pressure: Vapor Pressure: Vapor Pressure: Vapor Aresshold n-octanol Partition Coefficient n-octanol Partition Coefficient Decomposition Temperature N/D N/D

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### Section 10. Stability and Reactivity

Chemical Stability:	Stable at normal temperatures and pressures.
Incompatibility with Various Substances:	Strong oxidizers, Strong acids.
Hazardous Decomposition Products:	Oxides of carbon, Oxides of phosphorus.
Possibility of Hazardous Reactions:	None known.
Reactivity:	N/D
Conditions To Avoid:	N/D

#### Section 11. Toxicological Information

Acute	Toxicity	

Chemical Name	Exposure	Type of Effect	Concentration	Species
Tetrapotassium pyrophosphate	Oral	LD50	2980 MG/KG	Rat
	Dermal	LD50	>7940 MG/KG	Rabbit
Carcinogenicity Category				
Component	Source		Brief Description	
Potassium phosphate, tribasic	N/E	N/E	N/E	
Tetrapotassium pyrophosphate	N/E	N/E	N/E	
Symptoms Inhalation:	N/D			
Eye Contact:	N/D			
Eye Contact: Skin Contact:	N/D N/D			

|--|

Serious Eye Damage/Eye Irritation:	N/D
Sensitization:	N/D
Germ Cell Mutagenicity:	N/D
Reproductive/Developmental Toxicity:	N/D
Specific Target Organ Toxicity	
Single Exposure:	N/D
Repeated Exposure:	N/D
Aspiration Hazard:	N/D
Comments:	None.

#### Section 12. Ecological Information

Ecotoxicity				
Species		Duration	Type of Effect	Test Results
Ceriodaphnia dubia		48h	LC50	1048 mg/l
Fathead Minnow		96h	LC50	1768 mg/l
Persistence and Biodegradability:	N/D			
Bioaccumulative Potential:	N/D			
Mobility In Soil:	N/D			
Other Adverse Effects:	N/D			
Comments:	None.			





# Section 13. Disposal Considerations

Dispose of in accordance with local, state and federal regulations.

N/A

#### Section 14. Transport Information

Controlling Regulation	UN/NA#:	Proper Shipping Name:	Technical Name:	Hazard Class:	Packing Group:
DOT	N/A	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	N/A	N/A
IMDG	N/A	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	N/A	N/A
ICAO	N/A	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	N/A	N/A
TDG	N/A	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	N/A	N/A
SCT	N/A	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	N/A	N/A

Note:

# Section 15. Regulatory Information

Inventory Status

United States (TSCA): Canada (DSL/NDSL):

All ingredients listed. All ingredients listed.





#### Federal Regulations

SARA Title III Rules

Sections 311/312 Hazard Classes				
Fire Hazard: Reactive Hazard: Release of Pressure: Acute Health Hazard: Chronic Health Hazard:			No No Yes No	
Other Sections				
		Section 313	Section 302 EHS	
Component		Toxic Chemical	TPQ	CERCLA RO
Potassium phosphate, tribasic		N/A	N/A	N/A
Tetrapotassium pyrophosphate		N/A	N/A	N/A
Comments:	None.			
State Regulations				
California Proposition 65: None known.				
Special Regulations				
Component	Sta	tes		
Potassium phosphate, tribasic	Nor	ne.		
Tetrapotassium pyrophosphate	Nor	ne.		
Compliance Information				

	NSF:		N/A
	Food Regulations:		N/A
	KOSHER:		This product has not been evaluated for Kosher approval.
	Halal:		This product has not been evaluated for Halal approval.
	FIFRA:		N/A
	Other:		None
Comn	nents:	None.	

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### Section 16. Other Information

HMIS Hazard Rating				
Health: Flammability: Physical Hazard: PPE:	1 0 0 X			
Notes:	The PPE rating depends on circumstances of use. See Section 8 for recommended PPE. The Hazardous Material Information System (HMIS) is a voluntary, subjective alpha-numeric symbolic system for recommending hazard risk and personal protection equipment information. It is a subjective rating system based on the evaluator's understanding of the chemical associated risks. The end-user must determine if the code is appropriate for their use.			

their use.

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Abbreviations

Abbreviation	Definition
<	Less Than
>	Greater Than
ACGIH	American Conference of Governmental Industrial Hygienists
EHS	Environmental Health and Safety Dept
N/A	Not Applicable
N/D	Not Determined
N/E	Not Established
OSHA	Occupational Health and Safety Dept
PEL	Personal Exposure Limit
STEL	Short Term Exposure Limit
TLV	Threshold Limit Value
TWA	Time Weight Average
UNK	Unknown

Prepared by: Revision Date: Product Compliance Department; ProductCompliance@chemtreat.com February 7, 2019





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# SAFETY DATA SHEET



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Product identifier	BL1746		
	BL1746		
Other means of identification Product code	C-SERIES™ BL1746		
Recommended use	Boiler Water Treatment		
Recommended restrictions	None known.		
Manufacturer/Importer/Supplier			
Manufacturer			
Company name	ChemTreat, Inc.		
Address	5640 Cox Road		
	Glen Allen, VA 23060 United States		
Telephone	001648-4579		
Website	chemtreat.com		
E-mail	productcompliance@chemtreat.com		
Emergency phone number	800-424-9300		
2. Hazard(s) identification	1		
Physical hazards	Not classified.		
Health hazards	Skin corrosion/irritation	Category 1B	
	Serious eye damage/eye irritation	Category 1	
Environmental hazards	Not classified.		
OSHA defined hazards	Not classified		
abel elements			
Signal word	Danger		
Hazard statement	Causes severe skin burns and eye damage	e. Causes serious eye damage.	
Precautionary statement			
Prevention	Do not breathe mist/vapors. Wash thorougl clothing/eye protection/face protection.	hly after handling. Wear protectiv	ve gloves/protective
Response	If swallowed: Rinse mouth. Do NOT induce contaminated clothing. Rinse skin with wat keep comfortable for breathing. If in eyes: f Remove contact lenses, if present and eas center/doctor. Wash contaminated clothing	er/shower. If inhaled: Remove pe Rinse cautiously with water for se y to do. Continue rinsing. Immed	erson to fresh air and everal minutes.
Storage	Store locked up.		
Disposal	Dispose of contents/container in accordance	e with local/regional/national/inte	ernational regulations.
Hazard(s) not otherwise classified (HNOC)	None known.		
Supplemental information	None.		
3. Composition/informati	on on ingredients		
Mixtures			
Chemical name	Common name and synonyms	CAS number	%

Material name: BL1746 C-SERIES™ BL1746 Version #: 01 Issue date: 05-08-2023

Components	Туре	Value	
Sodium hydroxide (CAS 1310-73-2)	PEL	2 mg/m3	
US. ACGIH Threshold Lim	it Values (TLV)		
Components	Туре	Value	
Sodium hydroxide (CAS 1310-73-2)	Ceiling	2 mg/m3	
	erous to Life or Health (IDLH) Values,	as amended	
Components	Туре	Value	
Sodium hydroxide (CAS 1310-73-2)	IDLH	10 mg/m3	
	to Chemical Hazards Recommended I		
Components	Туре	Value	
Sodium hydroxide (CAS 1310-73-2)	Ceiling	2 mg/m3	
ological limit values	No biological exposure limits noted for	or the ingredient(s).	
ppropriate engineering ntrols	Good general ventilation should be used. Ventilation rates should be matched to conditions. I applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not bee established, maintain airborne levels to an acceptable level. Eye wash facilities and emergen shower must be available when handling this product.		
dividual protection measure	s, such as personal protective equipm	nent	
Eye/face protection	Wear safety glasses with side shield	s (or goggles) and a face shield.	
Skin protection			
Hand protection	Wear appropriate chemical resistant	gloves.	
Other	Wear appropriate chemical resistant	clothing.	
Respiratory protection	In case of insufficient ventilation, we	ar suitable respiratory equipment.	
Thermal hazards	Wear appropriate thermal protective	clothing, when necessary.	
eneral hygiene nsiderations		ene measures, such as washing after handling the material moking. Routinely wash work clothing and protective	
. Physical and chemica			

Appearance		
Physical state	Liquid.	
Form	Liquid.	
Color	Colorless.	
Odor	Mild	
Odor threshold	Not available.	
pH	12.5 - 14	
Melting point/freezing point	28.40 °F (-2.00 °C)	
Initial boiling point and boiling range	Not available.	
Flash point	Not available.	
Evaporation rate	Not available.	
Flammability (solid, gas)	Not applicable.	
Upper/lower flammability or exp	losive limits	
Explosive limit - lower (%)	Not available.	
Explosive limit - upper (%)	Not available.	
Vapor pressure	Not available.	
Vapor density	Not available.	
Relative density	Not available.	
Material name: BL1746 C-SERIES™ BL1746 Version #: 01	Issue date: 05-08-2023	sps us 3 / 8

Material name: BL174	6	
C-SERIES™ BL1746	Version #: 01	Issue date: 05-08-2023

Inhalation	Move to fresh air. Call a physician if symptoms develop or persist.	
Skin contact	Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a physician or	
	poison control center immediately. Chemical burns must be treated by a physician. Wash contaminated clothing before reuse.	
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control center immediately	
Ingestion	Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.	
Most important symptoms/effects, acute and delayed	Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.	
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Chemical burns: Flush with wat immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing transport to hospital. Keep victim under observation. Symptoms may be delayed.	
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.	
5. Fire-fighting measures		
Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).	
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.	
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.	
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.	
Fire fighting equipment/instructions	Move containers from fire area if you can do so without risk.	
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.	
General fire hazards	No unusual fire or explosion hazards noted.	
6. Accidental release meas		
Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spillileak. Wear appropriate protective equipment and clothing during clean-up. Do not breather mist/upports. Do to touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authonities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.	
Methods and materials for containment and cleaning up	Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible, Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.	
	Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.	
	Never return spills to original containers for re-use. For waste disposal, see section 13 of the SD	
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.	
7. Handling and storage		
Precautions for safe handling	Do not breathe mist/vapors. Do not get in eyes, on skin, or on clothing. Avoid prolonged exposur Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygine practices.	
Conditions for safe storage, including any incompatibilities	Store locked up. Store in tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).	
8. Exposure controls/perse	onal protection	
Occupational exposure limits The following constituents are	<ul> <li>constituents of the product which have a PEL, TLV or other recommended exposure limit ins have no known exposure limits.</li> </ul>	

Material name: BL1746 C-SERIES™ BL1746 Version #: 01 Issue date: 05-08-2023

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Solubility(ies)			
Solubility (water)	Not available.		
Partition coefficient (n-octanol/water)	Not available.		
Auto-ignition temperature	Not available.		
Decomposition temperature	Not available.		
liscosity	0 - 200 cps		
Other information			
Explosive properties	Not explosive.		
Oxidizing properties	Not oxidizing.		
Pounds per gallon	9.22		
Specific gravity	1.09 - 1.11 @ 20°C		
10. Stability and reactivity	ty		
Reactivity	, ,	s product may react with oxidizing agents.	
Chemical stability	Material is stable under normal condit		
Possibility of hazardous reactions	Hazardous polymerization does not o		
Conditions to avoid	Contact with incompatible materials.	Do not mix with other chemicals.	
Incompatible materials	Strong acids. Oxidizing agents.		
Hazardous decomposition products	No hazardous decomposition product	s are known.	
11. Toxicological inform	ation		
Information on likely routes of	exposure		
Inhalation	May cause irritation to the respiratory	system. Prolonged inhalation may be harmful.	
Skin contact	Causes severe skin burns.		
Eye contact	Causes serious eye damage.		
Ingestion	Causes digestive tract burns.		
Symptoms related to the physical, chemical and toxicological characteristics		Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including	
Information on toxicological ef	ffects		
Acute toxicity	Not known.		
Components	Species	Test Results	
Sodium hydroxide (CAS 1310-73	· ·		
Acute	,		
Dermal			
LD50	Rabbit	1350 mg/kg	
Oral			
LD50	Rat	140 - 340 mg/kg	
Skin corrosion/irritation	Causes severe skin burns and eye da	mage.	
Serious eye damage/eye irritation	Causes serious eye damage.		
Respiratory or skin sensitization	on		
Respiratory sensitization	Not a respiratory sensitizer.		
Skin sensitization	This product is not expected to cause	skin sensitization.	
Germ cell mutagenicity	No data available to indicate product o mutagenic or genotoxic.	or any components present at greater than 0.1% are	
	Not classifiable as to carcinogenicity t	e humane	
Carcinogenicity	Not diabalitable as to carellogeniony t	o numans.	
	I Evaluation of Carcinogenicity	o numans.	

Not regulated. US. National Toxicology Pro	ogram (NTP)	Report on Carcinogens	
Not listed.			
Reproductive toxicity	This produc	t is not expected to cause reproductive or de	velopmental effects.
Specific target organ toxicity - single exposure	Not classified.		
Specific target organ toxicity - repeated exposure	Not classifi	ed.	
Aspiration hazard	Not an aspi	ration hazard.	
Chronic effects	Prolonged i	nhalation may be harmful.	
12. Ecological information	n		
Ecotoxicity		t is not classified as environmentally hazardo hat large or frequent spills can have a harmfu	
Product		Species	Test Results
BL1746			
Aquatic			
Acute	5050		. 750 // 401 // 5 / 1
Crustacea	EC50	Daphnia	> 752 mg/l, 48 hours (Estimated)
	LC50	Daphnia pulex	> 100 mg/l, 48 hours (Estimated)
Fish	LC50	Fathead minnow (Pimephales promelas)	• • • • •
		Fish	> 2717 mg/l, 96 hours (Estimated)
Components		Species	Test Results
Sodium hydroxide (CAS 1310	-73-2)		
Aquatic			
Acute			
Crustacea	EC50	Water flea (Ceriodaphnia dubia)	>= 34.59 - <= 47.13 mg/l, 48 hours
Fish	LC50	Western mosquitofish (Gambusia affinis)	•
Persistence and degradability		available on the degradability of any ingredier	nts in the mixture.
Bioaccumulative potential	No data av		
Mobility in soil	No data av		
Other adverse effects		lverse environmental effects (e.g. ozone depl ndocrine disruption, global warming potential)	
13. Disposal consideratio	ns		
Disposal instructions	the materia	this material and its container to hazardous o I under controlled conditions in an approved in ce with local/regional/national/international re	ncinerator. Dispose of contents/containe
Local disposal regulations	Dispose in	accordance with all applicable regulations.	
Hazardous waste code	D002: Waste Corrosive material [pH $\leq 2$ or $\approx$ >12.5, or corrosive to steel] The waste code should be assigned in discussion between the user, the producer and the waste disposal company.		
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).		
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container i emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.		
14. Transport information	1		
DOT			
UN number UN proper shipping name	UN1824 Sodium hyd	droxide solution	
Material name: BL1746			808



On inventory (yes/no)\*

Yes

Yes

No

Yes Yes

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Transport hazard class(es)	
Class	8
Subsidiary risk	-
Label(s)	8
Packing group	П
Environmental hazards	
Marine pollutant	No.
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	B2, IB2, N34, T7, TP2
Packaging exceptions	154
Packaging non bulk	202
Packaging bulk	242
IATA	
UN number	UN1824
UN proper shipping name	Sodium hydroxide solution
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	
Environmental hazards ERG Code	No. 81
	8L Read safety instructions, SDS and emergency procedures before handling.
Other information	Read salety instructions, 303 and emergency procedures before handling.
Passenger and cargo	Allowed with restrictions.
aircraft	Allowed with real follows.
Cargo aircraft only	Allowed with restrictions.
IMDG	
UN number	UN1824
UN proper shipping name	SODIUM HYDROXIDE SOLUTION
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	Ш
Environmental hazards	
Marine pollutant	No.
EmS	F-A, S-B
	Read safety instructions, SDS and emergency procedures before handling.
Transport in bulk according to	Not established.
Annex II of MARPOL 73/78 and	
the IBC Code	
DOT	
~	
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Country(s) or region	Inventory name	On inventory (yes/no)*
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes
	ents of this product comply with the inventory requirements administered by the gr components of the product are not listed or exempt from listing on the inventory are	
mpliance Information: Halal		

Compliance Information: Kosher

ance Information: Kosher This product is certified by the Orthodox Unionas Kosher pareve The following facilitie(s) are under the supervision of the Kashruth Division of the Orthodox Union (OU) and are Kosher as indicated below. Ashiand, VA Eldridge, IA Nederland, TX

Compliance Information: Food Regulations FDA: All ingredients in this product are authorized in 21 CFR 173.310 for use as "Boiler Water Additives" where the steam may contact food.

Issue date	05-08-2023
Version #	01
HMIS® ratings	Health: 3 Flammability: 0 Physical hazard: 0 Personal protection: B
Disclaimer	ChemTreat, Inc. cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and be assume liability for loss, injury, damage or expense due to improper uses. The information in the sheet was written based on the best knowledge and experience currently available. Although the information and recommediations set for therein (hereinather "information") are presented in good faith and believed to be correct as of the date hereof. ChemTreat, Inc. makes no representations as to the completeness or accuracy therein (Information is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for their purposes prior to use. In o even will IChemTreat, Inc. be responsible for damages of any nature whatsoever resulting from the use or reliance upon information. No representation or warrantes, either expressed or implied, or dimerchantability, fitness for a particular purpose, or of any other nature are made hereunder with respect to information or the product to which information refers.
Other information	Prepared by: Product Compliance Department; ProductCompliance@chemtreat.com

Inventory name

Australian Inventory of Industrial Chemicals (AICIS)

Inventory of Existing Chemical Substances in China (IECSC) European Inventory of Existing Commercial Chemical Substances (EINECS)

Domestic Substances List (DSL) Non-Domestic Substances List (NDSL)

IATA; IMDG

Not listed.

US state regulations

International Inventories Country(s) or region

Australia

Canada

Canada

China

Europe

Material name: BL1746 C-SERIES™ BL1746 Version #: 01 Issue date: 05-08-2023



# SAFETY DATA SHEET

1. Identification			
Product identifier	BL1744		
Other means of identification			
Product code	BL1744		
Recommended use	Boiler Water Treatment		
Recommended restrictions	None known.		
Nanufacturer/Importer/Supplie Nanufacturer	r/Distributor information		
Company name	ChemTreat		
Address	5640 Cox Road		
	Glen Allen, VA 23060 United States		
Telephone	800-648-4579		
E-mail	Not available.		
Emergency phone number	800-424-9300		
2. Hazard(s) identificatio	n		
Physical hazards	Not classified.		
lealth hazards	Skin corrosion/irritation	Category 1B	
	Serious eye damage/eye irritation	Category 1	
Invironmental hazards	Not classified.		
SHA defined hazards	Not classified.		
abel elements			
Signal word	Danger		
Hazard statement	Causes severe skin burns and eye damage	. Causes serious eye damage.	
Precautionary statement			
Prevention	Do not breathe mist/vapors. Wash thorough clothing/eye protection/face protection.	ly after handling. Wear protectiv	ve gloves/protective
Response	If swallowed: Rinse mouth. Do NOT induce contaminated clothing. Rinse skin with wate keep comfortable for breathing. If in eyes: F Remove contact lenses, if present and easy center/doctor. Wash contaminated clothing	r/shower. If inhaled: Remove pe tinse cautiously with water for se to do. Continue rinsing. Immed	erson to fresh air and everal minutes.
Storage	Store locked up.		
Disposal	Dispose of contents/container in accordance	e with local/regional/national/inte	ernational regulations.
lazard(s) not otherwise lassified (HNOC)	None known.		
Supplemental information	None.		
3. Composition/informat	ion on ingredients		
Aixtures			
Chemical name	Common name and synonyms	CAS number	%
Sodium hydroxide		1310-73-2	3 - < 5
Other components below repo	ortable levels		90 - 100
Material name: BL1744			SDS US

Components	Туре	Value	
Sodium hydroxide (CAS 1310-73-2)	PEL	2 mg/m3	
US. ACGIH Threshold Limit Components	Values Type	Value	
Sodium hydroxide (CAS			
1310-73-2)	Ceiling	2 mg/m3	
US. NIOSH: Pocket Guide to Components	o Chemical Hazards Type	Value	
Sodium hydroxide (CAS 1310-73-2)	Ceiling	2 mg/m3	
Biological limit values	No biological exposure limits noted for	for the ingredient(s).	
Appropriate engineering controls	applicable, use process enclosures, maintain airborne levels below recon	used. Ventilation rates should be matched to conditions. If local exhaust ventilation, or other engineering controls to mmended exposure limits. If exposure limits have not been to an acceptable level. Eye wash facilities and emergency ding this product.	
	such as personal protective equipm		
Eye/face protection	Wear safety glasses with side shield	is (or goggies) and a face shield.	
Skin protection			
Hand protection	Wear appropriate chemical resistant	t gloves.	
Other	Wear appropriate chemical resistant	t clothing.	
Respiratory protection	In case of insufficient ventilation, we	ar suitable respiratory equipment.	
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.		
General hygiene considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.		
9. Physical and chemical	properties		
Appearance			
Physical state	Liquid.		
Form	Liquid.		
Color	Light Straw		
Ddor	Mild		
	Not available.		
Odor threshold			
Ddor threshold bH	12 - 14		
	12 - 14 23.00 °F (-5.00 °C)		
н			
oH Melting point/freezing point nitial boiling point and boiling	23.00 °F (-5.00 °C)		
oH Melting point/freezing point nitial boiling point and boiling ange	23.00 °F (-5.00 °C) Not available.		
DH Melting point/freezing point nitial boiling point and boiling ange Flash point	23.00 °F (-5.00 °C) Not available. Not available.		
DH Melting point/freezing point nitial boiling point and boiling ange Flash point Evaporation rate	23.00 °F (-5.00 °C) Not available. Not available. Not available. Not applicable.		
H Aelting point/freezing point nitial boiling point and boiling ange "lash point Evaporation rate Flammability (solid, gas)	23.00 °F (-5.00 °C) Not available. Not available. Not available. Not applicable.		
oH Metting point/freezing point initial boiling point and boiling ange "lash point 'saporation rate "lammability (solid, gas) Jpper/lower flammability or exp Flammability limit - lower	23.00 °F (-5.00 °C) Not available. Not available. Not available. Not applicable. Josive limits		
H delting point/freezing point mitial boiling point and boiling ange "lash point "supportion rate "ammability (solid, gas) Jpper/lower flammability or exp Flammability limit - lower (%) Flammability limit - upper	23.00 "F (-5.00 "C) Not available. Not available. Not available. Not available. Josive limits Not available.		
H deting point/freezing point mital boiling point and boiling ange lash point Evaporation rate lammability (solid, gas) pper/lower flammability limit - lower (%) Flammability limit - upper (%)	23.00 "F (-5.00 "C) Not available. Not available. Not available. Not applicable. Josive limits Not available. Not available.		
oH Melting point/freezing point nitial boiling point and boiling ange "lash point Evaporation rate "lammability (solid, gas) Jpperflower flammability or exp Flammability limit - lower (%) Flammability limit - upper (%) Explosive limit - lower (%)	23.00 °F (-5.00 °C) Not available. Not available. Not available. Not applicable. <b>Josive limits</b> Not available. Not available.		
H delting point/freezing point mitial boiling point and boiling ange "lash point "lash point "lasm point lasm point lasm point per/lower flammability innik - upwer (%) Flammability limik - upwer (%) Explosive limit - lower (%) Explosive limit - upper (%)	23.00 °F (-5.00 °C) Not available. Not available. Not available. Not applicable. Josivo limits Not available. Not available. Not available.		

Material name: BL1744 BL1744 Version #: 01 Issue date: 03-03-2022

4. First-aid measures	
Inhalation	Move to fresh air. Call a physician if symptoms develop or persist.
Skin contact	Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a physician o poison control center immediately. Chemical burns must be treated by a physician. Wash contaminated clothing before reuse.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control center immediately.
Ingestion	Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
Most important symptoms/effects, acute and delayed	Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Chemical burns: Flush with wa immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim under observation. Symptoms may be delayed.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.
5. Fire-fighting measures	
Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	Move containers from fire area if you can do so without risk.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	No unusual fire or explosion hazards noted.
6. Accidental release mea	sures
Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist/vapors. Do i touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authonities should be advised if significant spillages cannot b contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.
	Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.
	Never return spills to original containers for re-use. For waste disposal, see section 13 of the SE
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.
7. Handling and storage	
Precautions for safe handling	Do not breathe mist/vapors. Do not get in eyes, on skin, or on clothing. Avoid prolonged exposu Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities	Store locked up. Store in tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).
8. Exposure controls/pers	onal protection
	the only constituents of the product which have a PEL, TLV or other recommended exposure limitents have no known exposure limits.
	909

Material name: BL1744 BL1744 Version #: 01 Issue date: 03-03-2022

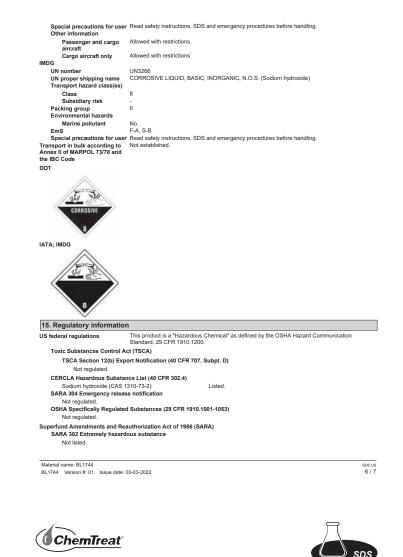
sos us 2 / 7

single exposure	
Specific target organ toxicity -	Not classified.
Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Not listed.	······································
Not regulated. US. National Toxicology Pr	ogram (NTP) Report on Carcinogens
	ed Substances (29 CFR 1910.1001-1053)
Not listed.	
IARC Monographs. Overall	Evaluation of Carcinogenicity
Carcinogenicity	Not classifiable as to carcinogenicity to humans.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Skin sensitization	This product is not expected to cause skin sensitization.
Respiratory sensitization	Not a respiratory sensitizer.
Respiratory or skin sensitizatio	
irritation	
Serious eye damage/eye	Causes serious eye damage.
Skin corrosion/irritation	Causes severe skin burns and eye damage.
Acute toxicity	Not known.
Information on toxicological eff	ects
Symptoms related to the physical, chemical and toxicological characteristics	Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.
Ingestion	Causes digestive tract burns.
Eye contact	Causes serious eye damage.
Skin contact	Causes severe skin burns.
Inhalation	May cause irritation to the respiratory system. Prolonged inhalation may be harmful.
nformation on likely routes of	
11. Toxicological informa	ition
products	
lazardous decomposition	No hazardous decomposition products are known.
ncompatible materials	Strong acids. Oxidizing agents.
Conditions to avoid	Contact with incompatible materials. Do not mix with other chemicals.
reactions	nazardoda polymonzation does not occur.
Chemical stability Possibility of hazardous	Hazardous polymerization does not occur.
Reactivity	Reacts violently with strong acids. This product may react with oxidizing agents. Material is stable under normal conditions.
10. Stability and reactivit	
VOC	0 %w/w
Pounds per gallon Specific gravity	9.01 1.16 - 1.17 @ 20C
Oxidizing properties	9.81
Explosive properties	Not explosive. Not oxidizing.
Other information	
Viscosity	0 - 200 cps
Decomposition temperature	Not available.
Auto-ignition temperature	Not available.
(n-octanol/water)	
Solubility (water) Partition coefficient	Not available. Not available.

repeated exposure					
Aspiration hazard	Not an aspiration hazard.				
Chronic effects	Prolonged inhalation may be	harmful.			
12. Ecological information					
Ecotoxicity			ous. However, this does not exclude the Il or damaging effect on the environment		
Product	Species		Test Results		
BL1744					
Aquatic					
Acute					
Crustacea I	.C50 Water flea (C	eriodaphnia dubia)	1768 mg/l, 48 hours		
Fish I	.C50 Fathead mini	ow (Pimephales promelas)	3536 mg/l, 96 hours		
Persistence and degradability	No data is available on the d	egradability of any ingredie	nts in the mixture.		
Bioaccumulative potential	No data available.	-3,,,3			
	No data available.				
Mobility in soil					
Other adverse effects			letion, photochemical ozone creation ) are expected from this component.		
13. Disposal consideration	IS				
Disposal instructions		ditions in an approved incir	ensed waste disposal site. Incinerate the nerator. Dispose of contents/container in ulations.		
Local disposal regulations	Dispose in accordance with	all applicable regulations.			
Hazardous waste code	D002: Waste Corrosive material [pH <=2 or =>12.5, or corrosive to steel] The waste code should be assigned in discussion between the user, the producer and the waste disposal company.				
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).				
Contaminated packaging			llow label warnings even after container ved waste handling site for recycling or		
14. Transport information					
DOT					
UN number	UN3266				
UN proper shipping name	Corrosive liquid, basic, inorg	anic, n.o.s. (Sodium hydroxi	ide RQ = 22727 LBS)		
Transport hazard class(es)					
Class	8				
Subsidiary risk	-				
Label(s)	8				
Packing group	11				
Special precautions for user	Read safety instructions, SD	S and emergency procedure	es before handling.		
Special provisions	B2, IB2, T11, TP2, TP27				
Packaging exceptions	154				
Packaging non bulk	202				
Packaging bulk	242				
ATA					
UN number	UN3266				
UN proper shipping name	Corrosive liquid, basic, inorg	anic, n.o.s. (Sodium hydroxi	ide)		
Transport hazard class(es) Class	8				
	8				
Subsidiary risk	-				
Packing group					
Environmental hazards ERG Code	No. 8L				
Material name: BL1744			sos 5		
BL1744 Version #: 01 Issue date: 0	13-03-2022		5.		

Specific target organ toxicity - Not classified.

SARA 311/312 Hazardous chemical	Yes
Classified hazard categories	Skin corrosion or irritation Serious eye damage or eye irritation
SARA 313 (TRI reporting) Not regulated.	
Other federal regulations	
Clean Air Act (CAA) Section	112 Hazardous Air Pollutants (HAPs) List
, ,	112(r) Accidental Release Prevention (40 CFR 68.130)
Not regulated.	
Safe Drinking Water Act (SDWA)	Not regulated.
US state regulations	
	Vater and Toxic Enforcement Act of 1986 (Proposition 65): This material ny chemicals currently listed as carcinogens or reproductive toxins. For ww.P65Warnings.ca.gov.
US. California. Candidat subd. (a))	te Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3,
Sodium hydroxide (C	AS 1310-73-2)
International Inventories	
Country(s) or region	Inventory name On inventory (yes/no)
Canada	Domestic Substances List (DSL) Ye
Canada	Non-Domestic Substances List (NDSL) No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory Ye
	ents of this product comply with the inventory requirements administered by the governing country(s) components of the product are not listed or exempt from listing on the inventory administered by the governing
Compliance Information: Food F 21 CFR 173.310	tegulations
16. Other information, inc	luding date of preparation or last revision
Issue date	03-03-2022
Version #	01
HMIS® ratings	Health: 3 Flammability: 0 Physical hazard: 0 Personal protection: B
Disclaimer	Chem Treat cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expenses due to improve use. The information in the sheet was written based on the best knowledge and experience currently available. Although the information and recommendiations set forth herein hereinater "information" and re- presentations as to the completeness or accuracy thereof. Information 'are presented in condition that the persons receiving same will make their own determination as to its suitability for their purposes prior to use. In o event will Chem Treat, Inc. be responsible for damages of any nature whatsoever resulting from the use or reliance upon information. No representation or warranities, either expressed or implied, of merchanability, filteres for a particular purpose, or dany other nature are made hereunder with respect to information or the product to which information refers.
Other information	Prepared by: Product Compliance Department; ProductCompliance@chemtreat.com





#### Section 1. Chemical Product and Company Identification

Product Name: Product Use: Supplier's Name: Emergency Telephone Number: Address (Corporate Headquarters):	
Telephone Number for Information: Date of SDS: Revision Date: Revision Number:	

ChemTreat BL1794 Boiler Water Treatment ChemTreat, Inc. (800)424-9300 (Toll Free) 5640 Cox Road Clap Allop VA 22060 Glen Allen, VA 23060 (800)648-4579 February 7, 2019 February 7, 2019 19020701AN

#### Section 2. Hazard(s) Identification

Word:	WARNING
Word:	WARNING

GHS Classification(s):

Precautionary Statement(s):

Prevention:

Hazard Statement(s):

Signal

Eye damage/irritation – Category 2b Skin corrosion/irritation – Category 2 Acute Toxicity Inhalation – Category 4 Acute Toxicity Oral – Category 4

H320 Causes eye irritation. H315 Causes skin irritation. H332 Harmful if inhaled. H302 Harmful if swallowed.

P264 Wash thoroughly after handling. P270 Do not eat, drink, or smoke when using this product. P261 Avoid breathing dust/filme/gas/mist/vapors/spray. P271 Use only outdoors or in a well–ventilated area. P280 Wear protective gloves/protective clothing/eye protection/face protection.



Response:

Storage:

Disposal:

Hazards Not Otherwise Classified:

Component

Comments

Sodium phosphate, tribasic

System of Classification Used:



P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth. P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing P312 Call a POISON CENTER or doctor/physician if you feel unwell

you feel unwell. P302 + P352 IF ON SKIN: Wash with plenty of soap and water. P332 + P313 If skin irritation develops or persists, get medical advice/attention. P362 + P364 Take off contaminated clothing and wash

P362 + P364 Take oft contaminated clothing and wash it before reuse. P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337 + P313 If eye irritation persists, get medical advice/attention.

Classification under 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

If chemical identity and/or exact percentage of composition has been withheld, this information is considered to be a trade secret.

CAS Registry #

7601-54-9





#### Section 4. First Aid Measures

Inhalation:	Remove to fresh air and keep at rest in a position comfortable for breathing. Call a poison center or doctor/physician if you feel unwell.
Eyes:	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice/attention.
Skin:	Wash with plenty of soap and water. Take off contaminated clothing and wash before re-use. If skin irritation occurs, seek medical advice/attention.
Ingestion:	DO NOT INDUCE VOMITING. Rinse mouth. Call a POISON CENTER or doctor/physician.
Most Important Symptoms:	N/D
Indication of Immediate Medical Attention and Special Treatment Needed, If Necessary:	N/A

#### Section 5. Fire Fighting Measures

Flammability of the Product:	Not flammable.
Suitable Extinguishing Media:	Use extinguishing media suitable to surrounding fire.
Specific Hazards Arising from the Chemical:	None known.
Protective Equipment:	If product is involved in a fire, wear full protective clothing including a positive-pressure, NIOSH approved, self-contained breathing apparatus.

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None.

None.

None

Section 3. Composition/Hazardous Ingredients

ChemTreat BL1794

Wt.%

1 - 5

ChèmTreat



#### Section 6. Accidental Release Measures

Personal Precautions:	Use appropriate Personal Protective Equipment (PPE).
Environmental Precautions:	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains, and sewers.
Methods for Cleaning up:	Contain and recover liquid when possible. Flush spill area with water spray.
Other Statements:	If RQ (Reportable Quantity) is exceeded, report to National Spill Response Office at 1-800-424-8802.

#### Section 7. Handling and Storage

Handling:	Wear appropriate Personal Protective Equipment (PPE) when handling this product. Do not get in eyes, or on skin and clothing. Wash thoroughly after handling. Do not ingest. Avoid breathing vapors, mist or dust.
Storage:	Store away from incompatible materials (see Section 10). Store at ambient temperatures. Keep container securely closed when not in use. Label precautions also apply to empty container. Recondition or dispose of empty containers in accordance with government regulations. For Industrial use only. Store above Freeze Point.

#### Section 8. Exposure Controls/Personal Protection

Exposure Limits		
Component	Source	Exposure Limits
Sodium phosphate, tribasic	N/E	N/E
Engineering Controls:		quate ventilation. The use of local ventilation is control emission near the source.





ChemTreat BL1794

#### Personal Protection

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Eyes: Skin:

Wear chemical splash goggles or safety glasses with full-face shield. Maintain eyewash fountain in work area.

Maintain quick-drench facilities in work area. Wear butyl rubber or neoprene gloves. Wash them after each use and replace as necessary. If conditions warrant, wear protective clothing such as boots, aprons, and coveralls to prevent skin contact.

If misting occurs, use NIOSH approved organic vapor/acid gas dual cartridge respirator with a dust/mist prefilter in accordance with 29 CFR 1910.134.

Respiratory:

#### Section 9. Physical and Chemical Properties

Physical State and Appearance: Specific Gravity: PH: Freezing Point: Flash Point: Odor: Melting Point: Initial Boiling Point and Boiling Range: Solubility in Water: Evaporation Rate: Vapor Density: Molecular Weight: Viscosity: Flammability (solid, gas): Flammability (solid, gas): Flammability (solid, gas): Flammability (solid, gas): Vapor Pressure: Vapor Pressure: % VOC:	Liquid, Colorless, Clear 1.040 @ 20°C 12.1 @ 20°C 12.1 @ 20°C N/D Odorless N/D 2/2°F Complete 4 N/D N/D N/D N/A N/A N/A N/A N/A N/A N/A N/A
n-octanol Partition Coefficient Decomposition Temperature	N/D N/D









Test Res 2158 mg/ 2682 mg/ 1463 mg/

# Section 10. Stability and Reactivity

Chemical Stability:	Stable at normal temperatures and pressures.
Incompatibility with Various Substances:	Strong oxidizers, Acids.
Hazardous Decomposition Products:	Oxides of phosphorus.
Possibility of Hazardous Reactions:	None known.
Reactivity:	N/D
Conditions To Avoid:	N/D

### Section 11. Toxicological Information

Chemical Name	Exp		Type of Effect	Concentration 7400 MG/KG	Species Rat
odium phosphate, tribasic Oral			LD50		
Carcinogenicity Category					
Component		Source	Code	Brief Description	
Sodium phosphate, tribasic		N/E	N/E	N/E	
Likely Routes of Exposure:	N/D				
Symptoms					
Inhalation:		N/D			
Eye Contact:		N/D			
Skin Contact:		N/D			
Ingestion:		N/D			
Skin Corrosion/Irritation:	N/D				

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Serious Eye Damage/Eye Irritation:	N/D	
Sensitization:	N/D	
Germ Cell Mutagenicity:	N/D	
Reproductive/Developmental Toxicity:	N/D	
Specific Target Organ Toxicity		
Single Exposure:		N/D
Repeated Exposure:		N/D
Aspiration Hazard:	N/D	
Comments:	None.	

# Section 12. Ecological Information

Ecotoxicity			
Species		Duration	Type of Effect
Daphnia magna		50h	EC50
Bluegill Sunfish		96h	LC50
Rainbow Trout		96h	LC50
Ceriodaphnia dubia		48h	LC50
Fathead Minnow		96h	LC50
Persistence and Biodegradability:	N/D		
Bioaccumulative Potential:	N/D		

Bioaccumulative Potential:	N/D
Mobility In Soil:	N/D
Other Adverse Effects:	N/D
Comments:	None.

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ChemTreat BL1794

### Section 13. Disposal Considerations

Dispose of in accordance with local, state and federal regulations. Not a RCRA-regulated hazardous waste when disposed in the original product form.

### Section 14. Transport Information

Controlling Regulation	UN/NA#:	Proper Shipping Name:	Technical Name:	Hazard Class:	Packing Group:
DOT	N/A	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	N/A	N/A
IMDG	N/A	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	N/A	N/A
ICAO	N/A	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	N/A	N/A
TDG	N/A	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	N/A	N/A
Note:		N/A	•	·	•

Note:

#### Section 15. Regulatory Information

Inventory Status

United States (TSCA): Canada (DSL/NDSL):

All ingredients listed. All ingredients listed.



Л	
	SDS

ChemTreat BL1794

Federal Regulations

SARA Title III Rules				
Sections 311/312 H Classes	azard			
Fire Hazard: Reactive Hazard: Release of Pressure: Acute Health Hazard: Chronic Health Hazard:			No No No Yes No	
Other Sections				
Component Sodium phospha	te, tribasic	Section 313 Toxic Chem N/A	cal Section 302 E	HS CERCLA RQ 5000
Comments:	No	ne.		
State Regulations				
California Proposition 65:	None known.			
Special Regulations				
Component Sodium phosphate tribasio		States		
Sodium phosphate, tribasio		States MN, NY, PA		
	N/A			
Sodium phosphate, tribasic		MN, NY, PA	er Water	d in
Sodium phosphate, tribasic Compliance Information NSF:	N/A FDA: All ingrediel 21 CFR 173.310	MN, NY, PA ts in this produ- or use as "Boil the steam may rtified by the O ed by the follow	er Water contact food. thodox Union as ving ChemTreat	kosher
Sodium phosphate, tribusic Compliance Information NSF: Food Regulations:	N/A FDA: All ingrediel 21 CFR 173.310 Additives" where This product is ce pareve. Only when prepa	MN, NY, PA ats in this produ- or use as "Boil the steam may rtified by the O ed by the follov idge, IA; Nede	er Water contact food. thodox Union as ving ChemTreat land, TX.	i kosher facilities:
Sodum prosphate, tribusic Compliance Information NSF: Food Regulations: KOSHER:	N/A FDA: All ingredie 21 CFR 173.310 Additives" where This product is ce pareve. Only when prepa Ashland, VA; Eld	MN, NY, PA ats in this produ- or use as "Boil the steam may rtified by the O ed by the follov idge, IA; Nede	er Water contact food. thodox Union as ving ChemTreat land, TX.	i kosher facilities:
Sodium prosphate, tribusic Compliance Information NSF: Food Regulations: KOSHER: Halal:	N/A FDA: All ingredie 21 CFR 173.310 Additives" where This product is ce pareve. Only when prepa Ashland, VA; Eld This product has	MN, NY, PA ats in this produ- or use as "Boil the steam may rtified by the O ed by the follov idge, IA; Nede	er Water contact food. thodox Union as ving ChemTreat land, TX.	i kosher facilities:
Sodium prosphate, tribusic Compliance Information NSF: Food Regulations: KOSHER: Halal: FIFRA:	N/A FDA: All ingredie 21 CFR 173.310 Additives" where This product is ce pareve. Only when prepa Ashland, VA; Eld This product has N/A	MN, NY, PA ats in this produ- or use as "Boil the steam may rtified by the O ed by the follov idge, IA; Nede	er Water contact food. thodox Union as ving ChemTreat land, TX.	i kosher facilities:



HMIS Hazard Rating

Notes:

Section 16. Other Information

Health: Flammability: Physical Hazard: PPE:







# Disclaimer

sented in good failth and believed to be correct as of the date formation is supplied upon the condition that the persons reco-ent will Chemit Treat, Inc. be responsible for damages of any anties, either expressed or implied, of merchantability, fitness undukt in which information reform ons set forth herein (here ations as to the complet nformation<sup>\*</sup>) are pres accuracy thereof. Infr rior to use. In no ever resentation or warrar o information or the r and rec ough the information of. ChemTreat. Inc. uitability for their purpose ce upon information. No r on as to its sui use or reliance mages of any itability, fitness for

#### Abbreviations

Abbreviation	Definition
<	Less Than
>	Greater Than
ACGIH	American Conference of Governmental Industrial Hygienists
EHS	Environmental Health and Safety Dept
N/A	Not Applicable
N/D	Not Determined
N/E	Not Established
OSHA	Occupational Health and Safety Dept
PEL	Personal Exposure Limit
STEL	Short Term Exposure Limit
TLV	Threshold Limit Value
TWA	Time Weight Average
UNK	Unknown

Prepared by:

**Revision Date:** 

Product Compliance Department; ProductCompliance@chemtreat.com February 7, 2019

The PPE rating depends on circumstances of use. See Section 8 for recommended PPE. The Hazardous Material Information System (HMIS) is a voluntary, subjective alpha-numeric symbolic system for recommending hazard risk and personal protection equipment information. It is a subjective rating system based on the evaluator's understanding of the chemical associated risks. The end-user must determine if the code is appropriate for their use.

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#### ... .... . ... .

Component	CA	S Registry #	Wt.%
Carbohydrazide	497	-18-7	5 - 10
Comments	If chemical identity ar withheld, this informa		age of composition has been o be a trade secret.
Section 4. First Aid Meas	sures		
Inhalation:	Remove to fresh air a breathing. Call a pois unwell.		position comfortable for physician if you feel
Eyes:	Rinse cautiously with lenses, if present and irritation persists, get	easy to do. Contin	
Skin:	Wash with plenty of soap and water. Call a poison center or doctor/physician if you feel unwell.		
Ingestion:	DO NOT INDUCE VOMITING. Rinse mouth. Call a POISON CENTER or doctor/physician.		
Most Important Symptoms:	N/D		
Indication of Immediate Medical Attention and Special Treatment Needed, If Necessary:	N/A		
Section 5. Fire Fighting	Measures		
Flammability of the Product:	Not flammable.		
Suitable Extinguishing Media:	Use extinguishing me	dia suitable to surr	ounding fire.
Specific Hazards Arising from the Chemical:	Carbon monoxide, carbon dioxide, or hydrazine may be released in a fire.		

SAFETY DATA SHEET

Section 1.	Chemical	Product	and	Company	Identification
------------	----------	---------	-----	---------	----------------

Product Name: Product Use: Supplier's Name: Emergency Telephon Address (Corporate H Telephone Number fo	eadquarters): 5640 Cox Road Glen Allen, VA 23060	
Date of SDS: Revision Date: Revision Number:	July 23, 2018 July 23, 2018 18072301AN	
Section 2. Hazard(s)	lentification	
Signal Word:	WARNING	
GHS Classification(s):	Acute Toxicity Dermal – Category 5 Acute Toxicity Inhalation – Category 4 Acute Toxicity Oral – Category 4	
Hazard Statement(s):	H313 May be harmful in contact with skin. H332 Harmful if inhaled. H302 Harmful if swallowed.	
Precautionary Statement(s):		
Prevention:	P260 Do not breathe dust/fume/gas/mist/vapors/spray. P271 Use only outdoors or in a well-ventilated area. P270 Do not eat, drink, or smoke when using this product.	
Response:	None.	

	P271 Use only outdoors or in a well–ventilated area. P270 Do not eat, drink, or smoke when using this product.
Response:	None.
Storage:	None.
Disposal:	None.
System of Classification Used:	Classification under 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).
Hazards Not Otherwise Classified:	None.



Protective Equipment:

Personal Precautions:

Environmental Precautions:

Section 7. Handling and Storage

Methods for Cleaning up: Other Statements:

Handling:

Storage:

Exposure Limits

Component Carbohydrazide Engineering Controls:

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Section 6. Accidental Release Measures

None.

Section 8. Exposure Controls/Personal Protection

mechanical mixing is required.

 Source
 Exposure Limits

 N/E
 N/E

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If product is involved in a fire, wear full protective clothing including a positive-pressure, NIOSH approved, self-contained breathing apparatus.

Use appropriate Personal Protective Equipment (PPE). Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains, and sewers.

Contain and recover liquid when possible. Flush spill area with water spray.

Wear appropriate Personal Protective Equipment (PPE) when handling this product. Do not get in eyes, or on skin and clothing. Wash thoroughly after handling. Do not ingest. Avoid breathing vapors, mist or dust.

Store away from incompatible materials (see Section 10). Store at ambient temperatures. Keep container securely closed when not in use. Label precautions also apply to empty container. Recondition or dispose of empty containers in accordance with government regulations. For Industrial use only. Do not freeze, Store above Freeze Point. If freezes, then

Use only with adequate ventilation. The use of local ventilation is recommended to control emission near the source.





Personal Protection	
Eyes:	Wear chemical splash goggles or safety glasses with full–face shield. Maintain eyewash fountain in work area.
Skin:	Maintain quick-drench facilities in work area. Wear butyl rubber or neoprene gloves. Wash them after each use and replace as necessary. If conditions warrant, wear protective clothing such as boots, aprons, and coveralls to prevent skin contact.
Respiratory:	If misting occurs, use NIOSH approved organic vapor/acid gas dual cartridge respirator with a dust/mist prefilter in accordance with 29 CFR 1910.134.

### Section 9. Physical and Chemical Properties

- Physical State and Appearance: Specific Gravity: pH: Freezing Point: Flash Point: Flash Point: Odor: Melting Point: Initial Boiling Point and Boiling Range: Solubility in Water: Evaporation Rate: Vapor Density: Molecular Weight: Viscosity: Flasmable Limits: Flasmable Limits: Autoignition Temperature: Density: Density: Vapor Pressure: % VOC: Odor Threshold n-octanol Partition Coefficient Decomposition Temperature
- Liquid, Colorless, Clear 1.026 @ 20°C 7.8 @ 20°C, 100.0% 41°F N/D Odorless Ödörless N/A N/D Complete N/D As Water N/D 3 CPS @ 20°C N/A 8.56 LB/GA As Water N/D N/D N/D N/D N/D N/D

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### Section 10. Stability and Reactivity

Chemical Stability:	Stable at normal temperatures and pressures.
Incompatibility with Various Substances:	Strong oxidizers, Strong acids.
Hazardous Decomposition Products:	Hydrazine, Carbon dioxide, Carbon monoxide.
Possibility of Hazardous Reactions:	None known.
Reactivity:	N/D
Conditions To Avoid:	N/D

#### Section 11. Toxicological Information

#### Acute Toxicity

Exposure	Type of Effect	Concentration	Species
N/D	N/D	N/D	N/D
Source	Code	Brief Description	
N/E	N/E	N/E	
N/D			
N/D			
	Source N/D N/D N/D N/D N/D N/D	Source         Code           N/E         NE           N/D         N/D           N/D         N/D           N/D         N/D	Source         Code         Brief Description           N/E         N/E         N/E           N/D         N/D           N/D         N/D           N/D         N/D



Serious Eye Damage/Eye Irritation:	N/D	
Sensitization:	N/D	
Germ Cell Mutagenicity:	N/D	
Reproductive/Developmental Toxicity:	N/D	
Specific Target Organ Toxicity		
Single Exposure:		N/D
Repeated Exposure:		N/D
Aspiration Hazard:	N/D	
Comments:	None.	

#### Section 12. Ecological Information

Ecotoxicity				
Species		Duration	Type of Effect	Test Results
Fathead Minnow		96h	LC50	159.32 mg/l
Ceriodaphnia dubia		48h	LC50	158.38 mg/l
Persistence and Biodegradability:	N/D			
Bioaccumulative Potential:	N/D			
Mobility In Soil:	N/D			
Other Adverse Effects:	N/D			
Comments:	None.			

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CERCLA RO

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No

No No Yes No

Section 302 FHS

ction 313

Toxic Chemical TPQ

#### Federal Regulations SARA Title III Rules Section 13. Disposal Considerations Sections 311/312 Hazard Classes Dispose of in accordance with local, state and federal regulations. Fire Hazard: Reactive Hazard: Release of Pressure: Acute Health Hazard: Chronic Health Hazard: Section 14. Transport Information Controlling Regulation Proper Shipping Name: COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID UN/NA#: Technical Nam Hazard Class Other Sections Group: IMDG Component ICAC Comments None TDG WATER TREATMENT, LIQUID COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID State Regulations SCT This product contains chemical(s) known to the State of California to cause cancer and/or to cause birth defects or other reproductive harm: Hydrazine, <0.010%. California Proposition 65: Note N/A Special Regulations Section 15. Regulatory Information Component Carbohydrazid States None. Inventory Status Compliance Information United States (TSCA): Canada (DSL/NDSL): All ingredients listed. All ingredients listed. NSF: N/A N/A Food Regulations: KOSHER: This product has not been evaluated for Kosher approval. Halal<sup>.</sup> This product has not been evaluated for Halal approval. FIFRA: N/A Other: None Comments: None 18072301AN 07/23/18 Page 7 of 10 ChemTreat BL1260 18072301AN 07/23/18 Page 8 of 10 **ChemTreat ChèmTreat** Section 16. Other Information Disclaimer ation and recommendations set forth herein (hereinafter Inc. makes no representations as to the completeness or rown determination as to its suitability for their purposes esulting from the use or reliance upon information. No r , or of any other nature are made hereunder with respec HMIS Hazard Rating e information emTreat, Inc. Health: Flammability: Physical Hazard: PPE: 1 0 0 X The PPE rating depends on circumstances of use. See Section 8 for recommended PPE. The Hazardous Material Information System (HMIS) is a Notes: The inized body meletal initiation of ystem (initio) is a voluntary, subjective alpha-numeric symbolic system for recommending hazard risk and personal protection equipment information. It is a subjective rating system based on the evaluator's understanding of the chemical associated risks. The end-user must determine if the code is appropriate for their use. Abbreviations Abbreviation Definition Less Than Greater Than American Conference of Governmental Industrial Hygienists Environmental Health and Safety Dept ACGIH EHS N/A Not Applicable N/D Not Determined Not Established OSHA PEL STEL TLV Occupational Health and Safety Dept

Prepared by: Revision Date:

TWA UNK

Personal Exposure Limit Short Term Exposure Limit Threshold Limit Value Time Weight Average

Product Compliance Department; ProductCompliance@chemtreat.com July 23, 2018

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"information") are presented in good faith and believed to be correct as of the date r accuracy thereof. Information is supplied upon the condition that the persons rec prior to use. In overwit will Chem Treat, inc. be responsible for damages of any presentation or warranties, either expressed or implied, of merchantability, fitness to information or the orduct to which information refere ages of any









# SAFETY DATA SHEET

SAFETY DATA SHEET Section 1. Chemical Product and Company Identification			Prevention:	P260 Do not breathe dust/fume/gas/mist/vapors/spray. P264 Wash thoroughly after handling. P270 Do not eat, drink, or smoke when using this product. P271 Use only outdoors or in a well-ventilated area. P280 Wear protective gloves/protective clothing/eye protection/face protection.	
Product Name: Product Use: Supplier's Name: Emergency Telephone N Address (Corporate Head Telephone Number for In Date of SDS: Revision Date: Revision Number:	dquarters): 5640 Cox Road Glen Allen, VA 23060			<ul> <li>P210 Keep away from heat, hot surfaces, sparks, open flames and other (ignition sources. No smoking.</li> <li>P261 Avoid breathing dust/fume/gas/mist/vapors/spray.</li> <li>P272 Contaminated work clothing should not be allowed out of the workplace.</li> <li>P263 Avoid contact during pregnancy and while nursing.</li> <li>P264 Wash thoroughly after handling.</li> <li>P241 If stored inside, use explosion-proof electricativentilating/lighting equipment.</li> <li>P242 Use non-sparking tools.</li> <li>P243 Take action to prevent static discharges.</li> </ul>	
Section 2. Hazard(s) Ide	ntification	$\wedge \land$	Response:	P301 + P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell P301 + 330 + 331 IF SWALLOWED: Rinse mouth.	
Signal Word:	DANGER			Do NOT induce vomiting. P303 + P361 + P353 IF ON SKIN (or hair):	
GHS Classification(s):	Skin corrosion/irritation – Category 1b Eye damage/irritation – Category 1 Flammabie Liquids – Category 3 Reproductive Toxicity – Category 2 Sensitization Skin – Category 1 Acute Toxicity Inhalation – Category 4 Acute Toxicity Dermal – Category 3 Acute Toxicity Oral – Category 3			Remove/take off immediately all contaminated clothing. Rinse skin with water/shower P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing P305 + P351 + P338 IF IN EVES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P310 Immediately call a POISON CENTER/doctor. P363 Wash contaminated clothing before reuse. P370 + P378 In case of fire: Use extinguishing media cutoble to the contaminated clotherusition	
Hazard Statement(s):	H314 Causes servere skin burns and eye damage. H318 Causes serious eye damage. H226 Flammable liquid and vapor. H317 May cause an allergic skin reaction. H361 Suspected of damaging fertility or the unborn child H301 Toxic if swallowed. H311 Toxic in contact with skin. H332 Harmful if inhaled.	i.		suitable to surrounding fire to extinguish. P302 + P352 IF ON SKIN: Wash with plenty of soap and water. P333 + P313 If skin irritation or rash occurs: Get medical advice/attention. P308 + P313 IF exposed or concerned: Get medical advice/attention. P361 + P344 Take off immediately all contaminated clothing and wash it before reuse.	
Precautionary Statement(s):			Storage:	P405 Store locked up. P403 Store in a well-ventilated place.	
			Disposal:	P501 Dispose of contents and container in accordance with applicable local, regional, national, and/or international regulations.	
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ChemTreat		SDS	ChemTreat	SDS	
System of Classification Used:	Classification under 2012 OSHA Hazard Communicatior (29 CFR 1910.1200).	n Standard			
Hazards Not Otherwise Classified:	None.		Section 5. Fire Fighting	Measures	
			Flammability of the Product:	Product does not sustain combustion as described in 49 CFR 173, Appendix H.	
Section 3. Composition	Hazardous Ingredients		Suitable Extinguishing Media:	Use extinguishing media suitable to surrounding fire.	
Component Cyclohexylamine	CAS Registry # Wt.% 108-91-8 10 - 3	30	Specific Hazards Arising from the Chemical:	Product may emit toxic gases or fumes under fire conditions.	
3-Methoxypropylamine Comments	5332-73-0 10 - 3 If chemical identity and/or exact percentage of compositi withheld, this information is considered to be a trade sec	ion has been	Protective Equipment:	If product is involved in a fire, wear full protective clothing including a positive-pressure, NIOSH approved, self-contained breathing apparatus.	
Section 4. First Aid Mea	sures		Section 6. Accidental Re	elease Measures	
Inhalation:	Remove to fresh air and keep at rest in a position comfo breathing. Call a poison center or doctor/physician if you		Personal Precautions:	Use appropriate Personal Protective Equipment (PPE).	
Eyes:	unwell. Rinse cautiously with water for several minutes. Remove	e contact	Environmental Precautions:	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains, and sewers.	
-	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor/physician.		Methods for Cleaning up:	Contain and recover liquid when possible. Flush spill area with water spray.	
Skin:	Immediately remove/take off all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before re-use. Immediately call a poison center or doctor/physician.		Other Statements:	If RQ (Reportable Quantity) is exceeded, report to National Spill Response Office at 1–800–424–8802. Reportable Quantity of the product is 49 Gal.	
Ingestion:	DO NOT INDUCE VOMITING. Rinse mouth. Immediately call a POISON CENTER or doctor/physician.		Section 7. Handling and	Storage	
Most Important Symptoms:	N/D				
Indication of Immediate Medical Attention and Special Treatment Needed, If Necessary:	N/A		Handling:	Wear appropriate Personal Protective Equipment (PPE) when handling this product. Do not get in eyes, or on skin and clothing. Wash thoroughly after handling. Do not ingest. Avoid breathing vapors, mist or dust.	





Storage:

Store away from incompatible materials (see Section 10). Store at ambient temperatures, Keep container securely closed when not in use. Label precautions also apply to empty container. Recondition or dispose of empty containers in accordance with government regulations. For Industrial use only. Protect from heat and sources of ignition. Store above Freeze Point.

### Section 8. Exposure Controls/Personal Protection

Exposure Limits				
Component		Source	Exposure Limits	
Cyclohexylamine		ACGIH TLV	41 mg/m <sup>3</sup> TWA	
3-Methoxypropylamine		N/E	N/E	
Engineering Controls:	Use only with adequate ventilation. The use of local ventilation is recommended to control emission near the source.			
Personal Protection				
Eyes:	Wear chemical splash goggles or safety glasses with full-face shield. Maintain eyewash fountain in work area.			
Skin:		Maintain quick-drench facilities in work area. Wear butyl rubber or neoprene gloves. Wash them after each use and replace as necessary. If conditions warrant, wear protective clothing such as boots, aprons, and coveralls to prevent skin contact.		
Respiratory:	If misting occurs, use NIOSH approved organic vapor/acid gas dual cartridge respirator with a dust/mist prefilter in accordance with 29 CFR 1910.134.			

### Section 9. Physical and Chemical Properties

Physical State and Appearance: Specific Gravity: pH: Freezing Point: Flash Point: Odor: Melting Point: Initial Boiling Point and Boiling Range: Solubility in Water:	Liquid, Colorless, Clear 0.964 @ 20°C 13.1 @ 20°C, 100.0% <-9°F 132°F Strong N/A 212°F Miscible	
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## Carcinogenicity Category

Component Cyclohexylamine		Source	Code	Brief Description Not classifiable as a human carcinogen.	
		ACGIH	TLV-A4		
3-Methoxypropylamine		N/E	N/E	N/E	
Likely Routes of Exposure:	N/D				
Symptoms					
Inhalation:		N/D			
Eye Contact:		N/D			
Skin Contact:		N/D			
Ingestion:		N/D			
Skin Corrosion/Irritation:	N/D				
Serious Eye Damage/Eye rritation:	N/D				
Sensitization:	N/D				
Germ Cell Mutagenicity:	N/D				
Reproductive/Developmental Foxicity:	N/D				
Specific Target Organ Toxicity					
Single Exposure:		N/D			
Repeated Exposure:		N/D			
Aspiration Hazard:	N/D				
Comments:	None.				





Evaporation Rate:	N/D
Vapor Density:	N/D
Molecular Weight:	N/D
Viscosity:	<100 CPS @ 20°C
Flammability (solid, gas):	N/D
Flammable Limits:	N/A
Autoignition Temperature:	N/A
Density:	8.04 LB/GA
Vapor Pressure:	<18 mmHg @ 20C
% VOC:	50
Odor Threshold	N/D
n-octanol Partition Coefficient	N/D
Decomposition Temperature	N/D

#### Section 10. Stability and Reactivity

Chemical Stability:	Stable at normal temperatures and pressures.
Incompatibility with Various Substances:	Strong oxidizers, Acids.
Hazardous Decomposition Products:	Oxides of carbon, Oxides of nitrogen.
Possibility of Hazardous Reactions:	None known.
Reactivity:	N/D
Conditions To Avoid:	N/D

### Section 11. Toxicological Information

#### Acute Toxicity

Chemical Name	Exposure	Type of Effect	Concentration	Species
Cyclohexylamine	Oral	LD50	156 MG/KG	Rat
	Dermal	LD50	277 MG/KG	Rabbit
3-Methoxypropylamine	Oral	LD50	6260 MG/KG	Rat
	Oral	LD50	0.69 G/KG	Rat
	Dermal	LD50	>2 G/KG	Rabbit
	Oral	LD50	690 MG/KG	Rat

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# Section 12. Ecological Information

Ecotoxicity			
Species	Duration	Type of Effect	Test Results
Ceriodaphnia dubia	48h	LC50	519.63 mg/l
Daphnia pulex	48h	LC50	277 mg/l
Fathead Minnow	96h	LC50	659.75 mg/l
	48h	LC50	1025 mg/l
Mysid Shrimp	24h	LC50	406 mg/l
	48h	LC50	330 mg/l
Inland Silverside	24h	LC50	637 mg/l
	96h	LC50	470 mg/l

Persistence and Biodegradability:	N/D
Bioaccumulative Potential:	N/D
Mobility In Soil:	N/D
Other Adverse Effects:	N/D
Comments:	None.

#### Section 13. Disposal Considerations

Dispose of in accordance with local, state and federal regulations. EPA ignitibility characteristic hazardous waste D001 when disposed of in the original product form. EPA corrosivity characteristic hazardous waste D002 when disposed of in the original product form.

### Section 14. Transport Information

Controlling					Packing
Regulation	UN/NA#:	Proper Shipping Name:	Technical Name:	Hazard Class:	Group:
DOT	UN2734	AMINES, LIQUID, CORROSIVE,	(CYCLOHEXYLAMINE AND	8, 3	PGII
		FLAMMABLE, N.O.S.	3-METHOXYPROPYLAMINE)		
Over 49 GA	RQ UN2734	AMINES, LIQUID, CORROSIVE,	(CYCLOHEXYLAMINE AND	8, 3	PGII
		FLAMMABLE, N.O.S.	3-METHOXYPROPYLAMINE)		
IMDG	UN2734	AMINES, LIQUID, CORROSIVE,	(CYCLOHEXYLAMINE AND	8, 3	PGII
		FLAMMABLE, N.O.S.	3-METHOXYPROPYLAMINE)		
ICAO	UN2734	AMINES, LIQUID, CORROSIVE,	(CYCLOHEXYLAMINE AND	8, 3	PGII
		FLAMMABLE, N.O.S.	3-METHOXYPROPYLAMINE)		

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Controlling Regulation	UN/NA#:	Proper Shipping Name:	Technical Name:	Hazard Class:	Packing Group:	Stat
SCT	UN2734	AMINES, LIQUID, CORROSIVE,	(CYCLOHEXYLAMINE AND	8, 3	PGII	
TDG	UN2734	FLAMMABLE, N.O.S. AMINES, LIQUID, CORROSIVE,	3-METHOXYPROPYLAMINE) (CYCLOHEXYLAMINE AND	8, 3	PGII	
		FLAMMABLE, N.O.S.	3-METHOXYPROPYLAMINE)			
Note:		N/A				
Section 1	5. Regulat	tory Information				Cor
Inventory Sta	tus					
inventory ou	United State	(TOCA)	All ingredients	linted		
	Canada (DS		All ingredients			
Federal Regu	lations					
SARA	Title III Rules	s				
		1/312 Hazard				
	Classes					Con
		Fire Hazard: Reactive Hazard:		Yes No		
		Release of Pressure:		No		Se
		Acute Health Hazard: Chronic Health Hazard:		Yes No		
	Other Section	ons				HMI
			Section 313	Section 302 EHS		
		onent	Toxic Chemical	TPQ	CERCLA RQ	
		hexylamine thoxypropylamine	N/A N/A		N/A 100	
	Com	ments:	None.			
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0002004411 00120110						
0002004411 00020110						





#### State Regulations

California Proposition 65:		None known.	
Special Regulations			
Component		Sta	ates
Cyclohexylamine		MA,	A, MN, NJ, NY, PA, WA
3-Methoxypropylamine		MN	N, PA
Compliance Information			
NSF:		N/A	
Food Regulations:		N/A	
KOSHER:		This product has not b	been evaluated for Kosher approval.
Halal:		This product has not b	been evaluated for Halal approval.
FIFRA:		N/A	
Other:		None	
Comments:	None.		

### Section 16. Other Information

S Hazard Rating		
	Health: Flammability: Physical Hazard: PPE:	
Notes:		

2 2 0 X The PPE rating depends on circumstances of use. See Section 8 for recommended PPE. The Hazardous Material Information System (HMIS) is a voluntary, subjective alpha-numeric symbolic system for recommending hazard risk and personal protection equipment information. It is a subjective rating system based on the evaluator's understanding of the chemical associated risks. The end-user must determine if the code is appropriate for their use.

**ChemTreat** 



#### Abbreviations

Abbreviation	Definition
<	Less Than
>	Greater Than
ACGIH	American Conference of Governmental Industrial Hygienists
EHS	Environmental Health and Safety Dept
N/A	Not Applicable
N/D	Not Determined
N/E	Not Established
OSHA	Occupational Health and Safety Dept
PEL	Personal Exposure Limit
STEL	Short Term Exposure Limit
TLV	Threshold Limit Value
TWA	Time Weight Average
UNK	Unknown

Prepared by: Revision Date: Product Compliance Department; ProductCompliance@chemtreat.com May 28, 2019

#### Disclaimer

Although the information and recommendations set forth herein (hereinafter "information") are presented in good faith and believed to be correct as of the date hereot. (ThemTreat, Inc. makes no representations as to the completeness or accuracy thereof. Information is supplied upon the contidont that the persons receiving maker with make there now determination as to its suitability for the purposes prior to use. In no event will ChemTreat, Inc. the exponsible for damages of any nature whatsever resulting from the use or reliance upon information. No representation or waranties, either expressed or implied, or therechantability, fitness for a particular purpose, or of any other nature are made hereunder with respect to information or the product to which information refers.



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# SAFETY DATA SHEET

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#### Section 1. Chemical Product and Company Identification

Product Name: Product Use: Supplier's Name: Emergency Telephone Number: Address (Corporate Headquarters): Telephone Number for Information: Date of SDS: Revision Date: ChemTreat BL1797 Boiler Water Treatment ChemTreat, Inc. (800)424-9300 (Toll Free) 5640 Cox Road Glen Allen, VA 23060 (800)648-4579 February 7, 2019 February 7, 2019 19020701AN

#### Section 2. Hazard(s) Identification

Signal Word:	DANGER

Revision Number:

GHS Classification(s):

Hazard Statement(s):

Precautionary Statement(s):

Prevention:

Skin corrosion/irritation – Category 1b Eye damage/irritation – Category 1 Acute Toxicity Dermal – Category 4 Acute Toxicity Inhalation – Category 4 Acute Toxicity Inhalation – Category 4

H314 Causes severe skin burns and eye damage. H318 Causes serious eye damage. H312 Harmful in contact with skin. H324 Harmful if inhaled. H302 Harmful if swallowed.

> P260 Do not breathe dust/fume/gas/mist/vapors/spray. P264 Wash thoroughly after handling. P270 Do not eat, drink, or smoke when using this product. P271 Use only outdoors or in a well–ventilated area. P280 Wear protective gloves/protective clothing/eye protection/face protection.

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Response:

Storage:

Disposal:

Hazards Not Otherwise Classified:

System of Classification Used:







Skin:	Immediately remove/take off all contaminated clothing. Rinse skir with water/shower. Wash contaminated clothing before re-use. Immediately call a poison center or doctor/physician.
Ingestion:	DO NOT INDUCE VOMITING. Rinse mouth. Call a POISON CENTER or doctor/physician.
Most Important Symptoms:	N/D
Indication of Immediate Medical Attention and Special Treatment Needed, If Necessary:	N/A

Flammability of the Product:	Not flammable.
Suitable Extinguishing Media:	Use extinguishing media suitable to surrounding fire.
Specific Hazards Arising from the Chemical:	Use water spray to keep containers cool.
Protective Equipment:	If product is involved in a fire, wear full protective clothing including a positive-pressure, NIOSH approved, self-contained breathing apparatus.

# Section 6. Accidental Release Measures

Personal Precautions:	Use appropriate Personal Protective Equipment (PPE).
Environmental Precautions:	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains, and sewers.
Methods for Cleaning up:	Contain and recover liquid when possible. Flush spill area with water spray.
Other Statements:	If RQ (Reportable Quantity) is exceeded, report to National Spill Response Office at 1–800–424–8802. Reportable Quantity of the product is 2252 Gal.

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ChemTreat BL1797



## Section 9. Physical and Chemical Properties

Physical State and Appearance: Specific Gravity: PH: Freezing Point: Flash Point: Odor: Melting Point: Initial Bolling Point and Bolling Range: Solubility in Water: Evaporation Rate: Vapor Density: Molecular Weight: Viscosity: Flammability (solid, gas): Flammabile Limits: Autoignition Temperature: Density:	Liquid, Colorless, Clear 1.109 @ 20°C 13.2 @ 20°C, 100.0% 30°F N/D Odorless N/A 212°F Complete N/D N/D N/D N/D N/D N/D N/D N/D
Vapor Pressure:	N/D
% VOC: Odor Threshold	N/D N/D
n-octanol Partition Coefficient	N/D N/D
Decomposition Temperature	N/D N/D

## Section 10. Stability and Reactivity

Chemical Stability:	Stable at normal temperatures and pressures.
Incompatibility with Various Substances:	Strong oxidizers, Acids.
Hazardous Decomposition Products:	Oxides of carbon.
Possibility of Hazardous Reactions:	None known.
Reactivity:	N/D
Conditions To Avoid:	N/D

# Section 3. Composition/Hazardous Ingredients

None.

Component	CAS Registry #	Wt.%
Sodium hexametaphosphate	10124-56-8	5 - 10
Sodium hydroxide	1310-73-2	1 - 5
Comments	If chemical identity and/or exact percentage of composition has been withheld, this information is considered to be a trade secret.	

P405 Store locked up.

#### Section 4. First Aid Measures

Inhalation:	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a poison center or doctor/physician.
Eyes:	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor/physician.

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P301 + P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell P301 + 330 + 331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. P303 + P361 + P353 IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower P304 + P340 IF INHALED: Remove person to fresh air and keen comfortable for breathing.

F304 + F340 in PIALED. Retinolog person to insen air and keep comfortable for breathing P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P310 Immediately call a POISON CENTER/doctor. P363 Wash contaminated clothing before reuse.

P501 Dispose of contents and container in accordance with applicable local, regional, national, and/or international regulations.

Classification under 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

ChemTreat BL1797





# Section 7. Handling and Storage

Wear appropriate Personal Protective Equipment (PPE) when handling this product. Do not get in eyes, or on skin and clothing. Wash thoroughly after handling. Do not ingest. Avoid breathing vapors, mist or dust.
Store away from incompatible materials (see Section 10). Store at ambient temperatures. Keep container securely closed when not in use. Label precautions also apply to empty container. Recondition

use. Label precautions also apply to empty container. Reconditi or dispose of empty containers in accordance with government regulations. For Industrial use only. Store above Freeze Point.

#### Section 8. Exposure Controls/Personal Protection

## Exposure Limits

Handling:

Storage:

Component	Source	E	xposure Limits	
Sodium hexametaphosphate	N/E	N/E N/E		
Sodium hydroxide		FLV 2	mg/m³ Ceiling	
	OSHA P	EL 2	mg/m³ TWA	
Engineering Controls:	Use only with adequate ventilation. The use of local ventilation is recommended to control emission near the source.			
Personal Protection				
Eyes:		Wear chemical splash goggles or safety glasses with full-face shield. Maintain eyewash fountain in work area.		
Skin:	Wear b each u wear p	Maintain quick-drench facilities in work area. Wear butyl rubber or neoprene gloves. Wash them after each use and replace as necessary. If conditions warrant, wear protective clothing such as boots, aprons, and coveralls to prevent skin contact.		
Respiratory:	gas du	If misting occurs, use NIOSH approved organic vapor/acid gas dual cartridge respirator with a dust/mist prefilter in accordance with 29 CFR 1910.134.		





## Section 11. Toxicological Information

Chemical Name	Exposure	Type of Effect	Concentration	Species
Sodium hexametaphosphate	Oral	LD50	3053 MG/KG	Rat
	Oral	LD50	4320 MG/KG	Mouse
	Dermal	LD50	>7940 MG/KG	Rabbit
Sodium hydroxide	Oral Dermal	LD50 LD50	300 MG/KG 1350 MG/KG	Rat Rabbit
Carcinogenicity Category	Source	Code	Brief Description	
Sodium hexametaphosphate	N/E	N/E	N/E	
Sodium hydroxide	N/E	N/E	N/E	
Symptoms Inhalation:	N/D			
Eye Contact:	N/D			
Skin Contact:	N/D			
Ingestion:	N/D			
Skin Corrosion/Irritation:	N/D			
Serious Eye Damage/Eye Irritation:	N/D			
Sensitization:	N/D			
Germ Cell Mutagenicity:	N/D			
Reproductive/Developmental Toxicity:	N/D			
Specific Target Organ Toxicity				
Single Exposure:	N/D			

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Aspiration Hazard:	N/D
Comments:	None.

Section 12. Ecological Information

Species		Duration	Type of Effect	Test Results
Fathead Minnow		96h	LC50	5548 mg/l
Ceriodaphnia dubia		48h	LC50	3536 mg/l
Persistence and Biodegradability:	N/D			
Bioaccumulative Potential:	N/D			
Mobility In Soil:	N/D			
Other Adverse Effects:	N/D			
Comments:	Not tested.			

#### Section 13. Disposal Considerations

Dispose of in accordance with local, state and federal regulations. EPA corrosivity characteristic hazardous waste D002 when disposed of in the original product form.

#### Section 14. Transport Information

					Packing
Regulation	UN/NA#:	Proper Shipping Name:	Technical Name:	Hazard Class:	Group:
DOT	UN1824	SODIUM HYDROXIDE SOLUTION	N/A	8	PGII
Over 2252 GA	RQ UN1824	SODIUM HYDROXIDE SOLUTION	N/A	8	PGII
TDG	UN1824	SODIUM HYDROXIDE SOLUTION	N/A	8	PGII
IMDG	UN1824	SODIUM HYDROXIDE SOLUTION	N/A	8	PGII
ICAO	UN1824	SODIUM HYDROXIDE SOLUTION	N/A	8	PGII



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Compliance Information		
NSF:		N/A
Food Regulations:		FDA: All ingredients in this product are authorized in 21 CFR 173.310 for use as "Boiler Water Additives" where the steam may contact food.
KOSHER:		This product has not been evaluated for Kosher approval.
Halal:		This product has not been evaluated for Halal approval.
FIFRA:		N/A
Other:		None
Comments:	None.	

#### Section 16. Other Information

HMIS Hazard Rating

Notes:

Health: Flammability: Physical Hazard: PPE:

The PPE rating depends on circumstances of use. See Section 8 for recommended PPE. The Hazardous Material Information System (HMIS) is a voluntary, subjective alpha-numeric symbolic system for recommending hazard risk and personal protection equipment information. It is a subjective rating system based on the evaluator's understanding of the chemical associated risks. The end-user must determine if the code is appropriate for their use.

3 0

1 X

#### Abbreviations

Abbreviation	Definition
<	Less Than
>	Greater Than
ACGIH	American Conference of Governmental Industrial Hygienists
EHS	Environmental Health and Safety Dept
N/A	Not Applicable
N/D	Not Determined
N/E	Not Established
OSHA	Occupational Health and Safety Dept
PEL	Personal Exposure Limit

All ingredients All ingredients	
	No No Yes No
Section 313 Toxic Chemical	Sectio
N/A N/A	N/A N/A
	Toxic Chemical

Special Regulations

opecial Regulations

Component	States
Sodium hexametaphosphate	MA, NY, PA
Sodium hydroxide	MA, MN, NY, PA, WA

CERCLA RQ

N/A 1000





ChemTreat BL1797

< 0.1

90 - 100

Abbreviation	Definition	
STEL	Short Term Exposure Limit	
TLV	Threshold Limit Value	
TWA	Time Weight Average	
UNK	Unknown	
Prepared by:	Product Compliance Department; ProductCompliance@chemtreat.com	
Revision Date:	February 7, 2019	

#### Disclaimer

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Chemical name

Inhalation

Skin contact

Eve contact

Ingestion

5-chlor-2-methyl-4-isothiazolin-3-on

4. First-aid measures

Most important symptoms/effects, acute and delayed

Indication of immediate medical attention and special treatment needed

Suitable extinguishing media Unsuitable extinguishing media

Fire fighting equipment/instructions

Personal precautions, protective equipment and emergency procedures

Methods and materials for containment and cleaning up

Environmental precautions

7. Handling and storage

Precautions for safe handling Conditions for safe storage, including any incompatibilities

6. Accidental release measures

Specific methods General fire hazards

General information 5. Fire-fighting measures

Other components below reportable levels

Although the information and recommendations set forth herein (hereinafter "information") are presented in good faith and believed to be correct as of the date hereod, Chem Treat, Inc. makes no representations as to the completeness or accuracy thereof. Information is supplied upon the configured or the propose provide to use. In on event will Chem Treat, Inc. be responsible for damaged of any nature whatsever resulting from the use or reliance upon information. No representation or warrantee, either expressed or implied, of mechanability, fitness for a particular purpose, or of any other nature are much elevented with respect to information relex.

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Move to fresh air. Call a physician if symptoms develop or persist.

Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).

Special protective equipment Self-contained breathing apparatus and full protective clothing must be worn in case of fire. and precautions for firefighters

No unusual fire or explosion hazards noted.

Prevent product from entering drains.

Move containers from fire area if you can do so without risk

Specific hazards arising from During fire, gases hazardous to health may be formed. the chemical

Do not use water jet as an extinguisher, as this will spread the fire.

Rinse mouth. Get medical attention if symptoms occur

May cause an allergic skin reaction. Dermatitis. Rash.

Remove contaminated clothing immediately and wash skin with soap and water. In case of eczema or other skin disorders: Seek medical attention and take along these instructions. Rinse with water. Get medical attention if irritation develops and persists.

Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Wash contaminated clothing before reuse.

Use standard firefighting procedures and consider the hazards of other involved materials.

Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Avoid breathing mist/vapors. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 6 of the SDS.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

Avoid breathing mist/vapors. Avoid contact with eyes, skin, and clothing. Provide adequate ventilation. Wear appropriate personal protective equipment. Avoid release to the environment. Observe good industrial hygiene practices. Store in tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

CAS number

26172-55-4

Common name and synonyms



SAFETY DATA SHEET



1. Identification Product identifier	СТ907		
Other means of identification			
Product code	CT907		
Recommended use	Not available.		
Recommended restrictions	None known.		
Manufacturer/Importer/Supplier/	Distributor information		
Manufacturer			
Company name	ChemTreat		
Address	5640 Cox Road		
	Glen Allen, VA 23060 United States		
Telephone	800-648-4579		
E-mail	Not available.		
Emergency phone number	800-424-9300		
2. Hazard(s) identification			
Physical hazards	Not classified.		
Health hazards	Sensitization, skin	Category 1A	
Environmental hazards	Hazardous to the aquatic environment, acute hazard	Category 3	
	Hazardous to the aquatic environment, long-term hazard	Category 3	
OSHA defined hazards	Not classified.		
Signal word	Warning		
Hazard statement	May cause an allergic skin reaction. Harmful to lasting effects.	o aquatic life. Harmful to aqua	tic life with long
Precautionary statement			
Prevention	Avoid breathing mist/vapors. Contaminated we workplace. Avoid release to the environment.		ed out of the
Response	If on skin: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse.		
Storage	Store away from incompatible materials.		
Disposal	Dispose of contents/container in accordance w	with local/regional/national/inte	rnational regulations
Hazard(s) not otherwise classified (HNOC)	None known.		
Supplemental information	7.03% of the mixture consists of component(s mixture consists of component(s) of unknown		kicity. 7.03% of the
	on on ingredients		
3. Composition/information			
3. Composition/informatio			
	Common name and synonyms	CAS number	%

CT907 Version #: 01 Issue date: 06-10-2021

CT907 Version #: 01 Issue date: 06-10-2021

Occupational exposure limits	This mixture has no ingredients that have PEL, TLV, or other recommended exposure limit.		
Biological limit values	No biological exposure limits noted for the ingredient(s).		
Appropriate engineering controls	ceoring Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.		
Individual protection measures, Eye/face protection	such as personal protective equipment Wear safety glasses with side shields (or goggles). Face shield is recommended.		
Skin protection Hand protection	Wear appropriate chemical resistant gloves.		
Other	Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.		
Respiratory protection	In case of insufficient ventilation, wear suitable respiratory equipment.		
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.		
General hygiene considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of th workplace.		
9. Physical and chemical	properties		
Appearance			
Physical state	Liquid.		
Form	Liquid. Liquid		
Color	Colorless		
Odor	Mild		
Odor threshold	Not available.		
pH	7.2 100		
Aelting point/freezing point 30.20 °F (-1.00 °C)			
Initial boiling point and boiling range	211.95 °F (99.97 °C) estimated		
Flash point	Not available.		
Evaporation rate	Not available.		
Flammability (solid, gas)	Not applicable.		
Upper/lower flammability or expl	osive limits		
Flammability limit - lower (%)	Not available.		
Flammability limit - upper (%)	Not available.		
Explosive limit - lower (%)	Not available.		
Explosive limit - upper (%)	Not available.		
Vapor pressure	0.00001 hPa estimated		
Vapor density	Not available.		
Relative density	Not available.		
Solubility(ies)			
Solubility (water)	Not available.		
Partition coefficient (n-octanol/water)	Not available.		
Auto-ignition temperature	Not available.		
Decomposition temperature	Not available.		
Viscosity	Not available.		
Other information Explosive properties	Not explosive.		

	ALCO DE LO		
Oxidizing properties	Not oxidizing.		
Percent volatile	92.56 % estimated		
Pounds per gallon	8.45		
Specific gravity	1.01 @ 20C		
10. Stability and reactivity	1		
Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.		
Chemical stability	Material is stable under normal conditions.		
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.		
Conditions to avoid	Contact with incompatible materials.		
Incompatible materials	Strong oxidizing agents.		
Hazardous decomposition products	No hazardous decomposition products are known.		
11. Toxicological informa	tion		
Information on likely routes of e	xposure		
Inhalation	No adverse effects due to inhalation are expected.		
Skin contact	May cause an allergic skin reaction.		
Eye contact	Direct contact with eyes may cause temporary irritation.		
Ingestion	Expected to be a low ingestion hazard.		
Symptoms related to the physical, chemical and toxicological characteristics	May cause an allergic skin reaction. Dermatitis. Rash.		
Information on toxicological effe	octs		
Acute toxicity	Not known.		
Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation.		
Serious eye damage/eye irritation	Direct contact with eyes may cause temporary irritation.		
Respiratory or skin sensitization	1		
Respiratory sensitization	Not a respiratory sensitizer.		
Skin sensitization	May cause an allergic skin reaction.		
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.		
Carcinogenicity	Not classifiable as to carcinogenicity to humans.		
IARC Monographs. Overall	Evaluation of Carcinogenicity		
	d Substances (29 CFR 1910.1001-1053)		
Not regulated. US. National Toxicology Pro Not listed.	gram (NTP) Report on Carcinogens		
Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.		
Specific target organ toxicity - single exposure	Not classified.		
Specific target organ toxicity - repeated exposure	Not classified.		
Aspiration hazard	Not an aspiration hazard.		
12. Ecological information	1		
Ecotoxicity	Harmful to aquatic life with long lasting effects.		

Product		Species	Test Results
CT907			
Aquatic			
Crustacea	LC50	Ceriodaphnia dubia	554.8 mg/l, 48 hours
			427 mg/l, 48 hours
		Daphnia pulex	812 mg/l, 48 hours
		Opossum shrimp order (Mysida)	83.5 mg/l, 48 hours
Fish	IC25	Fathead minnow (Pimephales promelas)	89 mg/l, 7 days
	LC50	Fathead minnow (Pimephales promelas)	354 mg/l, 48 hours
			168 mg/l, 96 hours
			98.1 mg/l, 96 hours
		Sheepshead minnow (Cyprinodon variegatus)	278.4 mg/l, 96 hours
	LOEC	Fathead minnow (Pimephales promelas)	125 mg/l, 7 days
	NOEC	Fathead minnow (Pimephales promelas)	
ersistence and degradability	No data ie a	vailable on the degradability of any ingredier	
ioaccumulative potential	No data ava	• • • •	No IT the HIALOIG.
lobility in soil	No data ava		
ther adverse effects	No other ad	verse environmental effects (e.g. ozone depl	etion, photochemical ozone creation
		docrine disruption, global warming potential)	
13. Disposal consideration	ons		
isposal instructions ocal disposal regulations	material und into sewers/ container. D regulations.	eclaim or dispose in sealed containers at lic er controlled conditions in an approved incin water supplies. Do not contaminate ponds, w ispose of contents/container in accordance v ccordance with all applicable regulations.	erator. Do not allow this material to drain vaterways or ditches with chemical or us
azardous waste code	D002: Waste Corrosive material [pH <=2 or =>12.5, or corrosive to steel]		
azardous waste code	The waste code should be assigned in discussion between the user, the producer and the was disposal company.		
Vaste from residues / unused roducts	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).		
ontaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.		
14. Transport information	n		
OT			
Not regulated as dangerous	aoods.		
ATA	5		
Not regulated as dangerous	goods.		
MDG			
Not regulated as dangerous			
ransport in bulk according to nnex II of MARPOL 73/78 and ne IBC Code	Not establis	ned.	
15. Regulatory information	on		
S federal regulations		is a "Hazardous Chemical" as defined by th CFR 1910.1200.	e OSHA Hazard Communication
Toxic Substances Control	Act (TSCA)		
TSCA Section 12(b) Ex	port Notificati	on (40 CFR 707, Subpt. D)	
5-chlor-2-methyl-4-i (CAS 26172-55-4)			Notification only.
Material name: CT907			SDS

Material name: CT907 CT907 Version #: 01 Issue date: 06-10-2021

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed. SARA 304 Emergency release notification Not regulated. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053) Not regulated. Superfund Amendments and Reauthorization Act of 1986 (SARA) SARA 302 Extremely hazardous substance Not listed. SARA 311/312 Hazardous Yes chemical Classified hazard Resp categories Respiratory or skin sensitization SARA 313 (TRI reporting) Not regulated. Other federal regulations Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List Not regulated. Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130) Not regulated. Safe Drinking Water Act (SDWA) Not regulated. US state regulations California Proposition 65 California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins. For more information go to www.P65Wamings.ca.gov.

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

#### Poly(oxyethylene) Octylphenyl Ether (CAS 9036-19-5) Ir

International Inventories		
Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes
	ents of this product comply with the inventory requirements administered by the gov components of the product are not listed or exempt from listing on the inventory administered by the product are not listed or exempt from listing on the inventory administered by the product are not listed or exempt from listing on the inventory administered by the product are not listed or exempt from listing on the inventory administered by the product are not listed or exempt from listing on the inventory administered by the product are not listed or exempt from listing on the inventory administered by the product are not listed or exempt from listing on the inventory administered by the product are not listed or exempt from listing on the inventory administered by the product are not listed or exempt from listing on the inventory administered by the product are not listed or exempt from listing on the inventory administered by the product are not listed or exempt from listing on the inventory administered by the product are not listed or exempt from listing on the inventory administered by the product are not listed or exempt from listing on the inventory administered by the product are not listed or exempt from listing on the inventory administered by the product administered by th	

#### Compliance Information: Halal

Compliance Information: Kosher

This product is certified by the Orthodox Unionas Kosher pareve

Material name: CT907

SDS US

Eldridge IA Ashland VA Eldridge IA Nederland TX

Issue date

Version #

Disclaime

HMIS® ratings

Other information

16. Other information, including date of preparation or last revision

Health: 1 Flammability: 0 Physical hazard: 0 Personal protection: X

Personal protection: X ChemTreat cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or experimence due to improve use. The information an the sheet was written based on the best knowledge and experimence currently available. Although the information and recommendations set forth hereina therination "Information" and represented in good faith and believed to be correct as of the date hereion, ChemTreat, Inc. makes no mortalism the persons recovering same will make their own determination as to its suitability their purposes prior to use. In no event will ChemTreat, Inc. be responsible for damages of any mature whatsower resulting from the use or reliance upon information. No representation or warranties, either expressed or implied, of merchantability, fitness for a particular purpose, or of any other nature are made hereunder with respect to information or the product to which information refers.

Prepared by: Product Compliance Department; ProductCompliance@chemtreat.com

06-10-2021

01

S	D	51	JS
	7	I	7



# SAFETY DATA SHEET



1. Identification			
Product identifier	CT907		
Other means of identification			
Product code	CT907		
Recommended use	Not available.		
Recommended restrictions	None known.		
Manufacturer/Importer/Supplier Manufacturer	/Distributor information		
Company name Address	ChemTreat 5640 Cox Road Glen Allen, VA 23060 United States		
Telephone	800-648-4579		
E-mail	Not available. 800-424-9300		
Emergency phone number	800-424-9300		
2. Hazard(s) identification	1		
Physical hazards	Not classified.		
lealth hazards	Sensitization, skin	Category 1A	
Environmental hazards	Hazardous to the aquatic environment, acute hazard	Category 3	
	Hazardous to the aquatic environment, long-term hazard	Category 3	
OSHA defined hazards	Not classified.		
Signal word	Warning		
Hazard statement	May cause an allergic skin reaction. Harmful to lasting effects.	o aquatic life. Harmful to aquation	c life with long
Precautionary statement			
Prevention	Avoid breathing mist/vapors. Contaminated we workplace. Avoid release to the environment.		d out of the
Response	If on skin: Wash with plenty of water. If skin im Wash contaminated clothing before reuse.	itation or rash occurs: Get medi	cal advice/attention.
Storage	Store away from incompatible materials.		
Disposal	Dispose of contents/container in accordance v	vith local/regional/national/interr	national regulations.
Hazard(s) not otherwise classified (HNOC)	None known.		
Supplemental information	7.03% of the mixture consists of component(s) mixture consists of component(s) of unknown		city. 7.03% of the
3. Composition/informati	on on ingredients		
Mixtures			
Chemical name	Common name and synonyms	CAS number	%
Poly(oxyethylene) Octylphenyl Ether		9036-19-5	5 - < 10

Material name: CT907 CT907 Version #: 01 Issue date: 06-10-2021

Occupational exposure limits	This mixture has no ingredients that have PEL, TLV, or other recommended exposure limit.	
Biological limit values	No biological exposure limits noted for the ingredient(s).	
Appropriate engineering controls	Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.	
Individual protection measures	s, such as personal protective equipment	
Eye/face protection	Wear safety glasses with side shields (or goggles). Face shield is recommended.	
Skin protection		
Hand protection	Wear appropriate chemical resistant gloves.	
Other	Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.	
Respiratory protection	In case of insufficient ventilation, wear suitable respiratory equipment.	
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.	
General hygiene considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of th workplace.	
9. Physical and chemica	I properties	
Appearance		
Physical state	Liquid.	
Form	Liquid. Liquid	
Color	Colorless	
Odor	Mild	
Odor threshold	Not available.	
pН	7.2 100	

Melting point/freezing point	30.20 °F (-1.00 °C)
Initial boiling point and boiling range	211.95 °F (99.97 °C) estimated
Flash point	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or expl	losive limits
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	0.00001 hPa estimated
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Explosive properties	Not explosive.

5-chlor-2-methyl-4-isothiazolin-3	3-on	26172-55-4	< 0.1	
e Other components below report	able levels		90 - 100	
4. First-aid measures				
Inhalation	Move to fresh air. Call a physician if sympton	ns develop or persist.		
Skin contact	Remove contaminated clothing immediately a eczema or other skin disorders: Seek medica			
Eye contact	Rinse with water. Get medical attention if irrit	ation develops and persists.		
Ingestion	Rinse mouth. Get medical attention if sympto	ms occur.		
Most important symptoms/effects, acute and delayed	May cause an allergic skin reaction. Dermatil	tis. Rash.		
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and tre Symptoms may be delayed.	at symptomatically. Keep victi	m under observatior	
General information	Ensure that medical personnel are aware of a protect themselves. Wash contaminated cloth		ke precautions to	
5. Fire-fighting measures				
Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Cart			
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as the	nis will spread the fire.		
Specific hazards arising from the chemical	During fire, gases hazardous to health may b			
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full p	•	n in case of fire.	
Fire fighting equipment/instructions	Move containers from fire area if you can do			
Specific methods	Use standard firefighting procedures and con	sider the hazards of other invo	olved materials.	
General fire hazards	No unusual fire or explosion hazards noted.			
6. Accidental release meas	sures			
Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep pe appropriate protective equipment and clothin not touch damaged containers or spilled mate Ensure adequate ventilation. Local authoritie contained. For personal protection, see secti	g during clean-up. Avoid breat erial unless wearing appropria s should be advised if significa	hing mist/vapors. Do te protective clothing	
Methods and materials for	Prevent product from entering drains.			
containment and cleaning up	Large Spills: Stop the flow of material, if this i possible. Absorb in vermiculite, dry sand or e recovery, flush area with water.			
	Small Spills: Wipe up with absorbent materia remove residual contamination.	I (e.g. cloth, fleece). Clean sur	face thoroughly to	
Environmental precautions	Never return spills to original containers for re Avoid release to the environment. Inform app environmental releases. Prevent further leaked drains, water courses or onto the ground.	propriate managerial or supervi	isory personnel of al	
7. Handling and storage				
Precautions for safe handling	Avoid breathing mist/vapors. Avoid contact w ventilation. Wear appropriate personal protec Observe good industrial hygiene practices.			
Conditions for safe storage, including any incompatibilities	Store in tightly closed container. Store away SDS).	from incompatible materials (s	ee Section 10 of the	
Material name: CT907			sr	

Oxidizing properties Not oxidizing. 92.56 % estimated Percent volatile Pounds per gallon 8.45 Specific gravity 1.01 @ 20C 10. Stability and reactivity Reactivity The product is stable and non-reactive under normal conditions of use, storage and transport Chemical stability Material is stable under normal conditions. Possibility of hazardous reactions Conditions to avoid No dangerous reaction known under conditions of normal use. Contact with incompatible materials. Incompatible materials Strong oxidizing agents. No hazardous decomposition products are known. Hazardous decomposition products 11. Toxicological information Information on likely routes of exposure Inhalation No adverse effects due to inhalation are expected. Skin contact May cause an allergic skin reaction. Eye contact Direct contact with eyes may cause temporary irritation. Ingestion Expected to be a low ingestion hazard. Symptoms related to the physical, chemical and toxicological characteristics May cause an allergic skin reaction. Dermatitis. Rash. Information on toxicological effects Acute toxicity Not known Prolonged skin contact may cause temporary irritation. Skin corrosion/irritation Serious eye damage/eye irritation Direct contact with eyes may cause temporary irritation. Respiratory or skin sensitization Respiratory sensitization Not a respiratory sensitizer. Skin sensitization May cause an allergic skin reaction. No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic. Not classifiable as to carcinogenicity to humans. Germ cell mutagenicity Carcinogenicity IARC Monographs. Overall Evaluation of Carcinogenicity Not listed. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053) Not regulated. US. National Toxicology Program (NTP) Report on Carcinogens Not listed. Reproductive toxicity This product is not expected to cause reproductive or developmental effects. Specific target organ toxicity - Not classified. single exposure Specific target organ toxicity - Not classified. repeated exposure Aspiration hazard Not an aspiration hazard. 12. Ecological information

Ecotoxicity Harmful to aquatic life with long lasting effects

erial name: CT907 CT907 Version #: 01 Issue date: 06-10-2021 sds us 1 / 7

Product		Species	Test Results
CT907			
Aquatic Crustacea	LC50	Coriodophoio dubio	554.9 mg/L 49 hours
Crustacea	LC50	Ceriodaphnia dubia	554.8 mg/l, 48 hours
		Deshais sulau	427 mg/l, 48 hours
		Daphnia pulex	812 mg/l, 48 hours
<b>F</b> . 1	1005	Opossum shrimp order (Mysida)	83.5 mg/l, 48 hours
Fish	IC25	Fathead minnow (Pimephales promelas)	89 mg/l, 7 days
	LC50	Fathead minnow (Pimephales promelas)	354 mg/l, 48 hours
			168 mg/l, 96 hours
			98.1 mg/l, 96 hours
		Sheepshead minnow (Cyprinodon variegatus)	278.4 mg/l, 96 hours
	LOEC	Fathead minnow (Pimephales promelas)	125 mg/l, 7 days
	NOEC	Fathead minnow (Pimephales promelas)	63 mg/l, 7 days
ersistence and degradability	No data is ava	ailable on the degradability of any ingredier	nts in the mixture.
ioaccumulative potential	No data availa	able.	
lobility in soil	No data availa	able.	
ther adverse effects		erse environmental effects (e.g. ozone depl ocrine disruption, global warming potential)	
13. Disposal consideration	ons		
Disposal instructions	material unde into sewers/w container. Dis regulations.	claim or dispose in sealed containers at lic r controlled conditions in an approved incin ater supplies. Do not contaminate ponds, w pose of contents/container in accordance v	erator. Do not allow this material to drain vaterways or ditches with chemical or used
ocal disposal regulations		cordance with all applicable regulations.	
azardous waste code		Corrosive material [pH <=2 or =>12.5, or c de should be assigned in discussion betwe pany.	
Vaste from residues / unused products		accordance with local regulations. Empty c ues. This material and its container must be uctions).	
Contaminated packaging		d containers may retain product residue, fol ty containers should be taken to an approv	
14. Transport information	n		
от			
Not regulated as dangerous	goods.		
ATA			
Not regulated as dangerous	goods.		
IDG			
Not regulated as dangerous	goods. Not establishe		
ransport in bulk according to nnex II of MARPOL 73/78 and ne IBC Code	NOT ESTADIISHE		
15. Regulatory information	on		
S federal regulations		s a "Hazardous Chemical" as defined by th CFR 1910.1200.	e OSHA Hazard Communication
Toxic Substances Control	Act (TSCA)		
. ,		n (40 CFR 707, Subpt. D)	
5-chlor-2-methyl-4-i (CAS 26172-55-4)	sothiazolin-3-one	e 1.0 % One-Time Export I	Notification only.
Naterial name: CT907			SDS U
CT907 Version #: 01 Issue date:	06-10-2021		5/7

Eldridge IA
Ashland VA
Eldridge IA
Nederland TX

Nederland 1X
-
<b>A</b>
(11)
<b>U</b>

Issue date	06-10-2021
Version #	01
HMIS® ratings	Health: 1 Flammability: 0 Physical hazard: 0 Personal protection: X
Disclaimer	Chem Treat cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available. Although the information and recommendations set of the herein (hereinafter "information") are presented in good faith and believed to be correct as of the date hereof. Information" are presented in condition that the persons receiving same will make their own determination as to its suitability for their purposes prior to use. In no event will Chem Treat. Inc. be responsible for damages of any nature whatsoever resulting from the use or reliance upon information. No representation or waranities, either expressed or implied, of merchantability, fitness for a particular purpose, or of any other nature are made hereunder with respect to information or the product to which information refers.
Other information	Prepared by: Product Compliance Department; ProductCompliance@chemtreat.com

SARA 304 Emergency release	se notification	
Not regulated.		
	d Substances (29 CFR 1910.1001-1053)	
Not regulated.		
SARA 302 Extremely hazard	authorization Act of 1986 (SARA) Jous substance	
Not listed.		
SARA 311/312 Hazardous chemical	Yes	
Classified hazard categories	Respiratory or skin sensitization	
SARA 313 (TRI reporting) Not regulated.		
Other federal regulations		
Clean Air Act (CAA) Section	112 Hazardous Air Pollutants (HAPs) List	
Not regulated. Clean Air Act (CAA) Section	112(r) Accidental Release Prevention (40 CFR 68.130)	
Not regulated.		
Safe Drinking Water Act (SDWA)	Not regulated.	
US state regulations		
California Proposition 65		
	Water and Toxic Enforcement Act of 1986 (Proposition 65): This materi ny chemicals currently listed as carcinogens or reproductive toxins. Fo ww.P6SWarnings.ca.gov.	
is not known to contain an more information go to w	ny chemicals currently listed as carcinogens or reproductive toxins. Fo	r
is not known to contain ar more information go to w US. California. Candidat subd. (a))	ny chemicals currently listed as carcinogens or reproductive toxins. Fo ww.P65Warnings.ca.gov. te Chemicals List. Safer Consumer Products Regulations (Cal. Co	r
is not known to contain ar more information go to wy US. California. Candidat subd. (a)) Poly(oxyethylene) Ou	ny chemicals currently listed as carcinogens or reproductive toxins. Fo ww.P65Warnings.ca.gov.	r
is not known to contain ar more information go to w US. California. Candidat subd. (a)) Poly(oxyethylene) Oo nternational Inventories	ny chemicals currently listed as carcinogens or reproductive toxins. Fo ww.P65Warnings.ca.gov. te Chemicals List. Safer Consumer Products Regulations (Cal. Co	r
is not known to contain ar more information go to w US. California. Candidat subd. (a)) Poly(oxyethylene) Oo nternational Inventories Country(s) or region	ny chemicals currently listed as carcinogens or reproductive toxins. Fo ww.P65Warnings.ca.gov. te Chemicals List. Safer Consumer Products Regulations (Cal. Co ctylphenyl Ether (CAS 9036-19-5) Inventory name	r de Regs, tit. 22, 69502.3, On inventory (yes/no)
is not known to contain ar more information go to w US. California. Candidat subd. (a)) Poly(oxyethylene) Or nternational Inventories Country(s) or region Australia	ny chemicals currently listed as carcinogenis or reproductive toxins. Fo www.P65Wamigas.ca.gov. te Chemicals List. Safer Consumer Products Regulations (Cal. Co ctylphenyl Ether (CAS 9036-19-5) Inventory name Australian Inventory of Chemical Substances (AICS)	r de Regs, tit. 22, 69502.3, On inventory (yes/no) Ye:
is not known to contain a' more information go to w US, California. Candidat subd. (a)) Poly(oxyethylene) Oc nternational Inventories Country(s) or region Australia Canada	ny chemicals currently listed as carcinogenis or reproductive toxins. Fo www.P65Wamings.ca.gov. te Chemicals List. Safer Consumer Products Regulations (Cal. Co ctylphenyl Ether (CAS 9036-19-5) Inventory name Australian Inventory of Chemical Substances (AICS) Domestic Substances List (DSL)	r de Regs, tit. 22, 69502.3, On inventory (yes/no)' Yes Yes
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is not known to contain a' more information go to w US, California. Candidat subd. (a)) Poly(oxyethylene) Or nternational Inventories Country(s) or region Australia Canada Canada China	ny chemicals currently listed as carcinogenis or reproductive toxins. Fo www.P65Wamigas.ca.gov. te Chemicals List. Safer Consumer Products Regulations (Cal. Co ctylphenyl Ether (CAS 9036-19-5) Inventory name Australian Inventory of Chemical Substances (AICS) Domestic Substances List (DSL) Non-Domestic Substances List (NDSL) Inventory of Existing Chemical Substances in China (IECSC)	r de Regs, tit. 22, 69502.3, On inventory (yes/no) Yer Yer Nt Yer Yer
is not known to contain a more information go to w US. California. Candidal subd. (a)) Poly(oxyethylene) Oc International Inventories Country(s) or region Australia Canada Canada	ny chemicals currently listed as carcinogenis or reproductive toxins. Fo ww.P65Warnings.ca.gov. te Chemicals List. Safer Consumer Products Regulations (Cal. Co ctylphenyl Ether (CAS 9036-19-5) Inventory name Australian Inventory of Chemical Substances (AICS) Domestic Substances List (NSL) Non-Domestic Substances List (NDSL)	r de Regs, tit. 22, 69502.3, On inventory (yes/no) Yes Ne N Yes Yes
is not known to contain a' more information go to w US, California. Candidat subd. (a)) Poly(oxyethylene) Or nternational Inventories Country(s) or region Australia Canada Canada China	ny chemicals currently listed as carcinogenis or reproductive toxins. For ww.P65Wamings.ca.gov. te Chemicals List. Safer Consumer Products Regulations (Cal. Co ctylphenyl Ether (CAS 9036-19-5) Inventory name Australian Inventory of Chemical Substances (AICS) Domestic Substances List (NSL) Non-Domestic Substances List (NSL) Inventory of Existing Chemical Substances In China (IECSC) European Inventory of Existing Commercial Chemical	r de Regs, tit. 22, 69502.3, On inventory (yes/no)' Yes Yes Nc Yes Nc
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is not known to contain a' more information go to w US, California. Candidat subd. (a)) Poly(oxyethylene) Or nternational Inventories Country(s) or region Australia Canada Canada China Europe Europe Japan Korea	ny chemicals currently listed as carcinogenis or reproductive toxins. Fo www.P65Wamigas.ca.gov. te Chemicals List. Safer Consumer Products Regulations (Cal. Co ctylphenyl Ether (CAS 9036-19-5) Inventory name Australian Inventory of Chemical Substances (AICS) Domestic Substances List (DSL) Non-Domestic Substances List (NDSL) Inventory of Existing Chemical Substances in China (IECSC) European Inventory CS) European Isit (POSL) European List of Notified Chemical Substances (ELINCS) Inventory of Existing and New Chemical Substances (ENCS) Existing Chemicals List (ECL)	r de Regs, tit. 22, 69502.3, On inventory (yes/no)' Yes No Yes No Yes Yes Yes Yes Yes
is not known ho contain ar more information go to w US. California. Candidal subd. (a)) Poly(oxyethylene) Or nternational Inventories Country(s) or region Australia Canada Canada Canada China Europe Europe Japan Korea New Zealand	ny chemicals currently listed as carcinogenis or reproductive toxins. Fo www.P65Warnigas.ca.gov. te Chemicals List. Safer Consumer Products Regulations (Cal. Co ctylphenyl Ether (CAS 9036-19-5) Inventory name Australian Inventory of Chemical Substances (AICS) Domestic Substances List (DSL) Non-Domestic Substances List (DSL) Inventory of Existing Commercial Chemical Substances (EINECS) European Inventory of Existing Commercial Chemical Substances (EINECS) European List of Notfied Chemical Substances (ELINCS) Inventory of Existing and New Chemical Substances (ENCS) Existing Chemicals List (ECL) New Zealand Inventory Philippine Inventory of Chemicals and Chemical Substances	r

A "No" indicates country(s).

Compliance Information: Halal

Compliance Information: Kosher This product is certified by the Orthodox Unionas Kosher pareve

Material name: CT907 CT907 Version #: 01 Issue date: 06-10-2021

SAFETY DATA SHEET

FlexPro+

sps us 6 / 7

Product identifier	CL5680	
	CL5680	
Other means of identification		
Product code	CL5680	
Recommended use	Cooling Water Treatment	
Recommended restrictions	None known.	
lanufacturer/Importer/Supplie	er/Distributor information	
Manufacturer		
Company name Address	ChemTreat, Inc. 5640 Cox Road	
Address	Glen Allen, VA 23060	
	United States	
Telephone	800-648-4579	
Website	chemtreat.com	
E-mail	productcompliance@chemtreat.com	
mergency phone number	800-424-9300	
2. Hazard(s) identificatio	n	
hysical hazards	Not classified.	
ealth hazards	Skin corrosion/irritation	Category 1B
	Serious eye damage/eye irritation	Category 1
	Sensitization, skin	Category 1
nvironmental hazards	Not classified.	
SHA defined hazards	Not classified.	
Signal word	Danger	
Hazard statement	Causes severe skin burns and eye dama eye damage.	age. May cause an allergic skin reaction. Causes seriou:
Precautionary statement		
Prevention		ughly after handling. Contaminated work clothing must ar protective gloves/protective clothing/eye
Response	contaminated clothing. Rinse skin with w keep comfortable for breathing. If in eyes Remove contact lenses, if present and e	ice vomiting. If on skin (or hair): Take off immediately al ater/shower. If inhaled: Remove person to fresh air and s. Rinse cautiously with water for several minutes. asy to do. Continue rinsing. Immediately call a poison surs: Get medical advice/attention. Wash contaminated
Storage	Store locked up.	
Disposal	Dispose of contents/container in accorda	ince with local/regional/national/international regulations
lazard(s) not otherwise lassified (HNOC)	None known.	
Supplemental information	None.	
3. Composition/informat	ion on ingredients	
<b>Aixtures</b>		
Material name: CL5680		SDS

Sodium hydroxide Reactive Polyhydroxy Complex RPC Other components below repor 4. First-aid measures nhalation Skin contact	table levels Move to fresh air. Call a physician if symptom Remove contaminated clothing immediately a	1310-73-2 proprietary	5 - < 10 3 - < 5 80 - < 90
RPC Other components below repor 4. First-aid measures nhalation	table levels Move to fresh air. Call a physician if symptom Remove contaminated clothing immediately a	ргорлова у	
4. First-aid measures	Move to fresh air. Call a physician if symptom Remove contaminated clothing immediately a		80 - < 90
halation	Remove contaminated clothing immediately a		
	Remove contaminated clothing immediately a		
kin contact			
	or poison control center immediately. Chemic contaminated clothing before reuse.		
Eye contact	Immediately flush eyes with plenty of water for present and easy to do. Continue rinsing. Cal		
ngestion	Call a physician or poison control center imme vomiting occurs, keep head low so that stoma		
Most important symptoms/effects, acute and delayed	Burning pain and severe corrosive skin dama include stinging, tearing, redness, swelling, an blindness could result.		
ndication of immediate nedical attention and special reatment needed	Provide general supportive measures and tre immediately. While flushing, remove clothes v ambulance. Continue flushing during transpor Symptoms may be delayed.	which do not adhere to affecte	d area. Call an
General information	Ensure that medical personnel are aware of the protect themselves. Wash contaminated clother		ike precautions to
5. Fire-fighting measures			
Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carb	on dioxide (CO2).	
Insuitable extinguishing nedia	Do not use water jet as an extinguisher, as th	is will spread the fire.	
Specific hazards arising from he chemical	During fire, gases hazardous to health may be	e formed.	
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full p	rotective clothing must be wor	n in case of fire.
Fire fighting equipment/instructions	Move containers from fire area if you can do s	so without risk.	
Specific methods	Use standard firefighting procedures and con-	sider the hazards of other invo	olved materials.
General fire hazards	No unusual fire or explosion hazards noted.		
6. Accidental release mea	asures		
Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep per appropriate protective equipment and clothing touch damaged containers or spilled material Ensure adequate ventilation. Local authorities contained. For personal protection, see sectio	during clean-up. Do not brea unless wearing appropriate p should be advised if significa	the mist/vapors. Do no rotective clothing.
Methods and materials for containment and cleaning up	Large Spills: Stop the flow of material, if this is possible. Absorb in vermiculite, dry sand or ear recovery, flush area with water.		
	Small Spills: Wipe up with absorbent material remove residual contamination.	(e.g. cloth, fleece). Clean sur	face thoroughly to
	Never return spills to original containers for re	-use. For waste disposal, see	section 13 of the SDS
Invironmental precautions	Avoid discharge into drains, water courses or	onto the ground.	
7. Handling and storage			
Precautions for safe handling	Do not breathe mist/vapors. Do not get in eye Provide adequate ventilation. Wear appropria industrial hygiene practices.		
Conditions for safe storage, ncluding any incompatibilities	Store locked up. Store in tightly closed contai Section 10 of the SDS).	ner. Store away from incompa	itible materials (see
Material name: CL5680	ate: 03-06-2023 Issue date: 03-25-2022		sps ( 2 /

#### Upper/lower flammability or explosive limits

Upper/lower flammability or expl	osive limits
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	0.00001 hPa estimated
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	0 - 200 cps
Other information	
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.
Pounds per gallon	9.77
Specific gravity	1.16 - 1.17 @ 20C
10. Stability and reactivity	
Reactivity	Reacts violently with strong acids. This product may react with oxidizing agents.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Contact with incompatible materials. Do not mix with other chemicals.
Incompatible materials	Strong acids. Oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.
11. Toxicological informat	ion
Information on likely routes of ex	cposure
Inhalation	May cause irritation to the respiratory system. Prolonged inhalation may be harmful.
Skin contact	Causes severe skin burns. May cause an allergic skin reaction.
Eye contact	Causes serious eye damage.
Ingestion	Causes digestive tract burns.
Symptoms related to the physical, chemical and toxicological characteristics	Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.
Information on toxicological effe	cts
Acute toxicity	Not known.
Skin corrosion/irritation	Causes severe skin burns and eye damage.
Skin corrosion/irritation	
Serious eye damage/eye	Causes serious eye damage.
Serious eye damage/eye irritation	Causes serious eye damage.
Serious eye damage/eye irritation	Causes serious eye damage. Not a respiratory sensitizer.
Serious eye damage/eye irritation Respiratory or skin sensitization	
Serious eye damage/eye irritation Respiratory or skin sensitization Respiratory sensitization	Not a respiratory sensitizer.
Serious eye damage/eye irritation Respiratory or skin sensitization Respiratory sensitization Skin sensitization	Not a respiratory sensitizer. May cause an allergic skin reaction. No data available to indicate product or any components present at greater than 0.1% are

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits. US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) Components Type Value Reactive Polyhydroxy Complex, RPC PEL 2 mg/m3 Sodium hydroxide (CAS 1310-73-2) PEL 2 mg/m3 US. ACGIH Threshold Limit Values Туре Value Form Components Reactive Polyhydroxy Complex, RPC TWA 2 mg/m3 Inhalable fraction Sodium hydroxide (CAS 1310-73-2) Ceiling 2 mg/m3 US. NIOSH: Pocket Guide to Chemical Hazards Value Туре Components Reactive Polyhydroxy Complex, RPC 2 mg/m3 TWA Sodium hydroxide (CAS 1310-73-2) Ceiling 2 mg/m3 Biological limit values No biological exposure limits noted for the ingredient(s). Appropriate engineering controls Cool general ventilation into the unit of unitation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, nor other engineering controls to maintain airborne levels below recommended exposure limits, fexposure limits have not been established, maintain airborne levels beto an acceptable level. Eye wash facilities and emergency shower must be available when handling this product. Eye/face protection Wear safety glasses with side shields (or goggles). Skin protection Hand protection Wear appropriate chemical resistant gloves. Other Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended. Respiratory protection In case of insufficient ventilation, wear suitable respiratory equipment. Thermal hazards Wear appropriate thermal protective clothing, when necessary. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work dothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace. General hygiene considerations 9. Physical and chemical properties Appearance Physical state Liquid. Liquid. Form Color Brown. Mild Odor Odor threshold Not available pН 12.5 - 14 Melting point/freezing point 24.80 °F (-4.00 °C) Initial boiling point and boiling range Not available Flash point Not available. Evaporation rate Not available Flammability (solid, gas) Not applicable 
 Material name:
 CL5680

 CL5680
 Version #: 02
 Revision date:
 03-06-2023
 Issue date:
 03-25-2022
 SDS US 3 / 8

8. Exposure controls/personal protection

Occupational exposure limits

IARC Monographs. Overall Not listed. OSHA Specifically Regulate Not regulated. US. National Toxicology Pr Not listed.	ed Substances	(29 CFR 1910.1001-1053)			
Reproductive toxicity	This product i	This product is not expected to cause reproductive or developmental effects.			
Specific target organ toxicity - single exposure	Not classified.				
Specific target organ toxicity - repeated exposure	Not classified.				
Aspiration hazard	Not an aspiration hazard.				
Chronic effects	Prolonged inh	nalation may be harmful.			
12. Ecological informatio	n				
Ecotoxicity		s not classified as environmentally hazardo t large or frequent spills can have a harmfu			
Product		Species	Test Results		
CL5680					
Aquatic					
Crustacea	LC50	Ceriodaphnia dubia	7072 mg/l, 48 hours		
Fish	LC50	Fathead minnow (Pimephales promelas)			
Components		Species	Test Results		
Sodium hydroxide (CAS 1310	0-73-2)				
Aquatic					
Acute Crustacea	EC50	Water flag (Casiadan baia dubia)	24.50 47.42 mm/ 48 hours		
		Water flea (Ceriodaphnia dubia)	34.59 - 47.13 mg/l, 48 hours		
Fish	LC50	Western mosquitofish (Gambusia affinis)	•		
Persistence and degradability		ailable on the degradability of any ingredier	nts in the mixture.		
Bioaccumulative potential	No data avail				
Mobility in soil	No data avail				
Other adverse effects		erse environmental effects (e.g. ozone depl locrine disruption, global warming potential)			
13. Disposal consideration	ons				
Disposal instructions	material unde	eclaim or dispose in sealed containers at lic r controlled conditions in an approved incin vith local/regional/national/international regu	erator. Dispose of contents/container in		
Local disposal regulations	Dispose in ac	cordance with all applicable regulations.			
Hazardous waste code	D002: Waste Corrosive material [pH $<$ 20 cm $>$ 10, corrosive to steel] The waste code should be assigned in discussion between the user, the producer and the waste disposal company.				
Waste from residues / unused products		accordance with local regulations. Empty c ues. This material and its container must be ructions).			
Contaminated packaging		d containers may retain product residue, fol oty containers should be taken to an approv			
14. Transport information	า				
DOT					
UN number UN proper shipping name		iids, n.o.s. (Sodium hydroxide)			
Transport hazard class(es) Class	8				
Subsidiary risk	-				
Material name: CL5680			SDS US		

Label(s)	8
Packing group	11
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	B2, IB2, T11, TP2, TP27
Packaging exceptions	154
Packaging non bulk	202
Packaging bulk	242
TA	
UN number	UN1760
UN proper shipping name	Corrosive liquid, n.o.s. (Sodium hydroxide)
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	II
Environmental hazards	No.
ERG Code	8L
Special precautions for user Other information	Read safety instructions, SDS and emergency procedures before handling.
Passenger and cargo aircraft	Allowed with restrictions.
Cargo aircraft only IDG	Allowed with restrictions.
UN number	UN1760
UN proper shipping name	CORROSIVE LIQUID, N.O.S. (Sodium hydroxide)
Transport hazard class(es)	
Class	8
Subsidiary risk	•
Packing group	1
Environmental hazards	
Marine pollutant	No
EmS	F-A, S-B
	Read safety instructions, SDS and emergency procedures before handling.
ransport in bulk according to	Not established.
nnex II of MARPOL 73/78 and	
e IBC Code	
от	
60	
110 10	
CORROSIVE	
CORROSIVE	
CORROSIVE	
CORROSIVE 8	
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TA; IMDG	
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A; IMDG	
A; IMDS	50 15
A; IMDG	e: 03-06-2023 Issue date: 03-25-2022 6 / 8

Country(s) or region	Inventory name	On inventory (yes/no)*	
United States & Puerto Rico	United States & Puerto Rico Toxic Substances Control Act (TSCA) Inventory		
	ents of this product comply with the inventory requirements administered by the components of the product are not listed or exempt from listing on the inventory a		
16. Other information, incl	uding date of preparation or last revision		
Issue date	03-25-2022		
Revision date	03-06-2023		
Version #	02		
HMIS® ratings	Health: 3 Flammability: 0 Physical hazard: 0 Personal protection: X		
Disclaimer	Chem Treat, Inc. cannot anticipate all conditions under which this inform the products of other manufactures in combination with its product, mor responsibility to ensure safe conditions for handling, storage and dispo- assume liability for loss, nijury, damage or expenses due to improper us sheet was written based on the best knowledge and experience curren information and recommendations set forth herein (hereinafter 'informa good faith and believed to be correct as of the date hereof, Chem Treat erpresentations as to the completeness or accuracy thereof. Informatio condition that the persons receiving same will make their own determin their purposes prior to use. In one vent will Chem Treat, Inc. be respons nature whatsoever resulting from the use or reliance upon information. Information warranties, either expressed or implied, of merchanability, fitness for a any other nature are made hereunder with respect to information or the information refers.	ay be used. It is the user's sal of the product, and to e. The information in the tity available. Although the tition") are presented in , Inc. makes no in is supplied upon the nation as to its suitability for sible for damages of any No representation or particular purpose, or of	
Revision information	Transport Information: Material Transportation Information		

Other information Prepared by: Product Compliance Department; ProductCompliance@chemtreat.com

US federal regulations	This product is a "Hazardous Chemical" as defined by the OSHA Ha Standard, 29 CFR 1910.1200.	azard Communication
Toxic Substances Control		
TSCA Section 12(b) Ex Not regulated.	port Notification (40 CFR 707, Subpt. D)	
CERCLA Hazardous Subst	ance List (40 CER 302 4)	
Sodium hydroxide (CAS	. ,	
SARA 304 Emergency relea		
Not regulated. OSHA Specifically Regulated Not regulated.	ed Substances (29 CFR 1910.1001-1053)	
*	eauthorization Act of 1986 (SARA)	
SARA 302 Extremely hazar		
Not listed		
SARA 311/312 Hazardous chemical	Yes	
Classified hazard	Skin corrosion or irritation	
categories	Serious eye damage or eye irritation Respiratory or skin sensitization	
SARA 313 (TRI reporting) Not regulated.		
Other federal regulations		
Clean Air Act (CAA) Sectio	n 112 Hazardous Air Pollutants (HAPs) List	
Not regulated.		
Clean Air Act (CAA) Sectio	n 112(r) Accidental Release Prevention (40 CFR 68.130)	
Not regulated.		
	Not regulated.	
Not regulated. Safe Drinking Water Act (SDWA)	Not regulated.	
Not regulated. Safe Drinking Water Act (SDWA) US state regulations California Proposition 65 California Safe Drinking is not known to contain a	Water and Toxic Enforcement Act of 1986 (Proposition 65): This mater any chemicals currently listed as carcinogens or reproductive toxins. Fo	
Not regulated. Safe Drinking Water Act (SDWA) US state regulations California Proposition 65 California Safe Drinking is not known to contain a more information go to v US. California. Candidi	Water and Toxic Enforcement Act of 1986 (Proposition 65): This mater	ır
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 Material name: CL5680

 CL5680
 Version #: 02
 Revision date: 03-06-2023
 Issue date: 03-25-2022





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# SAFETY DATA SHEET

#### Section 1. Chemical Product and Company Identification

Product Name: Product Use: Supplier's Name: Emergency Telephone N Address (Corporate Hea Telephone Number for Ir Date of SDS: Revision Date: Revision Number:	dquarters):	Chemical Treatment CL206 Cooling Water and Reverse Osmosis Microbiocide Chem Treat, Inc. (800)424-9300 (Toll Free) 5640 Cox Road Gien Allen, VA 23060 (800)648-4579 March 20, 2019 March 20, 2019 19032001AN
Section 2. Hazard(s) Ide	ntification	

 
 Signal Word:
 DANGER
 V

 GHS Classification(s):
 Eye damage/irritation - Category 1 Skin corrosion/irritation - Category 1 Acute Toxicity (Inhalation - Category 4 Acute Toxicity Oral - Category 4 Hazardous to the aquatic environment Acute - Category 2

 Hazard Statement(s):
 H318 Causes serious eye damage. H314 Causes servere skin burns and eye damage. H314 Causes an allergic skin reaction. H332 Harmful if inhaled. H302 Harmful if inhaled.

Precautionary Statement(s):



Prevention:

Response:

Storage:

Disposal:

Hazards Not Otherwise Classified:

Component 2-2-Dibromo-

Comments

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System of Classification Used:

-3-nitrilopropi

**ChèmTreat** 



P261 Avoid breathing dust/fume/gas/mist/vapors/spray. P264 Wash thoroughly after handling. P270 Do not eat, dink, or smoke when using this product. P271 Use only outdoors or in a well-ventilated area. P272 Contaminated work clothing should not be allowed out of the workplace. P280 Wear protective gloves/protective clothing/eye protection/face protection. P273 Avoid release into the environment.

P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel

doctor/physician. P333 + P313 If skin irritation or rash occurs: Get medical advice/attention. P363 Wash contaminated clothing before reuse.

P501 Dispose of contents and container in accordance with applicable local, regional, national, and/or international regulations.

Classification under 2012 OSHA Hazard Communication Standard

If chemical identity and/or exact percentage of composition has been withheld, this information is considered to be a trade secret.

P405 Store locked up.

CAS Registry # 10222-01-2

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(29 CFR 1910.1200)

None

Section 3. Composition/Hazardous Ingredients

POISON CENTER or doctor/physician if you feel unwell. Rinse mouth. P301 + 330 + 331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. P303 + P361 + P353 IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor/ohyvician.





#### Section 4. First Aid Measures

Inhalation:	Remove to fresh air and keep at rest in a position comfortable fo breathing. Call a poison center or doctor/physician if you feel unwell.
Eyes:	Rinse cautiously with water for several minutes. Remove contac lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor/physician.
Skin:	Immediately remove/take off all contaminated clothing. Rinse ski with water/shower. Wash contaminated clothing before re-use. Immediately call a poison center or doctor/physician.
Ingestion:	DO NOT INDUCE VOMITING. Rinse mouth. Call a POISON CENTER or doctor/physician.
Most Important Symptoms:	N/D
Indication of Immediate Medical Attention and Special Treatment Needed, If Necessary:	Probable mucosal damage may contraindicate the use of gastric lavage. Have the product container, label or MSDS with you when calling a poison control center or doctor, or when going for treatment.

Flammability of the Product:	Not flammable.
Suitable Extinguishing Media:	Use extinguishing media suitable to surrounding fire.
Specific Hazards Arising from the Chemical:	Product may emit toxic gases or fumes under fire conditions.
Protective Equipment:	If product is involved in a fire, wear full protective clothing including a positive-pressure, NIOSH approved, self-contained breathing apparatus.

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**ChemTreat** 

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#### Section 6. Accidental Release Measures

Personal Precautions:	Use appropriate Personal Protective Equipment (PPE).
Environmental Precautions:	This pesticide is toxic to fish and aquatic organisms. Do not discharge effluent containing this product into lakes, ponds, streams, estuaries, oceans or public waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) pernit, and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA.
Methods for Cleaning up:	Contain and recover liquid when possible. Flush spill area with water spray.
Other Statements:	None.

# Section 7. Handling and Storage

Handling:	Wear appropriate Personal Protective Equipment (PPE) when handling this product. Do not get in eyes, or on skin and clothing. Wash thoroughly after handling. Do not ingest. Avoid breathing vapors, mist or dust.
Storage:	Store away from incompatible materials (see Section 10). Store at ambient temperatures. Keep container securely closed when not in use. Label precautions also apply to empty container. Recondition or dispose of empty containers in accordance with government regulations. For Industrial use only. Do not store above 95°F. Store above 95°F. Do not store or handle in aluminum, steel, copper, or their alloys.

# Section 8. Exposure Controls/Personal Protection

Component	Source	Exposure Limits
2-2-Dibromo-3-nitrilopropionamide	N/E	N/E
Engineering Controls:		uate ventilation. The use of local ventilation is ontrol emission near the source.
Personal Protection		
Eyes:		ical splash goggles or safety glasses with ield. Maintain eyewash fountain in work area.
Skin:	Wear butyl each use ar wear protec	ick-drench facilities in work area. rubber or neoprene gloves. Wash them after id replace as necessary. If conditions warrant, tive clothing such as boots, aprons, and prevent skin contact.
Respiratory:	gas dual ca	ccurs, use NIOSH approved organic vapor/acid rtridge respirator with a dust/mist prefilter in with 29 CFR 1910.134.

#### Section 9. Physical and Chemical Properties

Physical State and Appearance:	Liquid, Colorless, Clear
Specific Gravity:	1.225 @ 20°C
pH:	2.2 @ 20°C, 100.0%
Freezing Point:	<-11°F
Flash Point:	212°F
Odor:	Strong
Melting Point:	N/D
Initial Boiling Point and Boiling Range:	>158°F
Solubility in Water:	Appreciable
Evaporation Rate:	N/D
Vapor Density:	N/D
Molecular Weight:	N/D
Viscosity:	N/A
Flammability (solid, gas):	N/D
Flammable Limits:	N/A
Autoignition Temperature:	N/A
Density:	10.20 LB/GA

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### Section 10. Stability and Reactivity

Chemical Stability:	Stable at normal temperatures and pressures.
Incompatibility with Various Substances:	Strong oxidizers, Strong bases, Aluminum/aluminum alloys.
Hazardous Decomposition Products:	Dibromoacetonitrite, Cyanogen bromide, Carbon dioxide, Bromine, Toxic vapors/fumes/gases.
Possibility of Hazardous Reactions:	None known.
Reactivity:	N/D
Conditions To Avoid:	N/D

N/D 0 N/D N/D N/D

#### Section 11. Toxicological Information

Chemical Name	Expos	ure 1	Type of Effect	Concentration	Species
Chemical Treatment CL206	Oral	L	.D50	510 MG/KG	Rat
	Inhalat	ion L	_C50	1.25 MG/L	Rat
	Derma	I L	D50	>2000 MG/KG	Rabbit
Component		Source	Code	Brief Description	
			<b>Ia</b> .		
Component 2-2-Dibromo-3-nitrilopropionamide		Source V/E	Code N/E	Brief Description N/E	
2-2-Dibromo-3-nitrilopropionamide	1				
2-2-Dibromo-3-nitrilopropionamide Likely Routes of Exposure:	N/D				

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### Section 13. Disposal Considerations

PESTICIDE DISPOSAL: Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance. CONTAINER DISPOSAL: Non-refiliable container. Do not reuse or refill this container. Triple rinse or pressure rinse container (or equivilent) promptly after emptying. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by procedures approved by state and local authorities.

#### Section 14. Transport Information

Controlling					Packing
Regulation	UN/NA#:	Proper Shipping Name:	Technical Name:	Hazard Class:	Group:
DOT	UN3265	CORROSIVE LIQUID, ACIDIC,	(2,2-DIBROMO-3-	8	PGIII
		ORGANIC, N.O.S.	NITRILOPROPIONAMIDE)		
IMDG	UN3265	CORROSIVE LIQUID, ACIDIC,	(2,2-DIBROMO-3-	8	PGIII
		ORGANIC, N.O.S.	NITRILOPROPIONAMIDE)		
ICAO	UN3265	CORROSIVE LIQUID, ACIDIC,	(2,2-DIBROMO-3-	8	PGIII
		ORGANIC, N.O.S.	NITRILOPROPIONAMIDE)		
TDG	UN3265	CORROSIVE LIQUID, ACIDIC,	(2,2-DIBROMO-3-	8	PGIII
		ORGANIC, N.O.S.	NITRILOPROPIONAMIDE)		

Note:

### Section 15. Regulatory Information

N/A

#### Inventory Status

United States (TSCA): Canada (DSL/NDSL):

All ingredients listed or exempt. All ingredients listed or exempt.





#### Section 12. Ecological Information

Ecotoxicity					
Species		Duration	Type of Effect	Test Results	
Daphnia magna		48h	LC50	6.2 mg/l	
Bluegill Sunfish		96h	LC50	6.5 mg/l	
Rainbow Trout		96h	LC50	5 mg/l	
Fathead Minnow		96h	LC50	6.8 mg/l	
Ceriodaphnia dubia		48h	LC50	5.733 mg/l	
Sheepshead Minnow		96h	LC50	7 mg/l	-
Persistence and Biodegradability:	N/D				
Bioaccumulative Potential:	N/D				

Bioaccumulative Potential:	N/D
Mobility In Soil:	N/D
Other Adverse Effects:	N/D
Comments:	Based on active ingredient

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<b>ChemTreat</b>
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Federal Regulations

Stat

Com

-					
SARA Title III	Rules				
Sectio Classe	ons 311/312 Hazard es	1			
	Acute Hea			No No Yes No	
Other	Sections				
	Component		Section 313 Toxic Chemical	Section 302 EHS TPQ	CERCLA RQ
	2-2-Dibromo-3-nitrilop	ropionamide	No	N/A	N/A
te Regulations California Pro Special Regu		Noi None known.	ie.		
Compor	nent		States		
2-2-Dib	romo-3-nitrilopropionami	de	None.		
npliance Informa NSF:	tion	Certified to NSF/A NSF as a membra used off-line and f for drinking water.	ne cleaner. This pr		

N/A This product is certified by the Orthodox Union as Kosher for Passover and year-round use. Only when prepared by the following ChemTreat facilities: Ashland, VA; Eldridge, IA; Nederland, TX.

This product has not been evaluated for Halal approval.



Food Regulations:

KOSHER:

Halal:



FIFRA:

Other:

Comments:







#### Disclaimer

Although the information and recommendations and both herein (hereinflaght "information" year presented in good faith and believed to be correct as of the data hered. Chem-Trans. Use, makes no representations as to the completeness to reconstructly thered informations supplied upon the condition that the persons receiving same will make their own determination as to its subballity for their purposes prior to use. In no event will Chem Treat, Inc. be responsible for damages of any nature whatsoever, ensuing thom the use or relations upon information. No representation or warraited is getter and the information of the relation of the information or the presentation or warraited in the information of the information or the relation of the information or the infor

### Section 16. Other Information

HMIS Hazard Rating	
Health: Flammability: Physical Hazard: PPE:	3 1 1 X
Notes:	The PPE rating depends on circumstances of use. See Section 8 for recommended PPE. The Hazardous Material Information System (HMIS) is a voluntary, subjective alpha-numeric symbolic system for recommending hazard risk and personal protection equipment information. It is a subjective rating system based on the evaluator's understanding of the chemical associated risks. The end-user must determine if the code is appropriate for their use.

None

None.

Abbreviations

Abbreviation	Definition
<	Less Than
>	Greater Than
ACGIH	American Conference of Governmental Industrial Hygienists
EHS	Environmental Health and Safety Dept
N/A	Not Applicable
N/D	Not Determined
N/E	Not Established
OSHA	Occupational Health and Safety Dept
PEL	Personal Exposure Limit
STEL	Short Term Exposure Limit
TLV	Threshold Limit Value
TWA	Time Weight Average
UNK	Unknown

Prepared by: Revision Date: Product Compliance Department; ProductCompliance@chemtreat.com March 20, 2019

Registered pesticide under 40 CFR 152.10, Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), EPA Registration Number: 464-426-15300.

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Chemical Treatment CL206

**ChemTreat** 



# SAFETY DATA SHEET

Section 1. Chemical Product and Company Identification

Product Name: Product Use: Supplier's Name: Emergency Telephone Number:	ChemTreat BL1302 Boiler Water Treatment ChemTreat, Inc. (800)424-9300 (Toll Free)
Address (Corporate Headquarters):	5640 Cox Road
	Glen Allen, VA 23060
Telephone Number for Information:	(800)648-4579
Date of SDS:	August 13, 2019
Revision Date:	August 13, 2019
Revision Number:	19081301AN

DANGER

#### Section 2. Hazard(s) Identification



Skin corrosion/irritation – Category 1b Eye damage/irritation – Category 1 Acute Toxicity Oral – Category 4

H314 Causes severe skin burns and eye damage. H318 Causes serious eye damage. H302 Harmful if swallowed.

Precautionary Statement(s):

Signal Word:

GHS Classification(s):

Hazard Statement(s):

Prevention:

P260 Do not breathe dust/fume/gas/mist/vapors/spray. P264 Wash thoroughly after handling. P270 Do not eat, drink, or smoke when using this product. P271 Use only outdoors or in a well-ventilated area. P280 Wear protective gloves/protective clothing/eye protection/face protection.



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Response:	P301 + P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell P301 + 330 + 331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. P303 + P331 + P353 IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P310 Immediately call a POISON CENTER/doctor. P363 Wash contaminated clothing before reuse.
Storage:	P405 Store locked up.
Disposal:	P501 Dispose of contents and container in accordance with applicable local, regional, national, and/or international regulations.
System of Classification Used:	Classification under 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).
Hazards Not Otherwise Classified:	None.

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### Section 3. Composition/Hazardous Ingredients

Component	CAS Registry #	Wt.%	
Sodium hydroxide	1310-73-2	10 - 30	
Comments	y and/or exact percenta mation is considered to	ge of composition has been be a trade secret.	

#### Section 4. First Aid Measures

Inhalation:	Call a POISON CENTER or doctor/physician if you feel unwell.
Eyes:	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor/dhvisician

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Most Important Symptoms:

Indication of Immediate Medical Attention and Special Treatment Needed, If Necessary:

Flammability of the Product:

Suitable Extinguishing Media:

Specific Hazards Arising from the Chemical:

Protective Equipment:

Personal Precautions:

**Environmental Precautions:** 

Methods for Cleaning up:

Other Statements:

Section 5. Fire Fighting Measures

Section 6. Accidental Release Measures

N/D

N/A

Not flammable

Skin:

Ingestion:



Immediately remove/take off all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before re-use. Immediately call a poison center or doctor/physician.

DO NOT INDUCE VOMITING. Rinse mouth. Call a POISON CENTER or doctor/physician.

Use extinguishing media suitable to surrounding fire.

Use appropriate Personal Protective Equipment (PPE). Avoid dispersal of spilled material and runoff and contact with

Contain and/or absorb spill with inert material then place in suitable container.

If RQ (Reportable Quantity) is exceeded, report to National Spill Response Office at 1–800–424–8802. Reportable Quantity of the product is 376 Gal.

If product is involved in a fire, wear full protective clothing including a positive-pressure, NIOSH approved, self-contained breathing apparatus.

Use water spray to keep containers cool.

soil, waterways, drains, and sewers.





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Section 7. Handling and Storage

Handling:	Wear appropriate Personal Protective Equipment (PPE) when handling this product. Do not get in eyes, or on skin and clothing. Wash thoroughly after handling. Do not ingest. Avoid breathing vapors, mist or dust.
Storage:	Store away from incompatible materials (see Section 10). Store at ambient temperatures. Keep container securely closed when not in use. Label precautions also apply to empty container. Recondition or dispose of empty containers in accordance with government regulations. For Industrial use only. Store above Freeze Point.

#### Section 8. Exposure Controls/Personal Protection

omponent	Source	Exposure Limits	
odium hydroxide	ACGIH TLV	2 mg/m <sup>3</sup> Ceiling	
	OSHA PEL	2 mg/m <sup>3</sup> TWA	
ngineering Controls:		only with adequate ventilation. The use of local ventilation is nmended to control emission near the source.	
ersonal Protection			
Eyes:		nical splash goggles or safety glasses with hield. Maintain eyewash fountain in work area.	
Skin:	Wear buty each use wear prote	Maintain quick-drench facilities in work area. Wear butyl rubber or neoprene gloves. Wash them after each use and replace as necessary. If conditions warrant, wear protective clothing such as boots, aprons, and coveralls to prevent skin contact.	
Respiratory:	gas dual o	If misting occurs, use NIOSH approved organic vapor/acid gas dual cartridge respirator with a dust/mist prefilter in accordance with 29 CFR 1910.134.	

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### Section 9. Physical and Chemical Properties

Liquid, Colorless, Clear 1.2.77 @ 20°C 14.0 @ 20°C, 100.0% <<-13°F N/D Mid N/A 212°F Complete N/A As Water N/D N/A N/A N/A N/A N/A N/A N/A N/A
N/D N/D N/D

### Section 10. Stability and Reactivity

Stable at normal temperatures and pressures.
Strong oxidizers, Acids, Aluminum/aluminum alloys, Tin, Zinc.
Hydrogen, Oxides of sodium.
None known.
N/D
N/D

# ChemTreat

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# Section 11. Toxicological Information

Chemical Name	Exposure	Type of Effect	Concentration	Species
Sodium hydroxide	Oral	LD50	300 MG/KG	Rat
	Dermal	LD50	1350 MG/KG	Rabbit
ChemTreat BL1302	N/D	N/D	N/D	N/D
Carcinogenicity Category				
Component	Source		Brief Description	
Sodium hydroxide	N/E	N/E	N/E	
Likely Routes of Exposure:	N/D			
Symptoms				
Inhalation:	N/D			
Eye Contact:	N/D			
Skin Contact:	N/D			
Ingestion:	N/D			
Skin Corrosion/Irritation:	N/D			
Serious Eye Damage/Eye Irritation:	N/D			
Sensitization:	N/D			
Germ Cell Mutagenicity:	N/D			
Reproductive/Developmental Toxicity:	N/D			
Specific Target Organ Toxicity				
Single Exposure:	N/D			
Repeated Exposure:	N/D			
Aspiration Hazard:	N/D			
Comments:	None			









# Section 12. Ecological Information

Species		Duration	Type of Effect	Test Results
Bluegill Sunfish		96h	LC50	198 mg/l
Mosquito fish		96h	LC50	250 mg/l
Ceriodaphnia dubia		48h	LC50	4923 mg/l
Persistence and Biodegradability:	N/D			
Bioaccumulative Potential:	N/D			
Mobility In Soil:	N/D			
Other Adverse Effects:	N/D			
Comments:	None.			

### Section 13. Disposal Considerations

Dispose of in accordance with local, state and federal regulations. EPA corrosivity characteristic hazardous waste D002 when disposed of in the original product form.

#### Section 14. Transport Information

Controlling					Packing
Regulation	UN/NA#:	Proper Shipping Name:	Technical Name:	Hazard Class:	Group:
DOT	UN1824	SODIUM HYDROXIDE SOLUTION	N/A	8	PGII
Over 376 GA	RQ UN1824	SODIUM HYDROXIDE SOLUTION	N/A	8	PGII
IMDG	UN1824	SODIUM HYDROXIDE SOLUTION	N/A	8	PGII
TDG	UN1824	SODIUM HYDROXIDE SOLUTION	N/A	8	PGII
ICAO	UN1824	SODIUM HYDROXIDE SOLUTION	N/A	8	PGII

Note:

N/A

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# Compliance Information

NSF:		N/A
Food Regulations:		FDA: All ingredients in this product are authorized in 21 CFR 173.310 for use as "Boiler Water Additives" where the steam may contact food. FDA: Generally Recognized as Safe (GRAS) by the FDA at 21 CFR 184.1763.
KOSHER:		This product is certified by the Orthodox Union as kosher pareve. Only when prepared by the following ChemTreat facilities: Ashland, VA; Eldridge, IA; Nederland, TX; Fontana, CA.
Halal:		This product has not been evaluated for Halal approval.
FIFRA:		N/A
Other:		None
Comments:	None.	

#### Section 16. Other Information

HMIS	Hazard	Rating

F	lealth: lammability: Physical Hazard: PE:	3 0 1 X
Notes:		The PPE rating depends on circumstances of use. See Section 8 for recommended PPE. The Hazardous Material Information System (HMIS) is a voluntary, subjective alpha-numeric symbolic system for recommending hazard risk and personal protection equipment information. It is a subjective rating system based on the evaluator's understanding of the chemical associated risks. The end-user must determine if the code is appropriate for their use.

#### Abbreviations

Abbreviation	Definition
<	Less Than
>	Greater Than
ACGIH	American Conference of Governmental Industrial Hygienists

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# Section 15. Regulatory Information

	United States (TSCA): Canada (DSL/NDSL):		All ingredients All ingredients		
Federal Reg	ulations				
SARA	Title III Rules				
	Sections 311/312 Hazard Classes				
	Fire Hazard: Reactive Hazard: Release of Pressure: Acute Health Hazard: Chronic Health Hazard	:		No No Yes No	
	Other Sections				
	Component		Section 313 Toxic Chemical	Section 302 EHS TPQ	CERCLA RO
	Sodium hydroxide	None.	N/A	N/A	1000
	comments.				

#### Special Regulations

Component	States
Sodium hydroxide	MA, MN, NY, PA, WA

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EHS	Environmental Health and Safety Dept		
N/A	Not Applicable		
N/D	Not Determined		
N/E	Not Established		
OSHA	Occupational Health and Safety Dept		
PEL	Personal Exposure Limit		
STEL	Short Term Exposure Limit		
TLV	Threshold Limit Value		
TWA	Time Weight Average		
UNK	Unknown		
Prepared by:	Product Compliance Department; ProductCompliance@chemtreat.com		
Revision Date:	August 13, 2019		

#### Disclaimer

Although the information and recommendations set forth herein (hereinafter "information") are presented in good faith and believed to be correct as of the date hereot. Chem Freat, inc. makes no representations as to the completeness or accuracy thereot. Information is supplied upon the condition that the persons receiving nature withmake there on determination is to its subability of their purposes prior to use. In no event will Chem Treat, then the persons receiving nature withmake there on determination is to its subability of their purposes prior to use. In no event will Chem Treat, then the set of a prior application purpose. The subability of the subability of the set of the









# SAFETY DATA SHEET

Section 1. Chemical Product and Company Identification

Product Name: Product Use: Supplier's Name: Emergency Telephone Number: Address (Corporate Headquarters):
Telephone Number for Information: Date of SDS: Revision Date: Revision Number:

Green Magic® GM1000 Cleaner ChemTreat, Inc. (800)424–9300 (Toll Free) 5640 Cox Road Gien Allen, VA 23060 (800)648–4579 March 9, 2018 March 9, 2018 18030901AN

#### Section 2. Hazard(s) Identification

Signal Word:	None			
GHS Classification(s):	Non-Hazardous Substance			
Hazard Statement(s):	Non-Hazardous Substance			
Precautionary Statement(s):	No significant health risks are expected from exposures under normal conditions of use.			
Prevention:	None.			
Response:	None.			
Storage:	None.			
Disposal:	None.			
System of Classification Used:	Classification under 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).			
Hazards Not Otherwise Classified:	None.			

# Section 3. Composition/Hazardous Ingredients

Component		CAS Registry #	Wt.%		
Components not listed are either non hazard less than 1%	ous or in concentration of	N/A	N/A		
Comments		If chemical identity and/or exact percentage of composition has been withheld, this information is considered to be a trade secret.			
Section 4. First Aid Mea	sures				
Inhalation:	Call a POISON (	Call a POISON CENTER or doctor/physician if you feel unwell.			
Eyes:	lenses, if presen	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice/attention.			
Skin:	Call a poison cer	Call a poison center or doctor/physician if you feel unwell.			
Ingestion:	Rinse mouth. Ca unwell.	II a poison center or do	ctor/physician if you feel		
Most Important Symptoms:	N/D				
Indication of Immediate Medical Attention and Special Treatment Needed, If Necessary:	N/A				
Section 5. Fire Fighting	Measures				
Flammability of the Product:	Not flammable.				

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Suitable Extinguishing Media: Specific Hazards Arising from the Chemical: Use water spray to keep containers cool. If product is involved in a fire, wear full protective clothing including a positive-pressure, NIOSH approved, self-contained breathing apparatus. Protective Equipment:

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#### Section 6. Accidental Release Measures

Personal Precautions:	Use appropriate Personal Protective Equipment (PPE).
Environmental Precautions:	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains, and sewers.
Methods for Cleaning up:	Contain spill and salvage as much material as possible by pumping to salvage tank or drum. Pick up remaining material with a suitable absorbent.
Other Statements:	None.

#### Section 7. Handling and Storage

Handling:	Wear appropriate Personal Protective Equipment (PPE) when handling this product. Do not get in eyes, or on skin and clothing. Wash thoroughly after handling. Do not ingest. Avoid breathing vapors, mist or dust.
Storage:	Store away from incompatible materials (see Section 10). Store at ambient temperatures. Keep container securely closed when not in use. Label precautions also apply to empty container. Recondition or dispose of empty containers in accordance with government regulations. For Industrial use only. Keep from freezing. Store above Freeze Point.

#### Section 8. Exposure Controls/Personal Protection

Exposure Limits			
Component		Source	Exposure Limits
Components not listed are either non hazardous or in		N/E	N/E
concentration of less than 1%			
Engineering Controls: Use only with adequate ventilation. The use of local ventilation recommended to control emission near the source.			

**ChemTreat** 



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#### Personal Protection Eyes:

Skin:

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Safety glasses are recommended if risk of eye contact.

Wear butyl rubber or neoprene gloves. Wash them after each use and replace as necessary. If conditions warrant, wear protective clothing such as boots, aprons, and coveralls to prevent skin contact.

Respiratory:

If misting occurs, use NIOSH approved organic vapor/acid gas dual cartridge respirator with a dust/mist prefilter in accordance with 29 CFR 1910.134.

#### Section 9. Physical and Chemical Properties

Physical State and Appearance: Specific Gravity: pH: Freezing Point: Flash Point: Odor: Metting Point: Initial Boiling Point and Boiling Range: Solubility in Water: Evaporation Rate: Vapor Density: Molecular Weight: Viscosity: Flammabile Limits: Autoignition Temperature: Density: Vapor Pressure: % VOC: Odor Threshold	Liquid, Green, Clear 1.160 @ 20°C 55.@ 20°C 55.@ 20°C N/A Moderate N/A Moderate N/A N/D N/D N/D N/D N/D N/D N/D N/D
n-octanol Partition Coefficient	N/D
Decomposition Temperature	N/D

Evenneuro Limito







Aspiration Hazard:

Comments:



# Section 10. Stability and Reactivity

Chemical Stability:	Stable at normal temperatures and pressures.
Incompatibility with Various Substances:	Strong oxidizers, Strong bases.
Hazardous Decomposition Products:	Oxides of carbon, Hydrocarbons.
Possibility of Hazardous Reactions:	None known.
Reactivity:	N/D
Conditions To Avoid:	N/D

### Section 11. Toxicological Information

Chemical Name	Exp	osure	Type of Effect	Concentration	Species
N/D	N/E	)	N/D	N/D	N/D
Carcinogenicity Category					
Component			Code	Brief Description	
Components not listed are either non hazard concentration of less than 1%	lous or in	N/E	N/E	N/E	
Likely Routes of Exposure: Symptoms	N/D				
Inhalation:		N/D			
Eye Contact:		N/D			
Skin Contact:		N/D			
		N/D			
Ingestion:					

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Serious Eye Damage/Eye Irritation:	N/D	
Sensitization:	N/D	
Germ Cell Mutagenicity:	N/D	
Reproductive/Developmental Toxicity:	N/D	
Specific Target Organ Toxicity		
Single Exposure:		N/D
Repeated Exposure:		N/D

#### Section 12. Ecological Information

N/D

None

Ecotoxicity					
Species		Duration	Type of Effect	Test Results	
Ceriodaphnia dubia		48h	LC50	5176 mg/l	
Fathead Minnow		96h	LC50	884 mg/l	
Oncorhynchus Mykiss		96h	LC50	915 mg/l	
Persistence and Biodegradability:	N/D				
Bioaccumulative Potential:	N/D				
Mobility In Soil:	N/D				
Other Adverse Effects:	N/D				
Comments:	None.				

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### Section 13. Disposal Considerations

Dispose of in accordance with local, state and federal regulations.

### Section 14. Transport Information

Controlling Regulation	UN/NA#:	Proper Shipping Name:	Technical Name:	Hazard Class:	Packing Group:
DOT	N/A	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	N/A	N/A
IMDG	N/A	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	N/A	N/A
TDG	N/A	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	N/A	N/A
ICAO	N/A	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	N/A	N/A
SCT	N/A	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	N/A	N/A

Note:

N/A

#### Section 15. Regulatory Information

Inventory Status

United States (TSCA): Canada (DSL/NDSL):

All ingredients listed. All ingredients listed.





Green Magic® GM1000

Federal Regulations

SARA	Title	ш	Rules

Classes	
Fire Hazard:	No
Reactive Hazard:	No
Release of Pressure:	No
Acute Health Hazard:	No
Chronic Health Hazard:	No

	Section 313	Section 302 EHS	
Component	Toxic Chemical	TPQ	CERCLA RQ
Components not listed are either non hazardous or in	N/A	N/A	N/A
concentration of less than 1%			

None.

Comments: State Regulations

> California Proposition 65: None known.

#### Special Regulations

Component	States
Components not listed are either non hazardous or in	None.
concentration of less than 1%	

International Regulations

Canada	
WHMIS Classification	

Controlled Product Regulations (CPR): N/A

N/A









**Compliance Information** 

NSF:		N/A
Food Regulations:		N/A
KOSHER:		This product has not been evaluated for Kosher approval.
Halal:		This product has not been evaluated for Halal approval.
FIFRA:		N/A
Other:		None
Comments:	None.	

#### Section 16. Other Information

HMIS	Hazard	Rating
------	--------	--------

F	ealth: ammability: hysical Hazard: PE:
Notes:	

SAFETY DATA SHEET

The PPE rating depends on circumstances of use. See Section 8 for recommended PPE. The Hazardous Material Information System (HMIS) is a voluntary, subjective alpha-numeric symbolic system for recommending hazard risk and personal protection equipment information. It is a subjective rating system based on the evaluator's understanding of the chemical associated risks. The end-user must determine if the code is appropriate for their use.

Abbreviations

Abbreviation	Definition	
<	Less Than	
>	Greater Than	
ACGIH	American Conference of Governmental Industrial Hygienists	
EHS	Environmental Health and Safety Dept	
N/A	ot Applicable	
N/D	lot Determined	
N/E	Not Established	
OSHA	Occupational Health and Safety Dept	
PEL	Personal Exposure Limit	
STEL	Short Term Exposure Limit	
TLV	Threshold Limit Value	

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Nouryon



Hazard Statements

H290 May be corrosive to metals. H319 Causes serious eye irritation. H332 Harmful if inhaled. H373 May cause damage to organs (Respiratory Tract) 1 / 18

Abbreviation TWA UNK Definition Time Weight Average Unknown

Prepared by:

Revision Date:

#### Disclaimer

Although the information and recommendations set forth herein (hereinafter "information") are presented in good faith and believed to be correct as of the date hereot. (Dem Treat, Inc. makes no representations as to the completeness or accuracy thereot, Information is supplied upon the condition that the persons received area will make there won determination as to is suitability for their puppose prior to use. In one event this (Dem Treat, Inc. exponsible for damages of any nature whatsever resulting from the use or reliance upon information. No representation or warrantee, ather expressed or impleto, of merchantability, fitness for a particular puppose, or of any othen turna en made herework with segect to information or the product to which information relefs.

March 9, 2018

Product Compliance Department; ProductCompliance@chemtreat.com



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Green Magic® GM1000

#### **Dissolvine E-39**

ersion 2	Revision Date 01/02/2	2018	Print Date 07/11/2019	US / Z
		through p	rolonged or repeated exposure if inha	led.
Precautio	onary Statements :	P260 Do P264 War P271 Use P280 Wer <b>Response</b> P304 + P: air and ke CENTER/ P305 + P: for severa easy to dt P314 Get P314 Get P314 Get Storage: P406 Stor inner liner Disposai:	p only in original container. not breath misit, vapors or spray, sh skin thoroughly after handling. only outdoors or in a well-ventilated ar eye protection/ face protection. 340 + P312 IF INHALED: Remove pe ep comfortable for breathing. Call a F dootor if you feel urwell. S51 + P338 IF IN EYES: Ranse cautio S51 + P338 IF IN EYES. Ranse cautio minutes. Remove contact lenses, if 0. Continue rinsing. medical adv/cer datention if you feel u 313 if eye irritation persists: Get medi orb spillage to prevent material dama e in corrosive resistant container with -	rson to fresh POISON usly with water present and unwell. cal advice/ ge. n a resistant
Carcino	genicity:			
IARC		Group 2B	Possibly carcinogenic to humans	
		Nitrilotriac	etic acid, trisodium salt	5064-31-3
OSHA	:	No compo	onent of this product present at levels 1.1% is on OSHA's list of regulated ca	
NTP	:	equal to 0	nent of this product present at levels 1% is identified as a known or anticip	

### Dissolvine E-39

Version 2	Revision Date 01/02/2018	Print Date 07/11/2019	US / Z8

#### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Common Name	solution	ninetetraacetic acid, tetras	odium salt; Aqueous
Pure substance/mixture	: Mixture		
Hazardous ingredients			
Chemical name	CAS-No.	Classification	Concentration [% W/W]
Ethylenediaminetetraacetic acid,	64-02-8	Acute Tox. 4; H302	>= 30 - < 50
tetrasodium salt		Acute Tox. 4; H332	
		Eye Irrit. 2A; H319	
		STOT RE 2; H373	
Sodium hydroxide	1310-73-2	Met. Corr. 1; H290	>= 0.5 - < 1.9
		Skin Corr. 1A; H314	
		Eye Dam. 1; H318	
		Aquatic Acute 3; H402	
Nitrilotriacetic acid, trisodium salt	5064-31-3	Acute Tox. 4; H302	>= 0.1 - < 1
		Eye Irrit. 2A; H319	
		Carc. 2; H351	

For the full text of the H-Statements mentioned in this Section, see Section 16.

General advice	: Move out of dangerous area. Consult a physician. Show this material safety data sheet to the doctor in attendance.
Inhalation	: If breathed in, move person into fresh air. Consult a physician after significant exposure.
Skin contact	: Take off contaminated clothing and shoes immediately. Rinse immediately with plenty of water.
Eye contact	: Rinse with plenty of water. Remove contact lenses. Protect unharmed eyne while rinsing. Keep eye wide open while rinsing. Obtain medical attention.
Ingestion	: Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Obtain medical attention.
Notes to physician	

Dissolvine E-39

/ersion 2	Revision Date 01/0	2/20	18 Print Date 07/11/2019	US / Z
Symptom	s		The symptoms and effects are as expected from the hazar as shown in section 2. No specific product related symptor are known.	
Risks			Causes serious eye irritation. Hamful if inhaled. May cause damage to organs through prolonged or repeat exposure if inhaled.	ted
Treatment		:	Treat symptomatically.	
	ING MEASURES			
Suitable e	extinguishing media		Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.	
	azards during fire		Water spray may be ineffective unless used by experience	ed
	Specific hazards m the chemical		firefighters. Do not allow run-off from fire fighting to enter drains or wal courses.	ter
Combusti	on products	:	Nitrogen oxides (NOx)	
Special pr for fire-figh	rotective equipment nters	:	In the event of fire, wear self-contained breathing apparatu	IS.
Further in	formation		Collect contaminated fire extinguishing water separately. T must not be discharged into drains. Fire residues and contaminated fire extinguishing water m be disposed of in accordance with local regulations.	
See also	Section 9. Physical a	nd c	hemical properties: Safety data	

Personal precautions, prote Personal precautions	ctive equipment and emergency procedures : Use personal protective equipment. Wear respiratory protection. Ensure adequate ventilation.
Emergency measures on accidental release	<ul> <li>Evacuate personnel to safe areas.</li> <li>Only qualified personnel equipped with suitable protective equipment may intervene.</li> <li>Prevent unauthorized persons entering the zone.</li> </ul>
Environmental precautions	: Do not flush into surface water or sanitary sewer system. If the product contaminates rivers and lakes or drains inform respective authorities.
Methods for cleaning up / Methods for containment	<ul> <li>Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).</li> <li>Keep in suitable, closed containers for disposal.</li> </ul>
Reference to other sections	: For disposal considerations see section 13. For personal protection see section 8.
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Dissolvine E-39

Version 2	Revision Date 01/0	02/2018	Print Date 07/11/2019	US / 28
7. HANDLING	G AND STORAGE			
Handlin	q			
Advice o	n safe handling	Avoid fo Do not b Avoid co Smoking applicati Provide	sufficient air exchange and/or exhaust of rinse water in accordance with local	in work rooms.
	on protection against explosion	: Normal	measures for preventive fire protection.	
Storage				
Requirer	nents for storage nd containers	Keep co place. Store in material	unauthorized access. ntainer tightly closed in a dry and well- closed dark containers made of anti-co ly in original container.	
Other da	ata	: No deco	mposition if stored and applied as direc	cted.

# 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

#### Ingredients with workplace control parameters

Ingredients	CAS-No.	Value	Control parameters	Update	Basis	Form of exposure
Sodium hydroxide	1310-73-2	CEIL	2 mg/m3	1994-09-01	ACGIH	
		с	2 mg/m3	2013-03-01	ACGIH	
	Further information	eye skin	irr: Upper Respirator irr: Eye irritation irr: Skin irritation		1	1
		С	2 mg/m3	2013-10-08	NIOSH REL	
		TWA	2 mg/m3	1997-08-04	OSHA Z-1	
		С	2 mg/m3	1989-01-19	OSHA P0	
		С	2 mg/m3	2014-11-26	CAL PEL	

# Dissolvine E-39

sion 2	Revisi	ion Date 01/02	/2018	Print Date	07/11/2019		US / 2
ACGIH: BEI: MAC: NIOSH: OEL: STEL: TWA:	Biolog Maxim Nation OEL: 0 Short	ical Exposure ium Allowable	e Index e Conce r Occu exposi e limit	pational Safety and			
Hazardous	s substa	nce					
Substance	name	CAS-No.		Value	Control parameters	Basis	Update
Sodium hyr	droxide	1310-73-2		ately Dangerous to Life h Concentration Value	10 mg/m3	US IDLH	1995-03-0
		Further information		nmediately Dangerous to	Life or Health Concen	trations (IDLH)	
Eye/face p	rotection		: Tight	tly fitting safety gogg	lles		
			•		lies		
Skin and b	ody prote	ection	: Prote	ective suit			
Respiratory	nrotect	lan					
	protoot	ION		pproved filter.	erosol formation u	ise a respirat	or with
Hygiene m			an a Filte : Hand prac Whe Whe	pproved filter. r A dle in accordance wi	th good industrial r drink. ce.	, hygiene and	
	easures ental ex	posure conti	an a Filte Filte Prac Whe Was <b>rols</b> : Do r If the	pproved filter. r A dle in accordance wi tice. m using do not eat o m using do not smol	th good industrial r drink. re. ks and at the end water or sanitary	hygiene and of workday.	safety m.
Environme General ad	easures ental ex lvice	posure conti	an a Filte : Hand prac Whe Was rols : Do r If the resp	pproved filter. r A dle in accordance wi tice. In using do not eato in using do not smol h hands before brea hot flush into surface e product contaminal ective authorities.	th good industrial r drink. re. ks and at the end water or sanitary	hygiene and of workday.	safety m.
Environme General ad	ental ex lvice	posure contr	an a Filte : Hand prac Whe Was rols : Do r If the resp	pproved filter. r A dle in accordance wi tice. In using do not eato in using do not smol h hands before brea hot flush into surface e product contaminal ective authorities.	th good industrial r drink. re. ks and at the end water or sanitary	hygiene and of workday.	safety m.
Environme General ad	ental ex lvice	posure contr	an a Filte : Hand prac Whe Was rols : Do r If the resp	pproved filter. r A lide in accordance wi uice. In using do not eat o In using do not smok h hands before brea hot flush into surface product contaminan ective authorities. ES	th good industrial r drink. re. ks and at the end water or sanitary	hygiene and of workday.	safety m.
Environme General ad PHYSICAL A Appearance	ental ex lvice	posure contr EMICAL PRO	an a Filte : Hand prac Whe Was : Do r If the resp	pproved filter. r A le in accordance wi tice. n using do not eat o n using do not smok h hands before brea hot flush into surface product contaminal ective authorities. ES	th good industrial r drink. re. ks and at the end water or sanitary	hygiene and of workday.	safety m.
Environme General ad PHYSICAL A Appearance Form	ental ex lvice	posure contr	an a Filte : Hand prac Whe Was : Do r If the resp : DPERTI : liquid : liquid	pproved filter. r A le in accordance wi tice. n using do not eat o n using do not smok h hands before brea hot flush into surface product contaminal ective authorities. ES	th good industrial r drink. re. ks and at the end water or sanitary	hygiene and of workday.	safety m.
Environme General ad PHYSICAL A Appearance Form Color	ntal ex Nice	posure contr	an a Filte Filte Hand prac Whe Whe Was Cols C Do r If the resp COPPERTI : liquid : liquid : Sligh	pproved filter. r A file in accordance wi tice. n using do not eat o n using do not eat o not flush into surface product contaminal active authorities. ES d yellow	th good industrial r drink. re. ks and at the end water or sanitary	hygiene and of workday.	safety m.
Environme General ad HYSICAL A Appearanc Form Color Odor	easures ental ex Mice ND CHE ce	posure contr	an a Filte Filte Hand Whe Whe Was Cols C Do r If the resp COPPERTI C liquid C liquid S light	pproved filter. rA filter in accordance wi tice. In using do not eat o n using do not eat o not flush into surface product contaminal active authorities. ES d yellow tily ammonia like	th good industrial r drink. re. ks and at the end water or sanitary	hygiene and of workday.	safety m.

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ersion 2 F	Revision Date 01/0	2/2	:018 P	rint Date 07/11/20	19	US / Z8
Melting point		:	Not applicable			
Boiling point/b	oiling range	:	105 - 110 °C			
Flash point		:	not (in)flammable	e Product is not	flammable (aqueous)	
Evaporation ra	ate	:	No data available	e		
Flammability (	solid, gas)	:	Not applicable			
Flammability (	liquids)	:	Not classified as	s a flammability h	azard	
Lower explosion	on limit	:	Not applicable			
Upper explosion	on limit	:	Not applicable			
Vapor pressur	e	:	similar to water			
Relative vapor	density	:	similar to water			
Relative densi	ty	:	1.15 - 1.38			
Bulk density		:	Not applicable			
Water solubilit	у	:	completely misc	ible		
Solubility in ot	her solvents	:	No data available	e		
Partition coeffi octanol/water	cient: n-	:	log Pow: < 0			
Autoignition te	mperature	:	Not applicable			
Decomposition	n temperature	:	No data available	e		
Viscosity, dyn	amic	:	ca. 19 mPa.s at	20 °C		
Viscosity, kine	ematic	:	13.80 - 16.50 m	m2/s at 20 °C		
Explosive prop	perties	:	Not explosive			
Oxidizing prop	erties	:	Not classified as	s oxidizing.		
Corrosive to m	netals	:	Corrosive to me	tals		
	afety datasheet ation or product			ation relating to	safety and does not repl	ace any
STABILITY AN Conditions to	D REACTIVITY		None known.			
Materials to a	DIO	-	Copper Aluminum Zinc			
			Copper alloys Nickel			
Hazardous de	composition	:	Carbon oxides			
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sion 2 Revision	Date 01/02/2018	Print Date 07/11/2019	US / Z8
products	nitrogen	oxides (NOx)	
Thermal decompositio	n : No data a	available	
Reactivity	: Stable ur	ider normal conditions.	
Chemical stability	: Stable ur	nder recommended storage conditions	s.
Hazardous reactions	: No dange	rous reaction known under conditions	s of normal use.
TOXICOLOGICAL INF	ORMATION		
PRODUCT INFORMA	TION:		
Hazard Summary Acute toxicity	: Harmful	if inhaled.	
Skin corrosion/irritation	Not clas	sified based on available information.	
Serious eye damage/e irritation	ye : Causes	serious eye irritation.	
Respiratory or skin sensitization	informat	sitization: Not classified based on available	
Germ cell mutagenicity	/ : Not clas	sified based on available information.	
Carcinogenicity	: Not clas	sified based on available information.	
Reproductive toxicity	: Not clas	sified based on available information.	
STOT-single exposure	: Not clas	sified based on available information.	
STOT-repeated expos		ise damage to organs through prolong e if inhaled.	ged or repeated
Aspiration hazard	: Not clas	sified based on available information.	
Potential Health Effe Inhalation	: Inhalation membran	decomposition can lead to release of rs.	
Skin	: May cau	se skin irritation.	
Eyes	: Causes s	erious eye irritation.	
Ingestion	: May be h	armful if swallowed.	
Aggravated Medical Condition	: None kno	own.	

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Dissolvine E-39

### Dissolvine E-39

	are known.		
oxicology Assessment		Component: Ethylopodiamir	netetraacetic acid, tetrasodium salt
urther information	: May cause damage to organs through prolonged or repeated	Acute oral toxicity	: LD50: 1,780 mg/kg
unner mornauon		Acute dial toxicity	
	exposure.		Species: Rat
			Method: OECD Test Guideline 401
est result		Acute inhalation toxicity	: LC50 (Rat): > 1 - 5 mg/l
cute oral toxicity	: Acute toxicity estimate: 4,506 mg/kg	,	Exposure time: 4 h
,	Method: Calculation method		Test atmosphere: dust/mist
			Method: OECD Test Guideline 412
cute inhalation toxicity	: Acute toxicity estimate : 3.8 mg/l		Read-across (Analogy)
cute innalation toxicity	Exposure time: 4 h		Read-across (Analogy)
		Olda testadara	Out in Ballin
	Test atmosphere: dust/mist	Skin irritation	: Species: Rabbit
	Method: Calculation method		Result: No skin irritation
			Method: OECD Test Guideline 404
kin irritation	: Result: No skin irritation		Read-across (Analogy)
	Method: OECD Test Guideline 439		
		Eye irritation	: Species: Rabbit
ve irritation	: Result: Eye irritation	_ yo maadon	Result: Eye irritation
, o	. Room. Lyo marion		Method: OECD Test Guideline 405
	Desites of even some labeled an		Method. OEOD Test Odideline 400
arget Organ Systemic	: Routes of exposure: Inhalation	0	Advantanta attan Tana
oxicant - Repeated	Target Organs: Respiratory Tract	Sensitization	: Maximization Test
xposure	The substance or mixture is classified as specific target organ		Species: Guinea pig
	toxicant, repeated exposure, category 2.		Result: Does not cause skin sensitization.
			Method: OECD Test Guideline 406
arcinogenicity:			Read-across (Analogy)
ARC	: Group 2B: Possibly carcinogenic to humans		
	Nitrilotriacetic acid, trisodium salt 5064-31-3	Germ cell mutagenicity	
	Group 2B: Possibly carcinogenic to humans	Genotoxicity in vitro	: Result: negative
SHA	: No component of this product present at levels greater than or	Control North Marco	Method: Mutagenicity (Salmonella typhimurium - reverse
	equal to 0.1% is on OSHA's list of regulated carcinogens.		mutation assay)
			Read-across (Analogy)
TP	: No component of this product present at levels greater than or		Read-across (Analogy)
	equal to 0.1% is identified as a known or anticipated		
	carcinogen by NTP.	Genotoxicity in vivo	: Chromosome aberration test in vivo
			Species: Mouse
			Method: OECD Test Guideline 474
			Result: negative
OXICOLOGY DATA FOR			Read-across (Analogy)
UNICOLOGY DATA FOR	THE INGREDIENTS:		
		Carcinogenicity	: Species: Rat
oxicology Assessment		• ,	Application Route: Ingestion
			Result: Not classified due to data which are conclusive
			although insufficient for classification.
omponent: Sodium hydro			Read-across (Analogy)
MR effects	: Mutagenicity: In vivo tests did not show mutagenic effects,		(maidy)
	Tests on bacterial or mammalian cell cultures did not show	Depression to the territory	Casalina Dat
	mutagenic effects.	Reproductive toxicity	: Species: Rat
	¥		NOAEL:
			F1: > 250 mg/kg,
omponent: Nitrilotriaceti			Read-across (Analogy), Literature data.
MR effects	: Carcinogenicity: Limited evidence of a carcinogenic effect.	Target Organ Systemic	: Based on available data, the classification criteria are not
	-	Toxicant - Single exposure	. Desce on available data, the classification fillena are not
est result		Target Organ Systemic	: Routes of exposure: Inhalation
o ac re autre		raiger Organ Systemic	. Rouses of exposure, initialation
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on 2	Revision Date 01/02/2	018 Print Date 07/11/2019	US / Z8
Toxicant - Re exposure	peated	Target Organs: Respiratory Tract The substance or mixture is classified as specific ta toxicant, repeated exposure, category 2.	arget organ
Aspiration to	cicity :	Not classified due to data which are conclusive alth insufficient for classification.	ough
Component: Skin irritation	Sodium hydroxide	Result: Causes severe burns.	
Eye irritation	:	Result: Risk of serious damage to eyes.	
Sensitization	:	Result: Does not cause skin sensitization.	
Germ cell mu Genotoxicity		In vitro tests did not show mutagenic effects	
Component: Acute oral to:	Nitrilotriacetic acie kicity :	<mark>I trisodium salt</mark> LD50: 1,740 mg/kg Species: Rat Method: OECD Test Guideline 401	
Acute inhalati	ion toxicity :	LC50 (Rat): > 5 mg/l Exposure time: 4 h Test atmosphere: dust/mist Assessment: The substance or mixture has no acu inhalation toxicity Literature data.	te
Skin irritation	:	Species: Rabbit Result: No skin irritation	
Eye irritation	:	Result: Irritating to eyes.	
Sensitization	:	Buehler Test Species: Guinea pig Result: Does not cause skin sensitization. Method: OECD Test Guideline 406	
Germ cell mu	tagenicity		
Genotoxicity		Chromosome aberration test in vitro Result: negative Method: OECD Test Guideline 473 Literature data.	
Genotoxicity	in vivo :	Chromosome aberration test in vivo Species: Mouse Result: negative Literature data.	
Reproductive	toxicity :	Species: Rat NOAEL: > 450 mg/kg, Method: OECD Test Guideline 416 Literature data.	

### Dissolvine E-39

Version 2	Revision Date 01/02	2/2018	Print Date 07/11/2019	US / 2				
Torget (	rgan Systemic	· Not close	ified due to data which are conclusive	although				
	- Single exposure		t for classification.	annougn				
Target Organ Systemic : Toxicant - Repeated exposure			Not classified due to data which are conclusive although insufficient for classification.					
Aspiration toxicity :			Not classified due to data which are conclusive although insufficient for classification.					
12 ECOLOGI	CAL INFORMATION							
	T INFORMATION:							
	cology Assessment al ecological on	: None kno	wn.					
Further	information on ecolog	ду						
	-		Protection of Environment; Part 82 Pro	tection of				
Remarks			Stratospheric Ozone - CAA Section 602 Class I Substances This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).					
INGRED	ENTS:							
Ecotoxic	ology Assessment							
	ent: Sodium hydroxi aquatic toxicity		uct has no known ecotoxicological effe	ects.				
Test res	ult							
Compon	ent: Ethylenediamine	etetraacetic	acid, tetrasodium salt					
	ty effects							
Toxicity	o fish	: LC50: > Exposure Species:	time: 96 h					
	to daphnia and other nvertebrates	Species:	0 mg/l time: 48 h Daphnia magna (Water flea) DIN 38412					
		Read-acr	oss (Analogy)					

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### Dissolvine E-39

on 2 Revision Date 01/0		US / Z8				ι
	Exposure time: 72 h Species: algae		Ecotoxicity Toxicity to	fish : LO	C50: > 100 mg/l	
Toxicity to fish (Chronic toxicity)	: NOEC: > 25.7 mg/l Exposure time: 35 d				xposure time: 96 h pecies: Pimephales promelas (fathead minnow)	
	Species: Danio rerio (zebra fish) Test Type: flow-through test Method: OECD Test Guideline 210		Toxicity to aquatic inve	ertebrates E:	C50: > 100 mg/l xposure time: 96 h pecies: Gammarus fasciatus (freshwater shrimp)	
	Read-across (Analogy)		Toxicity to		C50: > 100 mg/l	
Toxicity to daphnia and other : aquatic invertebrates (Chronic toxicity)	: NOEC: > 25 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea) Read-across (Analogy)			S	xposure time: 72 h pecies: Desmodesmus subspicatus (green algae) lethod: OECD Test Guideline 201	
			Toxicity to toxicity)	E: Si	OEC: > 54 mg/l xposure time: 30 d pecies: Pimephales promelas (fathead minnow)	
Elimination information (pers Bioaccumulation	istence and degradability) : Not expected considering the low log Pow value.			Li	terature data.	
Mobility	: Adsorption to the solid soil particles is not expected.		Toxicity to aquatic inve (Chronic to	ertebrates E:	OEC: 9.3 mg/l xposure time: 147 d pecies: Gammarus fasciatus (freshwater shrimp)	
Biodegradability	: Not readily biodegradable, but will degrade after a longe period.	r	(		······································	
				Elimination information (persistence and degradability) Bioaccumulation : Bioaccumulation is unlikely.		
<b>urther information on ecolo</b> Biochemical Oxygen Demand (BOD)	gy : No data available		Mobility	: A	dsorption to the solid soil particles is not expected	
Component: Sodium hydroxi	de		Biodegrada	bility : Re	esult: Readily biodegradable.	
Ecotoxicity effects Foxicity to daphnia and other aquatic invertebrates	: EC50: 40.4 mg/l Exposure time: 48 h Species: Ceriodaphnia (water flea) Test Type: Immobilization		Further inf Biochemica Demand (B		o data available	
			13. DISPOSAL	CONSIDERATIONS		
Elimination information (pers Bioaccumulation	istence and degradability) : Does not bioaccumulate.		Product	D	o not dispose of waste into sewer. o not contaminate ponds, waterways or ditches wi hemical or used container.	th
Mobility	: Can be leached out from soil.				azardous waste ispose of contents/container in accordance with lo	cal
Distribution among environmental compartments	: Transport to air is not expected.			re	gulation.	
Biodegradability	: Result: Not applicable inorganic		Contaminat		mpty remaining contents. ispose of as unused product.	
urther information on ecolo	лv		14. TRANSPOR	T INFORMATION		
Biochemical Oxygen Demand (BOD)	: Not applicable		International R			
Component: Nitrilotriacetic a	cid, trisodium salt		IATA-DGR UN/ID No.	-	N 3267	
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#### Dissolvine E-39

Version 2	Revision Date 01/02/2018		Print Date 07/11/2019	US / Z8
Proper	shipping name	Corrosiv	liquid basic organic n.o.s	

Proper shipping name	: Corrosive liquid, basic, organic, n.o.s. (Ethylenediaminetetraacetic acid, tetrasodium salt)
Class	: 8
Packing group	: 🔟
Labels	: 8
Packing instruction (cargo aircraft)	: 856
Packing instruction (passenger aircraft)	: 852
Packing instruction (LQ)	: Y841
Environmentally hazardous	: no
IMDG-Code	
UN number	: UN 3267
Proper shipping name	: CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S. (Ethylenediaminetetraacetic acid, tetrasodium salt)
Class	: 8
Packing group	: III
Labels	: 8
EmS Code	: F-A, S-B
Marine pollutant	: no

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable for product as supplied.

#### Domestic regulation

49 CFR

No	t regulated	as a	dangerous	dood

### 15 REGULATORY INFORMATION

#### Notification status

DSL	1	YES. All components of this product are on the Canadian DSL
AICS	1	YES. On the inventory, or in compliance with the inventory
ENCS	1	YES. On the inventory, or in compliance with the inventory
ISHL	1	YES. On the inventory, or in compliance with the inventory
KECI	1	YES. On the inventory, or in compliance with the inventory
PICCS	1	YES. On the inventory, or in compliance with the inventory
IECSC	1	YES. On the inventory, or in compliance with the inventory
TCSI	1	YES. On the inventory, or in compliance with the inventory
TSCA	1	YES. All chemical substances in this product are either listed on the
		TSCA Inventory or in compliance with a TSCA Inventory exemption.
For explanation of	obl	previations, see section 16.
FUI EXPIANALION OF	aDI	newalions, see section to.

TSCA list

TS0 TS0

CA 5(a)(2)	÷	No substances are subject to a Significant New Use Rule.
CA 12(b)	2	No substances are subject to TSCA 12(b) export notification
		requirements.

EPCRA - Emergency Planning and Community Right-to-Know

#### CERCLA Reportable Quantity

Ingredients	CAS-No.	Component RQ (lbs)			
Sodium hydroxide 1310-73-2 1000 lbs					
SARA 304 Extremely Hazardous Substances Reportable Quantity					
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#### **Dissolvine E-39**

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H314	:	Causes severe skin burns and eye damage.	
H318		Causes serious eye damage.	
H319	:	Causes serious eye irritation.	
H332	:	Harmful if inhaled.	
H351	:	Suspected of causing cancer.	
H373	:	May cause damage to organs through prolonged or repeate exposure if inhaled.	ed
H402	:	Harmful to aquatic life.	
Full text of	other abbreviations		
ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)	
CAL PEL	:	California permissible exposure limits for chemical contaminants (Title 8, Article 107)	
NIOSH REL	. :	USA. NIOSH Recommended Exposure Limits	
OSHA P0	:	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000	
OSHA Z-1	:	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants	
ACGIH / C	:	Ceiling limit	
ACGIH / CE		Threshold Limit Value - Ceiling (TLV-C)	
CAL PEL /		Ceiling	
NIOSH REL		Ceiling value not be exceeded at any time.	
OSHA P0/		Ceiling limit	
OSHA Z-1 /	TWA :	8-hour time weighted average	

AICS - Australian Inventory of Chemical Substances: ANTT - National Agency for Transport by Land of Brazil: ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; CPR - Controlled Products Regulations; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with X% response; ELx - Loading rate associated with X% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with X% response; ELX - Loading rate associated with X% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with X% response; ELX - Loading rate associated with X% response; EmS - Cancer, TATA - International Ari Transport Association; IBC - International Agency for Research on Cancer, TATA - International Civil Aviation Organization; IECS - Inventory of Existing Chemical Substances in China; IMDG - International Martine Dangerous Goods; IMO - International Martime Organization; ISC - International Civil Aviation Organization; IECS - Inventory of Existing Chemical Substances in China; IMDG - International Martine Dangerous Goods; IMO - International Organization; ISC - International Civil Aviation Organization; IECS - Inventory of Effect Loading Internation to Standardization; IEC - International Civil Aviation; NO(A)EL - No Observed (Adverse) Effect Concentration; ISO 6 of a test population; LDSO - Lenal Dose to Si% of a test population; ISO - International Civil Aviation; NO(A)EL - No Observable; Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable; Effect Concentration; NO(A)EL - No Observable; States (OPSR - (Ousnitative); Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, 1907/2006 of the European Parliament AICS - Australian Inventory of Chemical Substances; ANTT - National Agency for Transport by Land

#### Dissolvine E-39

on 2	Revision Date 01/02/2018	Print Date 07/11/2019	US / 3
This materia	al does not contain any componer	nts with a section 304 EHS RQ.	
SARA 311/	Serious eve	b Metals ty (any route of exposure) damage or eye irritation get organ toxicity (single or repeated	exposure)
SARA 302		al does not contain any components	with a section
SARA 313	known CAS	PQ. al does not contain any chemical con numbers that exceed the threshold wels established by SARA Title III, Se	(De Minimis)
Clean Air A			
	t does not contain any hazardous 112 (40 CFR 61).	air pollutants (HAP), as defined by	the U.S. Clean Air
		subject to disclosure and listed under Prevention (40 CFR 68.130, Subpar	
	t does not contain any chemicals or Final VOC's (40 CFR 60.489	listed under the U.S. Clean Air Act S	Section 111 SOCM
Clean Wat	er Act		
The followin	g Hazardous Substances are list	ed under the U.S. CleanWater Act, S	Section 311, Table
	Sodium hydroxide g Hazardous Chemicals are liste	1310-73-2 d under the U.S. CleanWater Act, Se	1 - 5 % ection 311, Table
	Sodium hydroxide t does not contain any toxic pollu	1310-73-2 tants listed under the U.S. Clean Wa	1 - 5 % ter Act Section 307
US State R	egulations		
Massachus	etts Right To Know		
	Sodium hydroxide Nitrilotriacetic acid, trisodiur	n salt 5064-31-3	1 - 5 % 0.1 - 1 %
Pennsylva	nia Right To Know		
	Ethylenediaminetetraacetic tetrasodium salt		30 - 50 %
New Jerson	Sodium hydroxide	1310-73-2	1 - 5 %
New Jerse	Right To Know		00 50 %
	Ethylenediaminetetraacetic tetrasodium salt		30 - 50 %
	Sodium hydroxide	1310-73-2	1 - 5 %

This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

#### 16. OTHER INFORMATION

Full text of H-State	
H290	: May be corrosive to metals.
H302	: Harmful if swallowed.

### **Dissolvine E-39**

NFPA Classification

Version 2 Revision Date 01/02/2018 Print Date 07/11/2019 US / Z8 UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System Further information HMIS Classification Health Hazard: 2 Chronic Health Hazard: \* Flammability: 0 Physical hazards: 0

Health Hazard: 2 Fire Hazard: 0 Reactivity Hazard: 0



#### Notification status explanation

REACH	1907/2006 (EU)
DSL	Canadian Domestic Substances List (DSL)
AICS	Australia Inventory of Chemical Substances (AICS)
ENCS	Japan. ENCS - Existing and New Chemical Substances Inventory
ISHL	Japan. ISHL - Inventory of Chemical Substances
KECI	Korea. Korean Existing Chemicals Inventory (KECI)
PICCS	Philippines Inventory of Chemicals and Chemical Substances
	(PICCS)
IECSC	China. Inventory of Existing Chemical Substances in China (IECSC)
TCSI	Taiwan Chemical Substance Inventory (TCSI)
TSCA	United States TSCA Inventory

Further information

Revision Date 01/02/2018

The information in this material safety data sheet should be provided to all who will use, handle, store, transport or otherwise be exposed to this product. The user must determine the appropriate measures that need to be implemented for the use and handling of this product in the c ontext of the user's operations and use of this product. The information contained herein the context of the user's operations and use of this product. The information contained nerein supersedes all previously issued bulletins on the subject matter covered. If the date on this document is more than three years old, call to make certain that this sheet is current. No warrantly is made as to the product's mechantability or fitness for any particular purpose, or that any suggested use will not infringe any patent. User must determine for himself, by preliminary tests or otherwise, the suitability of this product for his purposes, including mixing with other products. Nothing contained herein shall be construed as granting or extending any license under any referi patent

The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.









# SAFETY DATA SHEET

Section 1. Chemical Product and Company Identification

Product Name:	
Product Use:	
Supplier's Name:	
Emergency Telephone Number:	
Address (Corporate Headquarter	s):
Telephone Number for Information	n:
Date of SDS:	
Revision Date:	
Revision Number:	

ChemTreat CL240 Defoamer ChemTreat, Inc. (800)424–9300 (Toll Free) 5640 Cox Road Gien Allen, VA 23060 (800)648–4579 July 19, 2019 July 19, 2019 19071902AN

#### Section 2. Hazard(s) Identification

Signal Word:	None
GHS Classification(s):	Non-Hazardous Substance
Hazard Statement(s):	Non-Hazardous Substance
Precautionary Statement(s):	No significant health risks are expected from exposures under normal conditions of use.
Prevention:	None.
Response:	None.
Storage:	None.
Disposal:	None.
System of Classification Used:	Classification under 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).
Hazards Not Otherwise Classified:	None.

### Section 3. Composition/Hazardous Ingredients

Component		CAS Registry #	Wt.%	
Components not listed are either non hazard less than 1%	ous or in concentration of	N/A	N/A	
Comments		If chemical identity and/or exact percentage of composition has been withheld, this information is considered to be a trade secret.		
Section 4. First Aid Mea	isures			
Inhalation:	Call a POISON (	CENTER or doctor/physic	ician if you feel unwell.	
Eyes:	lenses, if present	with water for several m and easy to do. Contin , get medical advice/atte		
Skin:	Call a poison cer	nter or doctor/physician	if you feel unwell.	
Ingestion:	Rinse mouth. Ca unwell.	II a poison center or doo	ctor/physician if you feel	
Most Important Symptoms:	N/D			
Indication of Immediate Medical Attention and Special Treatment Needed, If Necessary:	N/A			
Section 5. Fire Fighting	Measures			
Flammability of the Product:	Not flammable.			
Suitable Extinguishing Media:		g media suitable to surr		

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### Section 6. Accidental Release Measures

Personal Precautions:	Use appropriate Personal Protective Equipment (PPE).
Environmental Precautions:	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains, and sewers.
Methods for Cleaning up:	Contain and recover liquid when possible. Flush spill area with water spray.
Other Statements:	None.

### Section 7. Handling and Storage

Handling:	Wear appropriate Personal Protective Equipment (PPE) when handling this product. Do not get in eyes, or on skin and clothing. Wash thoroughly after handling. Do not ingest. Avoid breathing vapors, mist or dust.
Storage:	Store away from incompatible materials (see Section 10). Store at ambient temperatures. Keep container securely closed when not in use. Label precautions also apply to empty container. Recondition or dispose of empty containers in accordance with government regulations. For Industrial use only. Do not freeze. Store above Freeze Point. If freezes, then product is unusable.

#### Section 8. Exposure Controls/Personal Protection

Exposure Limits			
Component		Source	Exposure Limits
Components not listed are either non hazardous or in		N/E	N/E
concentration of less than 1%			
Engineering Controls:			uate ventilation. The use of local ventilation is ontrol emission near the source.

**ChemTreat** 

Specific Hazards Arising from the Chemical:

Protective Equipment:

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### Personal Protection Eyes:

Skin:

Safety glasses are recommended if risk of eye contact.

Product may emit toxic gases or fumes under fire conditions.

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If product is involved in a fire, wear full protective clothing including a positive-pressure, NIOSH approved, self-contained breathing apparatus.

Wear butyl rubber or neoprene gloves. Wash them after wear buy not replace as necessary. If conditions warrant, wear protective clothing such as boots, aprons, and coveralls to prevent skin contact.

Respiratory:

If misting occurs, use NIOSH approved organic vapor/acid gas dual cartridge respirator with a dust/mist prefilter in accordance with 29 CFR 1910.134.

### Section 9. Physical and Chemical Properties

Physical State and Appearance: specific Gravity: pH:
Freezing Point: Flash Point:
Odor:
Melting Point: Initial Boiling Point and Boiling Range:
Solubility in Water: Evaporation Rate:
Vapor Density: Molecular Weight:
Viscosity:
Flammability (solid, gas): Flammable Limits:
Autoignition Temperature: Density:
Vapor Pressure: % VOC:
Odor Threshold
n-octanol Partition Coefficient Decomposition Temperature









### Section 10. Stability and Reactivity

Chemical Stability:	Stable at normal temperatures and pressures.
Incompatibility with Various Substances:	Strong acids, Strong oxidizers.
Hazardous Decomposition Products:	Oxides of carbon, Oxides of silicon.
Possibility of Hazardous Reactions:	None known.
Reactivity:	N/D
Conditions To Avoid:	N/D

### Section 11. Toxicological Information

Chemical Name	Exp	osure	Type of Effect	Concentration	Species
N/D	N/D		N/D	N/D	N/D
Carcinogenicity Category					
Component		Source	Code	Brief Description	
Components not listed are either non hazar concentration of less than 1%	dous or in	N/E	N/E	N/E	
Likely Routes of Exposure:	N/D				
Symptoms					
		N/D			
Inhalation:		14/8			
Inhalation: Eye Contact:		N/D			
Eye Contact:		N/D			

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N/D	
N/D	
N/D	
N/D	
	N/D
	N/D
N/D	
None.	
	N/D N/D N/D

## Section 12. Ecological Information

Ecotoxicity				
Species		Duration	Type of Effect	Test Results
Daphnia magna		48h	LC50	6000 mg/l
Fathead Minnow		96h	LC50	8600 mg/l
Sheepshead Minnow		96h	LC50	>1000 mg/l
Mysid Shrimp		48h	LC50	>1000 mg/l
Persistence and Biodegradability:	N/D			
Bioaccumulative Potential:	N/D			
Mobility In Soil:	N/D			
Other Adverse Effects:	N/D			
Comments:	None.			

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SDS	Federal Regulations		SDS

### Section 13. Disposal Considerations

Dispose of in accordance with local, state and federal regulations. Not a RCRA-regulated hazardous waste when disposed in the original product form.

### Section 14. Transport Information

Controlling Regulation	UN/NA#:	Proper Shipping Name:	Technical Name:	Hazard Class:	Packing Group:
DOT	N/A	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	N/A	N/A
IMDG	N/A	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	N/A	N/A
TDG	N/A	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	N/A	N/A
ICAO	N/A	COMPOUND, INDUSTRIAL WATER TREATMENT, LIQUID	N/A	N/A	N/A
Note:		N/A			

Note:

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**ChemTreat** 

### Section 15. Regulatory Information

Inventory Status

United States (TSCA): Canada (DSL/NDSL):

All ingredients listed. All ingredients listed.

Sections 311/312 Hazard Classes			
Fire Hazard: Reactive Hazard: Release of Pressure: Acute Health Hazard: Chronic Health Hazard:		No No No No	
Other Sections			
Component	Section 313 Toxic Chemical	Section 302 EHS TPQ	CERCI
Components not listed are either non hererdeus er in	NI/A	NI/A	NI/A

		3601011313	300 LING	
Component		Toxic Chemical	TPQ	CERCLA RQ
Components not listed are either	non hazardous or in	N/A	N/A	N/A
concentration of less than 1%				
Comments:	None.			

State Regulations

California Proposition 65: None known.

Special Regulations

Component		States	
Components not listed are concentration of less than 1		None.	
Compliance Information			
NSF:	N/A		
Food Regulations:	N/A		
KOSHER:	This product has	This product has not been evaluated for Kosher approval.	
Halal:	This product has	This product has not been evaluated for Halal approval.	
FIFRA:	N/A		
Other:	None		
Comments:	None.		

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HMIS Hazard Rating

Notes:

Section 16. Other Information

Health: Flammability: Physical Hazard: PPE:







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### Disclaimer

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Although the information and recommendations set forth herein (hereinafter "information") are presented in good faith and believed to be correct as of the date hered. ChemTest, Inc. makes no representations as to the completeness or accuracy thered. Information is supplied upon the condition that the persons receiving nature whatover resulting from the use or reliance upon information. No representation or warranties, either expressed or implied, or the marked or the conditionation of the spressed or any address that and the expression of a sub-table to the processe price or warranties, either expressed or implied, or the conditionation termine warranties, or of any oder internationality, fitness for a particular purpose, or of any oder international termines with respect to information termines marked to which information refers.

#### Abbreviations

Abbreviation	Definition
<	Less Than
>	Greater Than
ACGIH	American Conference of Governmental Industrial Hygienists
EHS	Environmental Health and Safety Dept
N/A	Not Applicable
N/D	Not Determined
N/E	Not Established
OSHA	Occupational Health and Safety Dept
PEL	Personal Exposure Limit
STEL	Short Term Exposure Limit
TLV	Threshold Limit Value
TWA	Time Weight Average
UNK	Unknown

Prepared by:

Revision Date:

Product Compliance Department; ProductCompliance@chemtreat.com July 19, 2019

The PPE rating depends on circumstances of use. See Section 8 for recommended PPE. The Hazardous Material Information System (HMIS) is a voluntary, subjective alpha-numeric symbolic system for recommending hazard risk and personal protection equipment information. It is a subjective rating system based on the evaluator's understanding of the chemical associated risks. The end-user must determine if the code is appropriate for their use.

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### SAFETY DATA SHEET

1. Identification		
Product identifier	CN202	
Other means of identification	None.	
Recommended use	Cleaner	
Recommended restrictions	None known.	
Manufacturer/Importer/Supplier	/Distributor information	
Manufacturer		
Company name	ChemTreat, Inc. 5640 Cox Road	
Address	Glen Allen, VA 23060	
	United States	
Telephone	800-648-4579	
Website	chemtreat.com	
E-mail	productcompliance@chemtreat.com	
Emergency phone number	800-424-9300	
2. Hazard(s) identificatior	1	
Physical hazards	Not classified.	
Health hazards	Not classified.	
Environmental hazards	Not classified.	
OSHA defined hazards	Not classified.	
Label elements		
Hazard symbol	None.	
Signal word	None.	
Hazard statement	The mixture does not meet the criteria for classification.	
Precautionary statement		
Prevention	Not available.	
Response	Not available	
Storage	Not available.	
•	Not available	
Disposal		
Hazard(s) not otherwise classified (HNOC)	None known.	
Supplemental information	None.	
3. Composition/informati	on on ingredients	
Mixtures		
The manufacturer lists no ingredie	ents as hazardous to health according to OSHA 29 CFR 1910.1200.	
4. First-aid measures		
nhalation	Move to fresh air. Call a physician if symptoms develop or persist.	
Skin contact	Wash off with soap and water. Get medical attention if irritation develops and persists.	
Eye contact	Rinse with water. Get medical attention if irritation develops and persists.	
Ingestion	Rinse mouth. Get medical attention if symptoms occur.	
Most important	Direct contact with eyes may cause temporary irritation.	
symptoms/effects, acute and delayed		
Indication of immediate	Treat symptomatically.	
medical attention and special treatment needed	· · · · ·	
Material name: CN202		SDS

Concernel information	
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.
5. Fire-fighting measures	
Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2). Do not use water jet as an extinguisher, as this will spread the fire.
Unsuitable extinguishing nedia	Do not use water jet as an extinguisher, as this will spread the life.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	Move containers from fire area if you can do so without risk.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	No unusual fire or explosion hazards noted.
6. Accidental release mea	sures
Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.
	Small Spills: Wipe up with absorbent material (e.g. doth, fleece). Clean surface thoroughly to remove residual contamination.
	Never return spills to original containers for re-use. For waste disposal, see section 13 of the SD
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.
7. Handling and storage	
Precautions for safe handling	Do not get in eyes, on skin, or on clothing. Avoid prolonged exposure.
Conditions for safe storage, including any incompatibilities	Store in tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).
8. Exposure controls/pers	onal protection
	the only constituents of the product which have a PEL, TLV or other recommended exposure limit ents have no known exposure limits.
Biological limit values	No biological exposure limits noted for the ingredient(s).
Appropriate engineering controls	Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.
Individual protection measures, Eye/face protection	such as personal protective equipment Wear safety glasses with side shields (or goggles).
Skin protection Hand protection	Wear appropriate chemical resistant gloves.
Other	Wear suitable protective clothing.
Respiratory protection	In case of insufficient ventilation, wear suitable respiratory equipment.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.
9. Physical and chemical	properties
Appearance Physical state	Liquid.
Material name: CN202	SDS
1296 Version #: 01 Issue date: 05-	11-2023 2

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Form	Liquid.	Skin corrosion/irritation		skin contact may cause tempor	
Color	Green Moderate	Serious eye damage/eye irritation	Direct conta	act with eyes may cause tempo	prary irritation.
Odor Odor threshold	Not available	Respiratory or skin sensitizatio	_		
		Respiratory or skin sensitization		ratory sensitizer.	
pH	8.5 - 10.5 (100% Dilution)	Skin sensitization		ct is not expected to cause skin	ensitization
Melting point/freezing point Initial boiling point and boiling	33.80 °F (1.00 °C) Not available.	Germ cell mutagenicity	No data ava	ailable to indicate product or an	y components present at greater than 0.1% are
range				or genotoxic.	
Flash point	Not available.	Carcinogenicity		able as to carcinogenicity to hu	mans.
Evaporation rate	Not available.	IARC Monographs. Overall	Evaluation of	f Carcinogenicity	
Flammability (solid, gas)	Not applicable.	Not listed. OSHA Specifically Regulat	ed Substance	s (29 CFR 1910 1001-1053)	
Upper/lower flammability or exp		Not regulated.	ou oubolanoo	(20 0111 1010.1001 1000)	
Explosive limit - lower (%)	Not available.	US. National Toxicology P	ogram (NTP)	Report on Carcinogens	
Explosive limit - upper (%)	Not available.	Not listed.			
Vapor pressure	Not available.	Reproductive toxicity	This produc	ct is not expected to cause repr	oductive or developmental effects.
Vapor density	Not available.	Specific target organ toxicity -	<ul> <li>Not classified.</li> </ul>		
Relative density	Not available.	single exposure			
Solubility(ies)		Specific target organ toxicity -	Not classifie	ed.	
Solubility (water)	Not available.	repeated exposure			
Partition coefficient (n-octanol/water)	Not available.	Aspiration hazard		iration hazard.	
Auto-ignition temperature	Not available.	Chronic effects	Prolonged i	inhalation may be harmful. May	/ be harmful if absorbed through skin.
Decomposition temperature	Not available.				h the skin in toxic amounts if contact is repeated and
Viscosity	0 - 200 cps		prolonged.	These effects have not been of	observed in humans.
Other information					
Explosive properties	Not explosive.	12. Ecological information	n		
Oxidizing properties	Not oxidizing.	Ecotoxicity			entally hazardous. However, this does not exclude the
Pounds per gallon	8.51	Desident	possibility ti		have a harmful or damaging effect on the environment.
Specific gravity	1 - 1.03 @ 20C	Product CN202		Species	Test Results
10. Stability and reactivity	/	Aquatic			
Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.	Acute			
Chemical stability	Material is stable under normal conditions.	Crustacea	EC50	Daphnia	> 11815 mg/l, 48 hours (Estimated)
Possibility of hazardous	No dangerous reaction known under conditions of normal use.		LC50	Daphnia pulex	> 100 mg/l, 48 hours (Estimated)
reactions		Fish	LC50	Fathead minnow (Pimepha	ales promelas) > 100 mg/l, 96 hours (Estimated)
Conditions to avoid	Contact with incompatible materials.			Fish	> 21428 mg/l, 96 hours (Estimated)
Incompatible materials	Strong oxidizing agents.	Persistence and degradability	No data is a	available on the degradability o	of any ingredients in the mixture.
Hazardous decomposition products	No hazardous decomposition products are known.	Bioaccumulative potential		5 ,	, 5
-		Mobility in soil	No data ava	ailable.	
11. Toxicological informa	tion	Other adverse effects			.g. ozone depletion, photochemical ozone creation
Information on likely routes of e	xposure		potential, er	ndocrine disruption, global war	ming potential) are expected from this component.
Inhalation	Prolonged inhalation may be harmful.	13. Disposal consideration	ons		
Skin contact	2-Butoxy ethanol may be absorbed through the skin in toxic amounts if contact is repeated and prolonged. These effects have not been observed in humans.	Disposal instructions			ontainers at licensed waste disposal site.
		Local disposal regulations Hazardous waste code		accordance with all applicable code should be assigned in dis	cussion between the user, the producer and the waste
Eye contact	Direct contact with eyes may cause temporary irritation.	Hazaruous waste CODE	disposal co		success sources are used, are produced and the waste
Ingestion	Expected to be a low ingestion hazard.	Waste from residues / unused			tions. Empty containers or liners may retain some
Symptoms related to the physical, chemical and toxicological characteristics	Direct contact with eyes may cause temporary irritation.	products	Disposal ins	structions).	ntainer must be disposed of in a safe manner (see: uct residue, follow label warnings even after container i
•	noto	Contaminated packaging			to an approved waste handling site for recycling or
Information on toxicological effe			disposal.		
Acute toxicity	Not known.				
Material name: CN202 1296 Version #: 01 Issue date: 05	sos us 5/1-2023 3 / 6	Material name: CN202 1296 Version #: 01 Issue date: 0	5-11-2023		SDS ( 4 /

14. Transport information		
501		
Not regulated as dangerous go	bods.	
Not regulated as dangerous go	node	
MDG	Jours.	
Not regulated as dangerous go	node	
Transport in bulk according to	Not established.	
Annex II of MARPOL 73/78 and the IBC Code	Not established.	
15. Regulatory information	n	
US federal regulations	This product is not known to be a "Hazardous Chemical" as defined by t Communication Standard, 29 CFR 1910.1200.	he OSHA Hazard
Toxic Substances Control A	ct (TSCA)	
TSCA Section 12(b) Exp Not regulated.	ort Notification (40 CFR 707, Subpt. D)	
CERCLA Hazardous Substa	nce List (40 CFR 302.4)	
Not listed.		
SARA 304 Emergency release	se notification	
Not regulated.		
	d Substances (29 CFR 1910.1001-1053)	
Not regulated.		
	authorization Act of 1986 (SARA)	
SARA 302 Extremely hazard Not listed.	ous substance	
SARA 311/312 Hazardous	No	
chemical	NO	
SARA 313 (TRI reporting) Not regulated.		
Other federal regulations		
Clean Air Act (CAA) Section	112 Hazardous Air Pollutants (HAPs) List	
Not regulated.		
( )	112(r) Accidental Release Prevention (40 CFR 68.130)	
Not regulated.		
Safe Drinking Water Act (SDWA)	Not regulated.	
US state regulations		
is not known to contain ar more information go to wy	Vater and Toxic Enforcement Act of 1986 (Proposition 65): This material y chemicals currently listed as carcinogens or reproductive toxins. For ww.P65Warnings.ca.gov. This product contains trace amounts of which is known in the state of California to cause cancer.	
International Inventories		
Country(s) or region	Inventory name	On inventory (yes/no)
Canada	Domestic Substances List (DSL)	Ye
Canada	Non-Domestic Substances List (NDSL)	N
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Ye
	tents of this product comply with the inventory requirements administered by the go components of the product are not listed or exempt from listing on the inventory ad	
16. Other information, incl	luding date of preparation or last revision	
Issue date	05-11-2023	
Version #	01	
Material name: CN202		SDS U

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ALL CHEMTREC®: 1-800-424-9300 (OUTSIDE	izaru stateri
USA: 1-703-527-3887) LLL: 1-800-511-MSDS (OUTSIDE USA: 1-423-780-2347)	
	ecautionary
um Hypochlorite Granular 427	
MPANY IDENTIFICATION	
ION DATE: 02/08/2016 RCEDES: 06/02/2015	
Number: 00000023097 NYMS: none ICAL FAMILY: Hypochlorite RIPTION / USE Sanitizer and OxidizerWater treatment	
chemical ULA: Not Applicable/Mixture	
CATION	
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ory 3	her hazards
ory 3 (Respiratory system)	ne known.
ory 3 (Respiratory system) Othe	
ory 1	

ÁRCH.	Arch Chemicals, Inc.	SAFETY DATA SHEET

### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

CAS OR CHEMICAL NAME CALCIUM HYPOCHLORITE	<u>CAS #</u> 7778-54-3	<u>% RANGE</u> 60 - 80
SODIUM CHLORIDE	7647-14-5	10 - 20
CALCIUM CHLORATE	10137-74-3	0-5
CALCIUM CHLORIDE	10043-52-4	0-5
CALCIUM HYDROXIDE	1305-62-0	0 - 4
CALCIUM CARBONATE	471-34-1	0-5
Water	7732-18-5	5.5 - 10

### SECTION 4. FIRST AID MEASURES

General Advice:	Call a poison control center or doctor for treatment advice. For 24-hour emergency medical assistance, call Arch Chemical Emergency Action Network at 1-800-654-6911. Have the product container or label with you when calling a poison control center or doctor, or going for treatment.
Inhalation:	IF INHALED: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or doctor for further treatment advice.
Skin Contact:	IF ON SKIN OR CLOTHING: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.
Eye Contact:	IF IN EYES: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.
Ingestion:	IF SWALLOWED. Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.
Notes to Physician:	Probable mucosal damage may contraindicate the use of gastric lavage.

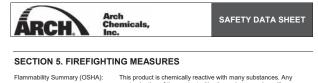


### SAFETY DATA SHEET

	Danger	
S	H272 May intensify fire; o H302 Harmful if swallowe H314 Causes severe skir H331 Toxic if inhaled. H335 May cause respirat	d. burns and eye damage.
ements	other ignition sources. No P220 Keep/Store away fn P220 Keep/Store away fn P220 Keep/Store away fn P260 Do not breathe wap P260 Do not ead, drink or P271 Use only outdoors c P280 Wear protective glo face protection. <b>Response:</b> P301 + P312 IF SWALLC you feel unwell. P301 + P312 IF SWALLC you feel unwell. P303 + P312 IF SWALLC P303 + P301 + P333 IF C immediately all contaming shower. P304 + P340 IF INHALEI rest in a position comforts P305 + P331 + P338 IF C all several minutes. Remove do. Continue rinsing. P301 hmediately call a f P303 head to ration continue rinsing. P310 Immediately call a f P363 Wash contaminatec P307 + P378 In case of fi foam, dry chemical or car <b>Storage:</b> P403 + P233 Store in a w tightly closed. P405 Store locked up. <b>Disposal:</b>	m clothing/ combustible materials. to avoid mixing with combustibles. Jurs. ghly after handling. smoke when using this product. ir in a well-ventilated area. ves/ protective clothing/ eye protection/ WED: Call a POISON CENTER/doctor if WALLOWED: Rinse mouth. Do NOT N SKIN (or hair): Remove/ Take off ted clothing. Rinse skin with water/ Dis Romove vicitim to fresh air and keep at ble for breathing. I EYES: Rinse cautiously with water for contact lenses, if present and easy to VISON CENTER/doctor. clothing before reuse. re: Use water spray, alcohol-resistant

ec Calcium Hypochlorite Granular SION DATE: 02/08/2016

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· · · · · · · · · · · · · · · · · · ·	contamination of the product with other substances by spill or otherwise may result in a chemical reaction and fire. This product is a strong oxidizer which is capable of intensifying a fire once started., Product is not known to be flammable, combustible or pyrophoric.
Flammable Properties	
Flash Point:	Not applicable
Autoignition Temperature:	Not applicable
Extinguishing Media:	Water only. Do not use dry extinguishers containing ammonium compounds.
Fire Fighting Instructions:	Use water to cool containers exposed to fire. See Section 6 for protective equipment for fire fighting.
Upper Flammable / Explosive Limit, % in air:	Not applicable
Lower Flammable / Explosive Limit, % in air:	Not applicable

### SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Protection for Emergency Situations:	Response to a large quantity spill (100 pounds or greater) or when dusting or decomposition gas exposure could occur requires the use of a positive pressure full face supplied air repriator or self contained breathing apparatus (SCBA), chemical resistant gloves, coveralls and bods. In case of fire, this personal protective equipment should be used in addition to normal fire fighter equipment.
Spill Mitigation Procedures	
Air Release:	Vapors may be suppressed by the use of water fog. All water utilized to assist in fume suppression, decontamination or fire suppression may be contaminated and must be contained before disposal and/or treatment.
Water Release:	This product is heavier than water. This material is soluble in water. Monitor all exit water for available chlorine and pH. Advise local authorities of any contaminated water release.

ARCH	Arch Chemicals, Inc.	SAFETY DATA SHEET
Land Release: Additional Spill Information :	may initiate a chemical reaction ti combustible material present, res case of a spill, separate all spilled and other material. Using a clean product into plastic bags, and plas disposal container, properly mark containers made of plastic or mel disposal containers to an isolated packaging material in a disposal decontamination (i.e. removal of all undamaged packaging in a cle and labeled. Call for disposal pro Hazardous concentrations in air r immediately downwind. Remove of spill as soon as possible and n	taminated. Contaminated product hat may spontaneously ignite any utiling in a fire of great intensity. In product from packaging, debris broom or shovel, place all spilled ce those bags into a clean, dry ed and labeled. Disposal al are recommended. Do not seal diately remove all product in area outdoors. Place all damaged container of water to assure all product) before disposal. Place ana, dry container properly marked cedures. may be found in local spill area and all sources of ignition. Stop source
	Consideration. This material may are requested to contact Arch Ch beginning any such procedure. F	be neutralized for disposal; you emicals at 1-800-654-6911 before OR ALL TRANSPORTATION 1-800-424-9300 REPORTABLE

#### SECTION 7. HANDLING AND STORAGE

Handling:	Avoid inhalation of dust and fumes. Do not take internally. Avoid contact with skin, eyes and clothing. Upon contact with skin or eyes, wash off with water. Remove contaminated clothing and wash before reuse.
Storage:	Keep product tightly sealed in original containers. Store product in a cool, dry, well-ventilated area. Store away from combustible or flammable products. Keep product packaging clean and free of all contamination, including, e.g. other pool treatment products, acids, organic materials, nitrogen-containing compounds, dry powder fire extinguishers (containing mono-ammonium phosphate), oxidizers, all corrosive liouids, flammable or combustible materials, etc.
Shelf Life Limitations:	al concare include, international of controbation functions and international ends. Do not store product where the average daily temperature exceeds 95° F. Storage above this temperature may result in rapid decomposition, evolution of choirine gas and heat sufficient to ignite combustible products. Shelf life (that is, the period of time before the product goes below stated label strength) is determined by storage time and temperatures. Store in a cool, dry and well ventilated area. Prolonged storage at elevated temperatures will significantly shorten the shelf life. Storage in a climate controlled storage area or building is recommended in those areas where extremes of high temperature occur.

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#### SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	solid
Form	free flowing, granular
Color:	off-white
Odor:	Chlorine-like
Molecular Weight:	(Active ingredient)143.00 g/mol
pH :	10.4 - 10.8 (1% solution in neutral, distilled water) (@ 25 Deg. C)
Boiling Point:	Not applicable
Melting point/freezing	Not applicable
point	The applicable
Density:	0.8g/cc
Vapor Pressure:	(@ 25 Deg. C) Not applicable
Vapor Density:	Not applicable
Viscosity:	Not applicable
Fat Solubility:	no data available
Solubility in Water:	18 % (@ 25 Deg. C) Product also contains calcium hydroxide and calcium carbonate which will leave a residue.
Partition coefficient n- octanol/water:	no data available
Evaporation Rate:	Not applicable
Oxidizina:	Oxidizing
Volatiles, % by vol.:	Not applicable
VOC Content	This product does not contain any chemicals listed under the U.S
	Clean Air Act Section 111 SOCMI Intermediate or Final VOC's (40
	CFR 60.489). This product does not contain any VOC exemptions
	listed under the U.S. Clean Air Act Section 450.
HAP Content	Not applicable

#### SECTION 10. STABILITY AND REACTIVITY

Stability and Reactivity Summary:	Product is not sensitive to mechanical shock or impact. Product is not sensitive to electrical static discharge. Product will not undergo hazardous polymerization. Product is an NFPA Class 3 oxidizer which can cause a severe increase in fire intensity. Not pyrophoric. Not an organic peroxide. If subjected to excessive temperatures, the product may undergo rapid decomposition, evolution of chiorine gas, and heat sufficient to ignite combustible substances. If product is exposed to small amounts of water, it can react violently to produce heat and toxic gases and spatter. Use copious amounts of water for fires involving this product.
Conditions to Avoid:	Do not store next to heat source, in direct sunlight, or elevated storage temperature. Do not store where the daily average temperature exceeds 95 °F. Prevent ingress of humidity and moisture into container or package. Always close the lid.
Chemical Incompatibility:	This product is chemically reactive with many substances, including, e.g., other pool treatment products, acids, organics,
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### SAFETY DATA SHEET

Incompatible Materials for Storage:	Do not allow product to come in contact with other materials, including e.g. other pool treatment products, acids, organic materials, nitrogen-containing compounds, dry powder fire extinguishers (containing mono-ammonium phosphate), oxidizers, all corrosive liquids, flammable or combustible materials, etc. A chemical reaction with such substances can cause a fire of great intensity.
Do Not Store At temperatures Above:	Average daily temperature of 35° C / 95° F. Storage above this temperature may result in rapid decomposition, evolution of chlorine gas and heat sufficient to ignite combustible products.

### SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ventilation: Protective Equipment for Re	Local exhaust ventilation or other engineering controls are normally required when handling or using this product to keep airborne exposures below the TLV, PEL or other recommended exposure limit. outine Use of Product
Respiratory Protection :	Wear a NIOSH approved respirator if levels above the exposure limits are possible.
Respirator Type :	A NIOSH approved full-face air purifying respirator equipped with combination chlorine/P100 cartridges. Air purifying respirators should not be used in oxygen deficient or IDLH atmospheres or if exposure concentrations exceed ten (10) times the published limit.
Skin Protection :	Wear impervious gloves to avoid skin contact. A full impervious suit is recommended if exposure is possible to a large portion of the body. A safety shower should be provided in the immediate work area.
Eye Protection:	Use chemical goggles. Emergency eyewash should be provided in the immediate work area.
Protective Clothing Type:	Neoprene, Nitrile, Natural rubber (This includes: gloves, boots, apron, protective suit)

### Components with workplace control parameters

Components (CAS-No.)	Value	Control parameters	Basis (Update)
CALCIUM HYPOCHLORITE (7778-54-3)	TWA	1 mg/m3	ARCH OEL*
CALCIUM HYPOCHLORITE (7778-54-3)	Conc	37 - 48 mg/m3	NIOSH/GUIDE IDLH
CALCIUM HYDROXIDE (1305-62-0)	TWA	5 mg/m3	ACGIH (02 2014)

ARCH OEL: Arch Recommended Occupational Exposure Guideline.

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nitrogen-containing compounds, dry powder fire extinguishers (containing mono-ammonium phosphate), oxidizers, corrosive ,flammable or combustible materials. Do not allow product to contact any foreign matter, including other water treatment products. Contamination or improper use may cause a fire of great intensity, explosion or the release of toxic gases. If product is exposed to small amounts of water, it can react violently to conduct and toxic negase and snatter. produce heat and toxic gases and spatter. Chlorine 170 - 180 °C - , 338 - 356 °F-

Hazardous Decomposition Products: Decomposition Temperature:

# SECTION 11. TOXICOLOGICAL INFORMATION

Component Animal Toxicology Oral LD50 value: CALCIUM HYPOCHLORITE LD50 (65% calcium hypochlorite) 850 mg/kg Rat 
 DDIUM CHLORIDE
 LD50
 = 3,000 mg/kg
 Rat

 CALCIUM CHLORIDE
 LD50
 = 1,000 mg/kg
 Rat

 CALCIUM HYDROXIDE
 LD50
 = 7,340 mg/kg
 Rat
 Component Animal Toxicology Dermal LD50 value: LD50 (65% calcium hypochlorite) > 2,000 mg/kg Rabbit CALCIUM HYPOCHLORITE SODIUM CHLORIDE LD50 > 10,000 mg/kg Rabbit CALCIUM CHLORIDE LD50 = 2,630 mg/kg Rat CALCIUM HYDROXIDE no data available Component Animal Toxicology Inhalation LC50 value: CALCIUM Inhalation LC50 1 h (65% calcium hypochlorite), (Nose Only) = 2.04 mg/l HYPOCHLORITE Rat Inhalation LC50 4 h (65% calcium hypochlorite), (Nose Only) = 0.51 mg/l Rat

SODIUM CHLORIDE Inhalation LC50 1 h > 42 mg/l Rat

CALCIUM CHLORIDE no data available

CALCIUM HYDROXIDE no data available

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$\frown$	Arch
<b>ÁRCH</b>	Chemicals, Inc.

SAFETY DATA SHEET

Product Animal Toxicity Oral LD50 value: Dermal LD50 value: Inhalation LC50 value:	LD50 approximately 800 mg/kg Rat LD50 >2.000 mg/kg Rabbit Inhalation LC50 1.00 h (Nose Only) > 2.04 mg/l Rat Inhalation LC50 4 h (Nose Only) > 0.51 mg/l Rat Inhalation LC50 1 h (Nose Only) > 2.04 mg/l Rat Inhalation LC50 4 h (Nose Only) > 0.51 mg/l Rat	
Skin Irritation: Eye Irritation:	DRY MATERIAL CAUSES MODERATE SKIN IRRITATION., WET MATERIAL CAUSES SKIN BURNS. Corrosive to eves.	
Skin Sensitization:	This material is not known or reported to be a skin or respiratory sensitizer.	
Acute Toxicity:	This product is corrosive to all tissues contacted and upon inhalation, may cause irritation to mucous membranes and respiratory tract. The dry material is irritating to the skin. However when wet, it will produce burns to the skin.	
Subchronic / Chronic Toxicity:	There are no known or reported effects from repeated exposure except those secondary to burns.	
Reproductive and Developmental Toxicity	Calcium hypochlorite has been tested for teratogenicity in laboratory animals. Results of this study have shown that calcium hypochlorite is not a teratogen.	
CALCIUM CH	LORIDE Not known or reported to cause reproductive or developmental toxicity.	
Mutagenicity:	Calcium hypochlorite has been tested in the Dominant lethal assay in male mice, and it did not induce a dominant lethal response. Calcium hypochlorite has been reported to produce mutagenic activity in two in vitro assays. It has, however, been shown to lack the capability to produce mutations in animals based on results from the micronucleus assay. In vitro assays frequently are inappropriate to judge the mutagenic potential of bactericidal chemicals due to a high degree of cellular toxidty. The concentration which produces mutations in these in vitro assays is significantly greater than the concentrations used for disinfection. Based on high cellular toxidity in in vitro assays and the lack of mutagenicity in animals, the risk of genetic damage to humans is judged not significant.	
CALCIUM CH	LORIDE This product was determined to be non-mutagenic in the Ames assay. It was also shown to be non- clastogenic in the chromosomal aberration test.	
Carcinogenicity:	This product is not known or reported to be carcinogenic by any reference source including IARC, OSHA, NTP or EPA. One hundred mice were exposed dermally 3 times a week for 18 months to a solution of calcium hypochlorite. Histopathological examination failed to show an increased incidence of tumors. IARC (International Agency for Research on Cancer) reviewed studies conducted with several hypochlorite salts. IARC has classified hypochlorite salts as having inadequate evidence for carcinogenicity to humans and animasi. IARC therefore considers hypochlorite salts to be not classifiable as to their carcinogenicity to humans (Group 3 Substance).	
CALCIUM CH	LORIDE This chemical is not known or reported to be carcinogenic by any reference source including IARC,	
DryTec Calcium Hypochlo REVISION DATE: 02/0		



	OSHA, NTP, o	or EPA.
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### SECTION 12. ECOLOGICAL INFORMATION

Overview:	Highly toxic to fish and other aquatic organisms.
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Ecological Toxicity Values for: CALCIL	м	HYPOCHLORITE
Bluegill Rainbow trout (Salmo gairdneri), Daphnia magna, Bobwhite quail Mallard ducklings Bobwhite quail	-	
Ecological Toxicity Values for: CALCIL	М	CHLORIDE
Bluegill Mosquito fish Pimephales promelas (fathead minnow)	-	(nominal, static). 96 h LC50 = 4,630 mg/l
Daphnia magna, Ceriodaphnia dubia Nitzschia linearis (diatom)	-	(nominal, static). 48 h LC50= 2,770 mg/l (nominal, static). 48 h LC50= 1,830 mg/l (nominal, static). 5 day LC50 = 3,130 mg/l

#### SECTION 13. DISPOSAL CONSIDERATIONS

CARE MUST BE TAKEN TO PREVENT ENVIRONMENTAL CONTAMINATION FROM THE USE OF THE MATERIAL. THE USER OF THE MATERIAL HAS THE RESPONSIBILITY TO DISPOSE OF UNUSED MATERIAL, RESIDUES AND CONTAINERS IN COMPLIANCE WITH ALL RELEVANT LOCAL, STATE AND FEDERAL LAWS AND REGULATIONS REGARDING TREATMENT, STORAGE AND DISPOSAL FOR HAZARDOUS AND NONHAZARDOUS WASTES. Waste Disposal Summary :

If this product becomes a waste, it meets the criteria of a hazardous waste as defined under 40 CFR 261 and would have the following EPA hazardous waste number: D001.If this product becomes a waste, it will be a hazardous waste which is subject to the Land Disposal restrictions under 40 CFR 268 and must be managed accordingly. As a hazardous solid waste it should be disposed of in accordance with local, state and federal regulations. Disposal Methods :

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Potential US EPA Waste Codes D001

### SECTION 14. TRANSPORT INFORMATION

Class Packing group	: 2880 : Calcium hypochlorite, hydrated mixtures : 5.1 : II : 5.1 : 140
TDG UN number Description of the goods Class Packing group Labels	: 2880 : CALCIUM HYPOCHLORITE, HYDRATED MIXTURE : 5.1 : II : 5.1
IATA UN number Description of the goods Class Packing group Labels Packing instruction (cargo aircraft) Packing instruction (passenger aircraft) Packing instruction (passenger aircraft)	: 5.1 : II : 5.1
IMDG-CODE UN number Description of the goods Class Packing group Labels EmS Number 1 EmS Number 2	: 2880 : CALCIUM HYPOCHLORITE, HYDRATED MIXTURE : 5.1 : II : 5.1 : F-H : S-Q
Marine pollutant	: yes

#### SECTION 15. REGULATORY INFORMATION

DryTec Calcium Hyp	ochlorite Granular	
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RCH

This chemical is a pesticide product registered by the United States Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS), and for workplace labels of non-pesticide chemicals.

Signal word Hazard statements

DANGER! Causes substantial but temporary eye injury. Corrosive. Causes skin burns. Corrosive. Causes irreversible eye damage. This pesticide is toxic to fish.

SAFETY DATA SHEET

EPCRA - Emergency Planning and Community Right-to-Know Act CERCLA Reportable Quantity

Arch Chemicals,

Components	CAS-No.	Component RQ (Ibs)	Calculated product RQ (lbs)
Calcium hypochlorite	7778-54-3	10	13

SARA 304 Extremely Hazardous Substances Reportable Quantity This material does not contain any components with a section 304 EHS RQ.

### **SARA 302**

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302

SARA 313 This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

#### Clean Air Act

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC's (40 CFR 60.489).

#### Clean Water Act

The following Hazardous Substances are listed under the U.S. CleanWater Act, Section 311, Table 116.4A:

Calcium hypochlorite 7778-54-3

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Version 1

The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:

Calcium hypochlorite 7778-54-3

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

#### US State Regulations

Massachusetts Right To Know		
	Calcium hypochlorite	7778-54-3
	Calcium carbonate	471-34-1
	Calcium chlorate	10137-74-3
	Calcium dihydroxide	1305-62-0
Pennsylvania Right To Know		
	Calcium hypochlorite	7778-54-3
	Sodium chloride	7647-14-5
	Calcium carbonate	471-34-1
	Calcium chlorate	10137-74-3
	Calcium chloride	10043-52-4
	Calcium dihydroxide	1305-62-0
New Jersey Right To Know		
	Calcium hypochlorite	7778-54-3
	Sodium chloride	7647-14-5
	Calcium carbonate	471-34-1
	Calcium chlorate	10137-74-3
	Calcium chloride	10043-52-4
	Calcium dihydroxide	1305-62-0
California Prop 65		
California Prop 05		
		in any chemicals known to State of er, birth defects, or any other
	,	

The components of this product are reported in the following inventories: TSCA : This is an EPA registered pesticide.

Inventories

AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIOC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TSCA (USA)

#### SECTION 16. OTHER INFORMATION

SECTIONS REVISED:

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#### SAFETY DATA SHEET

Revision Date 02-Feb-2023

Major References

Available upon request

THIS MATERIAL SAFETY DATA SHEET (MSDS) HAS BEEN PREPARED IN COMPLIANCE WITH THE FEDERAL OSHA HAZARO COMMUNETICINI STANDARD, 25 CPR 1010-1200. THE INFORMATION IN THIS MSDS SHOULD DE PROVIDED TO HIGTORITON IN THIS SEAN PREVANT SAFETY AND A STANDARD AND A STANDARD AND A SHOULD DE PROVIDED TO INFORMATION HAS EEN PREPARED FOR THE GUIDANCE OF FLATURE TEXNERS OF BATTONS AND MANAGEMENT AND FOR FERSONS WORKING WITH OR HANDLING THIS PRODUCT. ARCH CHEMICALS BELIEVES THIS INFORMATION TO BE FRELABLE AND UP TO DATE AS OF THE DATE OF PUBLICATION BUT, MARES NO WARRANTY THAT IT IS ADDITIONALLY, IF THIS MSDS IS MORE THAN THREE YEARS OLD, YOU SHOULD CONTACT ARCH CHEMICALS MODE CONTROL ATT HE PHONE NUMBER ON THE FRONT FAGE TO MAKE CENTANT HAS THIS DOCUMENT IS CURRENT.

## DryTec Calcium Hypochlorite Granular REVISION DATE: 02/08/2016

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### Be Right<sup>™</sup> Issue Date 13-Jan-2023 Revision Date 02-Feb-2023 1. Identification Product identifier DPD Free Chlorine Reagent Product Name Other means of identification Product Code(s) 2105528 Detailed information about the manufacturer, supplier, and/or importer Manufacturer Address Hach Company, P.O.Box 389, Loveland, CO 80539, USA, +1(970) 669-3050 Recommended use of the chemical and restrictions on use Recommended Use Water Analysis, Determination of chlorine Restrictions on use Consumer use Emergency telephone number +1(303) 623-5716 - 24 Hour Service 2. Hazard(s) identification Classification of the substance or mixture

Skin corrosion/irritation		Category 2
Serious eye damage/eye irritation		Category 2A
Specific target organ toxicity (repeated exposure)		Category 2
Label elements		
Signal word	Warning	

Hazard statements H315 - Causes skin irritation H319 - Causes serious eye irritation H373 - May cause damage to organs through prolonged or repeated exposure

#### Precautionary statements

Procautionary statements P280 - Wear protective gloves/protective clothing/eye protection/face protection P302 + P322 - IF ON SKIN: Wash with plenty of water and scap P322 + P331 - If Skin irritation cours: Get medical advice/attention P362 + P364 - P364 - F182 - BF1 NEP25. Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to P305 + P304 + P303 - IF INEP25. Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to

P337 + P313 - If eye irritation persists: Get medical advice/attention



Other hazards which do not result in classification

No information available.

### 3. Composition/information on ingredients

Substance Not applicable

Mixture

Product Code(s) Chemical nature

2105528
No information available.

Chemical name	CAS No	Weight-%
Carboxylate Salt	-	60 - 70%
Phosphoric acid, disodium salt	7558-79-4	30 - 40%
Salt of N,N-Diethyl-p-Phenylenediamine	-	1 - 5%
Disodium EDTA	139-33-3	1 - 5%

Description of necessary first aid measures

General advice Show this safety data sheet to the doctor in attendance. Inhalation

- Remove to fresh air. Get medical attention immediately if symptoms occur.
- Wash off immediately with soap and plenty of water for at least 15 minutes. Get medical attention if irritation develops and persists. Skin contact Eye contact
  - Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area. Get medical attention if irritation develops and persists.

Rinse mouth. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Call a physician. Ingestion

For emergency responders

Self-protection of the first aider Avoid contact with skin, eyes or clothing. Wear personal protective clothing (see section 8). Most important symptoms/effects, acute and delayed

May cause redness and tearing of the eyes. Burning sensation. Symptoms

Indication of immediate medical attention and special treatment needed, if necessary

2105528 - DPD Free Chlorine F	Reagent Revision Date 02-Feb-202
Note to physicians	Treat symptomatically.
5. Fire-fighting measures	
Suitable Extinguishing Media	Product itself does not burn.
Large Fire	CAUTION: Use of water spray when fighting fire may be inefficient.
Unsuitable extinguishing media	Do not scatter spilled material with high pressure water streams.
Specific hazards arising from the chemical	No information available.
Hazardous combustion products	Carbon monoxide, Carbon dioxide. Phosphorus oxides. Nitrogen oxides.
Special protective actions for fire-fighters	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gea
6. Accidental release meas	sures
Personal precautions, protective e	guipment and emergency procedures
Personal precautions	Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Avoid contact with skin, eyes or clothing.
Methods and material for containm	ent and cleaning up
Methods for cleaning up	Take up mechanically, placing in appropriate containers for disposal.
Methods for containment	Prevent further leakage or spillage if safe to do so.
Other information	Refer to protective measures listed in Sections 7 and 8.
Environmental precautions	
Environmental precautions	Prevent further leakage or spillage if safe to do so.
7. Handling and storage	
Precautions for safe handling	
Advice on safe handling	Handle in accordance with good industrial hygiene and safety practice. Ensure adequate ventilation. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when usin this product. Take off contaminated clothing and wash before reuse.
General hygiene considerations	Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Avoid contact with skin, eyes or clothing.
Conditions for safe storage, includ	ing any incompatibilities
Storage Conditions	Keep containers tightly closed in a dry, cool and well-ventilated place.
Incompatible materials	Strong acids. Strong bases. Strong oxidizing agents.
8. Exposure controls/pers	onal protection
Control parameters	
Occupational exposure limits	This product, as supplied, does not contain any hazardous materials with occupational

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2105528 - DPD Free Chlorin	ne Reage	nt			Revision Date	02-Feb-2023
Specific Gravity		1.76				
Partition coefficient		log Kow ~ 0				
Soil Organic Carbon-Water Par Coefficient	tition	log Koc ~ 0				
Autoignition temperature		No data availabl	e			
Decomposition temperature		110 °C / 230 °F				
Dynamic viscosity		Not applicable				
Kinematic viscosity		Not applicable				
Solubility(ies)						
Water solubility						
Water solubility classificat	ion	Water s	olubility	Wat	er Solubility Tem	perature
Completely soluble		> 1000	) mg/L		25 °C / 77 °	
Solubility in other solvents						
Acid		Soluble	> 1000 mg/	L	25 °C /	77 °F
<u>Other information</u> Metal Corrosivity						
Steel Corrosion Rate Aluminum Corrosion Rate			No data available No data available			
Volatile Organic Compounds (V Not applicable	VOC) Con	tent				

Chemical name	CAS No	Volatile organic compounds (VOC) content	CAA (Clean Air Act)
Carboxylate Salt	-	No data available	-
Phosphoric acid, disodium salt	7558-79-4	No data available	-
Salt of	-	Not applicable	-
N,N-Diethyl-p-Phenylenediamine			
Disodium EDTA	139-33-3	No data available	-

### Explosive properties

Upper explosion limit Lower explosion limit		No data available No data available
Flammable properties		
Flash point		Not applicable
Flammability Limit in Air Upper flammability limit: Lower flammability limit:		No data available No data available
Oxidizing properties		No data available.
Other information VOC content Bulk density	No information available No information available	

2105528 - DPD Free Chlorine Reagent	
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2105528 - DPD Free Chlorine I	Reagent		Revision Date 02-Feb-202		
	exposure limits established by	tory bodies			
Biological occupational exposure limits	s not contain any hazardo cific regulatory bodies	ous materials with biological limits			
Appropriate engineering controls	_				
Engineering controls	Technical measures and appr use of personal protective equ		s should be given priority over the		
Individual protection measures, su	ich as personal protective equ	ipment_			
Eye/face protection	If splashes are likely to occur,	wear safety glasses with	side-shields.		
Skin and body protection	Avoid contact with eyes, skin and clothing. Wash contaminated clothing before reuse. W suitable protective clothing. Long sleeved clothing.				
Hand protection	specifications of EU Directive resistant gloves made of butyl	2016/425 and the standar rubber or nitrile rubber ca	otective gloves have to satisfy the d EN 374 derived from it. Chemic tegory III according to EN osed areas of skin. Wear suitable		
	Gloves				
Duration of contact	PPE - Glove material	Glove thickness	Break through time		
Short term	Wear protective nitrile rubber gloves	0,20 mm	>30 minutes		
Long term (repeated)	Wear protective Viton™ gloves	0,70 mm	>480 minutes		
Respiratory protection	No protective equipment is ne exceeded or irritation is experi		onditions. If exposure limits are acuation may be required.		
General hygiene considerations	Wear suitable gloves and eye product. Avoid contact with sk		at, drink or smoke when using this		
9. Physical and chemical	properties				
Information on basic physical and	chemical properties				
Appearance	powder				
Physical state Color	Solid White to light pink White to bro	Odor Odor threshold	Odorless No data available		

Physical state Color	Solid White to light pink White to brown	Odor Odor threshold	Odorless No data available
Property	Values		Remarks • Method
Molecular weight	No data available		
рН	6.35		1% @ 20°C
Melting point / freezing point	110 °C / 230 °F		
Initial boiling point and boiling ran	ge No data available		
Evaporation rate	Not applicable		
Vapor pressure	Not applicable		
Relative vapor density	No data available		
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10. Stability and	reactivity	1							
Reactivity		No informat	No information available.						
Stability		Stable unde	Stable under normal conditions.						
Possibility of hazardo	us reactions	None under	None under normal processing.						
Hazardous polymeriz	ation	None under	None under normal processing.						
Conditions to avoid		None know	n based on info	rmation supplied.					
Incompatible material	s	Strong acid	s. Strong bases	. Strong oxidizing agents.					
Hazardous Decompos	ition Produc	ts Carbon dio	xide. Carbon mo	onoxide. Phosphorus oxides. N	litrogen oxides.				
11. Toxicologica	al informa	tion							
Information on likely	routes of exp	osure							
Product Information									
Inhalation		May cause irritation of respiratory tract.							
Eye contact		Causes serious eye irritation. May cause redness, itching, and pain.							
Skin contact		Causes ski	n irritation.						
Ingestion		Ingestion m	ay cause gastro	pintestinal irritation, nausea, vo	omiting and diarrhea.				
Symptoms related to	the physical,	chemical and	d toxicological	characteristics_					
Symptoms		Redness. N	lay cause redne	ess and tearing of the eyes.					
Acute toxicity									
Numerical measures	of toxicity								
Substance Test data reported belo Oral Exposure Route	w.								
Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data				
Salt of N,N-Diethyl-p-Phenyl enediamine (1 - 5%) CAS#: -	Rat LD50	695 mg/kg							
Disodium EDTA (1 - 5%) CAS#: 139-33-3	Rat LD50	2000 mg/kg	None reported	None reported	RTECS				

Inhalation (Dust/Mist) Exposure Route

 ATEmix (oral)
 21,786.80
 mg/kg

 ATEmix (inhalation-dust/mist)
 136.40
 mg/k

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#### Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation Classification based on data available for ingredients. Causes skin irritation. Mixture No data available. Substance

Su	IDS	tand	ce	
т.	ot c	lata	ron	ortor

Chemical name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Phosphoric acid, disodium salt (30 - 40%) CAS#: 7558-79-4	Standard Draize Test	Rabbit	500 mg	24 hours	Skin irritant	RTECS
Disodium EDTA (1 - 5%) CAS#: 139-33-3	Standard Draize Test	Rabbit	500 mg	20 hours	Not corrosive or irritating to skin	ECHA

# <u>Serious eye damage/eye irritation</u> Classification based on data available for ingredients. Causes serious eye irritation.

Mixture No data available.

### Substance

Test data reported bei	OW.					
Chemical name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Phosphoric acid, disodium salt (30 - 40%) CAS#: 7558-79-4	Standard Draize Test	Rabbit	500 mg	24 hours	Eye irritant	RTECS
Disodium EDTA (1 - 5%) CAS#: 139-33-3	Standard Draize Test	Rabbit	50 mg	None reported	Mild eye irritant	ECHA

Respiratory or skin sensitization Based on available data, the classification criteria are not met.

Mixture No data available. Substance No data available.

No data available. <u>Germ cell mutagenicity</u> Based on available data, the classification criteria are not met. Mixture *invitro* Data No data available. Substance *invitro* Data Test data reported below.

Chemical name	Test	Cell Strain	Reported dose	Exposure time	Results	Key literature references and sources for data
Disodium EDTA (1 - 5%) CAS#: 139-33-3	Cytogenetic analysis	Hamster lung	200 mg/L	None reported	Positive test result for mutagenicity	RTECS

Mixture *invivo* Data No data available. Substance *invivo* Data

No data available

Carcinogenicity Based on available data, the classification criteria are not met. Mixture No data available.

Crustacea

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#### 2105528 - DPD Free Chlorine Reagent

#### Revision Date 02-Feb-2023

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Substance No data available					
Chemical name	CAS No	ACGIH	IARC	NTP	OSHA
Carboxylate Salt	-	-	-	-	-
Phosphoric acid, disodium salt	7558-79-4	-	-	-	-
Salt of N,N-Diethyl-p-Phenylenedi amine	-	-	-	-	-
Disodium EDTA	139-33-3	-	-	-	-

Legend

ACGIH (American Conference of Governmental Industrial Hygienists)	Does not apply
IARC (International Agency for Research on Cancer)	Does not apply
NTP (National Toxicology Program)	Does not apply
OSHA	Does not apply

Reproductive toxicity Based on available data, the classification criteria are not met. Mixture No data available. Substance No data available. No data available. <u>STOT - single exposure</u> Rased on available data, the classification criteria are not met. Mixture No data available. Substance Substance No data available. <u>STOT - repeated exposure</u> May cause damage to organs through prolonged or repeated exposure. May cause damag Mixture No data available. Substance Substance No data available. Aspiration hazard Based on available data, the classification criteria are not met.

### 12. Ecological information

The environmental impact of this product has not been fully investigated Ecotoxicity

Unknown aquatic toxicity

Mixture

Aquatic Acute Toxicity No data available. Aquatic Chronic Toxicity No data available. Substance

Aquatic Acute Toxicity Test data reported below Fish

Che	mical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
	odium EDTA (1 - 5%) \$#: 139-33-3	96 hours	Lepomis macrochirus	LC50	159 mg/L	Vendor SDS

0 % of the mixture consists of component(s) of unknown hazards to the aquatic environment

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#### 2105528 - DPD Free Chlorine Reagent

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Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Salt of N,N-Diethyl-p-Phen ylenediamine (1 - 5%) CAS#: -	48 Hours	Daphina magna	EC <sub>50</sub>	10.8 mg/L	Internal Data
Algae					
Chemical name	Exposure	Species	Endpoint	Reported dose	
	time		type		sources for data
Disodium EDTA (1 - 5%) CAS#: 139-33-3	72 Hours	None reported	EC <sub>50</sub>	300 mg/L	ECHA
Aquatic Chronic To: No data available. Persistence and deg Mixture No data available.					
Bioaccumulation					
Mixture No data available. Partition coefficient			log Kow ~ 0		
Mobility					

Soil Organic Carbon-Water Partition Coefficient	$log \; K_{\rm oc} \sim 0$
Other adverse effects No information available.	

13. Disposal considerations Disposal methods Waste from residues/unused Dispose of waste in accordance with environmental legislation. products

#### Contaminated packaging Do not reuse empty containers.

14. Transport information	1
Note:	No special precautions necessary.
IMDG	Not regulated
IATA	Not regulated
ADR	Not regulated
DOT	Not regulated
Additional information	

### 2105528 - DPD Free Chlorine Reagent

15. Regulatory information

Regulatory information

National regulations

Chemical Control Order and Priority Chemical List Not applicable

#### International Regulations

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

Complies

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

International Inventories

Complies. Complies. Complies. Complies. Complies. Complies. Complies. Complies. Contact supplier for inventory compliance status.

PICCS - Philippines Inventory of Chemicals and Chemical Substances TSCA - United States Toxic Substances Control Act Section 8(b) Inventory DSL/NDSL - Canadian Domestic Substances ListNon-Domestic Substances List EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances ENCS - Japan Existing and New Chemical Substances ECSC - Chain Inventory of Existing Chemical Substances KECL - Korean Existing and Evaluated Chemical Substances KACS - Australian Inventory of Chemical Substances KACS - Australian Inventory of Chemical Substances NZIoC - New Zealand Inventory of Chemicals

16. Other information	
Issue Date	13-Jan-2023
Revision Date	02-Feb-2023
Prepared By	Hach Product Compliance Department
Key or legend to abbreviations a	nd acronyms used in the safety data sheet_
ACGIH	ACGIH (American Conference of Governmental Industrial Hygienists)
IMDG	International Maritime Dangerous Goods (IMDG)
IATA	International Air Transport Association (IATA)
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATSDR	Agency for Toxic Substances and Disease Registry (ATSDR)
CHEMVIEW not translate code	U.S. Environmental Protection Agency ChemView Database
EFSA not translate code	European Food Safety Authority (EFSA)
EPA not translate code	EPA (Environmental Protection Agency)
EPA_AEGL not translate code	Acute Exposure Guideline Level(s) (AEGL(s))
EPA_FIFRA not translate code	U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
EPA_HPV not translate code	U.S. Environmental Protection Agency High Production Volume Chemicals

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### 2105528 - DPD Free Chlorine Reagent

Revision Date 02-Feb-2023

2105528 - DPD Free Chlorine	Reagent Revision Date 02-Feb-2023
FOOD JOURN not translate code	Food Research Journal
HSDB not translate code	Hazardous Substance Database
IUCLID not translate code	International Uniform Chemical Information Database (IUCLID)
JAPAN GHS not translate code	National Institute of Technology and Evaluation (NITE)
NICNAS not translate code	Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
NIOSH not translate code	NIOSH (National Institute for Occupational Safety and Health)
NLM CIP not translate code	National Library of Medicine's ChemID Plus (NLM CIP)
NLM PUBMED not translate code	National Library of Medicine's PubMed database (NLM PUBMED)
NTP not translate code	National Toxicology Program (NTP)
NZ CCID not translate code	New Zealand's Chemical Classification and Information Database (CCID)
DECD_EHSP not translate code	Organization for Economic Co-operation and Development Environment, Health, and Safety Publications
DECD_HPV not translate code	Organization for Economic Co-operation and Development High Production Volume Chemicals Program
OECD SIDS not translate code	Organization for Economic Co-operation and Development Screening Information Data Set
WHO not translate code	World Health Organization
ACGIH	ACGIH (American Conference of Governmental Industrial Hygienists)
ATSDR	ATSDR (Agency for Toxic Substances and Disease Registry)
CCRIS	CCRIS (Chemical Carcinogenesis Research Information System)
CDC	CDC (Center for Disease Control)
CEPA	CEPA (Canadian Environmental Protection Agency)
CICAD	CICAD (Concise International Chemical Assessment Documents)
ECHA	ECHA (The European Chemicals Agency)
EA	EEA (European Environment Agency)
EPA	EPA (Environmental Protection Agency)
RMA	ERMA (New Zealands Environmental Risk Management Authority)
COSARS	Estimation through ECOSARS v1.11 part of the Estimation Programs Interface (EPI) Suite™
FDA	FDA (Food & Drug Administration)
GESTIS	GESTIS (Information System on Hazardous Substances of the German Social Accident
	Insurance)
HSDB	HSDB (Hazardous Substances Data Bank)
NERIS	INERIS (The National Industrial Environment and Risks Institute)
PCS INCHEM	IPCS INCHEM (International Programme on Chemical Safety)
UCLID	IUCLID (The International Uniform Chemical Information Database)
NITE	Japan National Institute of Technology and Evaluation (NITE)
NIH	NIH (National Institutes of Health)
NIOSH	NIOSH (National Institute for Occupational Safety and Health)
LOLI	LOLI (List of Lists - An International Chemical Regulatory Database)
NDE	no data
NICNAS	Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
NIOSH IDLH	Immediately Dangerous to Life or Health
OSHA	OSHA (Occupational Safety and Health Administration of the US Department of Labor)
PEEN	PEEN (Pan European Ecological Network)
RTECS	RTECS (Registry of Toxic Effects of Chemical Substances)
SIDS	SIDS (Screening Information Dataset) for High Volume Chemicals
SYKE	The Finnish Environment Institute (SYKE)
JSDA	USDA (United States Department of Agriculture)
USDC	USDC (United States Department of Commerce)
WHO	WHO (World Health Organization)
Legend - Section 8: EXPOSURE (	CONTROLS/PERSONAL PROTECTION
TWA TWA (time-weigl	hted average) STEL STEL (Short Term Exposure Limit)

Ceiling

Vacated

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SAFETY DATA SHEET

Ceiling Limit Value

These values have no official status. The only binding levels of contaminants are those listed in the final OSHA PEL. These lists are for reference purposes only. Please note that some reference state regulations of these "liberated" exposure limits in their state regulations.

2105528 - DPD Free Chlorine Reagent

SKN*	Skin designation	SKN+	Skin sensitization
RSP+	Respiratory sensitization	**	Hazard Designation
C M	Carcinogen mutagen	R	Reproductive toxicant
Prepared By Issue Date Revision Date	Hach Product C 13-Jan-2023 02-Feb-2023	compliance Department	

Disclaimer

USER RESPONSIBILITY: Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations.

Revision Date 02-Feb-2023

THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED TO BE ACCURATE. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.

HACH COMPANY@2022

End of Safety Data Sheet

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Product Code(s) 1406499 Issue Date 16-Sep-2019 Version 4.9



Product Name DPD Total Chlorine Reagent Revision Date 01-Jun-2022 Page 2 / 14

Be Right<sup>™</sup>

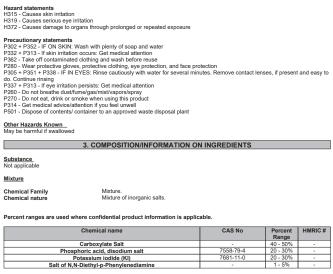
Maximum Allowable Concentration

Listed

MAC

х

Issue Date 16-Sep-2019 Re	evision Date 01-Jun-2022	Versio	<b>1</b> 4.9	Page	1 / 14
	1. IDENTIFICATI	ON			
Product identifier Product Name	DPD Total Chlorine Reagent				
Other means of identification Product Code(s)	1406499				
Safety data sheet number	M00110				
HMRIC #	HMIRA Registry Number 9936 File	d 2016-04-11			
Uses advised against Restrictions on use Details of the supplier of the safet Manufacturer Address Hach Company, P.O.Box 389, Love <u>Emergency telephone number</u> +1(33) 625-716 - 24 Hour Service	land, CO 80539, USA, +1(970) 669-30	50			
	2. HAZARDS IDENTIF	ICATION			
Classification					
Regulatory Status This chemical is considered hazardo	ous by the 2012 OSHA Hazard Commi	unication Standar	i (29 CFR 1910.120 Category 2	00)	
Serious eye damage/eye irritation			Category 2A		
Specific target organ toxicity (repeat	ed exposure)		Category 1		
Hazards not otherwise classified Not applicable	(HNOC)				
Label elements Signal word Danger					



Description of first aid measures

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Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses: if present and easy to do. Continue rinsing, Reep eye wide open while rinsing. Do not rub affected area. Get medical attention if irritation develops and
Inhalation	Get medical attention immediately if symptoms occur. Remove to fresh air.
General advice	Show this safety data sheet to the doctor in attendance.

4. FIRST AID MEASURES

Issue Date 16-Sep-2019 Version 4.9	Product Name DPD Total Chlorine Reagent Revision Date 01-Jun-2022 Page 3 / 14
	persists.
Skin contact	Wash off immediately with soap and plenty of water for at least 15 minutes. Get medical attention if irritation develops and persists.
Ingestion	Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Call a physician.
Self-protection of the first aider	Avoid contact with skin, eyes or clothing.
Most important symptoms and effect	ts, both acute and delayed
Symptoms	Burning sensation.
Indication of any immediate medica	attention and special treatment needed
Note to physicians	Treat symptomatically.
	5. FIRE-FIGHTING MEASURES
Suitable Extinguishing Media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable Extinguishing Media	Caution: Use of water spray when fighting fire may be inefficient.
Specific hazards arising from the chemical	No information available.
Hazardous combustion products	Carbon monoxide, Carbon dioxide. Iodine compounds. Phosphorus oxides. Potassium oxides. Sodium monoxide. Nitrogen oxides.
Special protective equipment for fire-fighters	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.
	6. ACCIDENTAL RELEASE MEASURES
U.S. Notice	Only persons properly qualified to respond to an emergency involving hazardous substances may respond to a spill according to federal regulations (OSHA 29 CFR 1910.120(a)(v)) and per your company's emergency response plan and guidelines/procedures. See Section 13. Special Instructions for disposal assistance. Outside of the US, only persons properly qualified according to state or local regulations should respond to a spill involving chemicals.
Personal precautions, protective eq	uipment and emergency procedures
Personal precautions	Evacuate personnel to safe areas. Ensure adequate ventilation. Avoid contact with skin, eyes or clothing. Use personal protective equipment as required.
	Refer to protective measures listed in Sections 7 and 8.
Other Information	
Other Information	
Environmental precautions	Prevent further leakage or spillage if safe to do so.
	Prevent further leakage or spillage if safe to do so.

Product Code(s) 1406499 Issue Date 16-Sep-2019 Version 4.9	Rev		DPD Total Chlorir 01-Jun-2022	ne Reagent			
Methods for cleaning up	Take up mechanically, placing	in appropria	ate containers for d	isposal.			
Prevention of secondary hazards	Clean contaminated objects an	d areas tho	oroughly observing	environmental regulations.			
Reference to other sections	See section 8 for more information. See section 13 for more information.						
	7. HANDLING AND	STORA	GE				
Precautions for safe handling							
Advice on safe handling	Ensure adequate ventilation. Take off contaminated clothing and wash before reuse. Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product.						
Conditions for safe storage, includi	ng any incompatibilities						
Storage Conditions	Keep containers tightly closed	in a dry, coo	ol and well-ventilate	ed place.			
Flammability class	Not applicable						
8. EXI	POSURE CONTROLS/PE	RSONAL	. PROTECTION				
Control parameters	POSURE CONTROLS/PE	RSONAL	PROTECTION				
Control parameters				-			
Control parameters	ACGIH TLV TWA: 0.01 ppm inhalable fraction and vapor		SHA PEL	NIOSH NDF			
Control parameters Exposure Guidelines Chemical name Potassium iodide (KI) CAS#: 7681-11-0 Appropriate engineering controls Engineering Controls	ACGIH TLV TWA: 0.01 ppm inhalable fraction and vapor Showers Eyewash stations Ventilation systems.	0:	SHA PEL	NIOSH			
Control parameters	ACGIH TLV TWA: 0.01 ppm inhalable fraction and vapor Showers Eyewash stations Ventilation systems.	O: pment_ ded under	SHA PEL NDF	NIOSH NDF			
Control parameters Exposure Guidelines Chemical name Potassium iodide (KI) CAS#: 7681-11-0 Appropriate engineering controls Engineering Controls	ACGIH TLV TWA: 0.01 ppm inhalable fraction and vapor Showers Eyewash stations Ventilation systems. h as personal protective equi No protective equipment is nee quipment is ne	pment_ kded under enced, venti ble gloves. e to satisfy t om it. Chem	SHA PEL NDF normal use condition liation and evacuati Gloves must be in the specifications o	NIOSH NDF			
Control parameters Exposure Guidelines Chemical name Potassum iodide (KI) CAS#: 7681-11-0 Appropriate engineering controls Engineering Controls Individual protection measures, suc Respiratory protection Hand Protection	ACGIH TLV TVA- 0.01 ppm inhalable fraction and vapor Showers Eyewash stations Ventilation systems. <b>h as personal protective equi</b> No protective equipment is nee exceeded or irritation is experi- impervious gloves. Wear suital selected protective gloves hav the standard EN 374 derived fi	pment	SHA PEL NDF NDF Gloves must be in the specifications of incal resistant glove 374-1:2016.	NIOSH NDF ns. If exposure limits are on may be required. spected prior to use. The FEU Directive 2016/425 and is made of butyl rubber or			
Control parameters Exposure Guidelines Chemical name Potassium iodide (KI) CASH: 7681-11-0 Appropriate engineering controls Engineering Controls Individual protection measures, suc Respiratory protection Hand Protection Eye/face protection	ACGIH TLV TVA- 0.01 ppm. inhalable fraction and vapor Eyewash stations Ventilation systems. In as personal protective equi No protective equipment is nee exceeded or irritation is experi- imperious gloves. Wear sultai selected protective gloves have the standard EN 374 derived fi nitrile rubber category III accor	pment_ ded under enced, venti enced, venti ble gloves. t to satisfy om it. Chen ding to EN 3 wear safety	SHA PEL NDF Idition and evacuati Gloves must be in the specifications o Gloves rust be in the specifications o rical resistant glove 374-1:2016. glasses with side-s	NIOSH NDF ns. If exposure limits are on may be required. spected prior to use. The FEU Directive 2016/425 and is made of butyl rubber or			
Control parameters Exposure Guidelines Chemical name Potassium iodide (KI) CAS#: 7681-11-0 Appropriate engineering controls Engineering Controls Individual protection measures, suc Respiratory protection	ACGIH TLV TVA-0.01 ppm. inhalable fraction and vapor Showers Eyewash stations Ventilation systems. As personal protective equipment is nee exceeded or initiation is experi- Impenvious gloves. Wear sutila selected protective gloves hav the standard EN 374 derived fin entitile rubber category III accor If splashes are likely to occur, if	orment ided under inced, venti ble gloves. to satisfy to om it. Chen ding to EN 3 wear safety uitable prote r clothing. V	SHA PEL NDF normal use conditionand evacuationand evacuationand evacuationand evacuations of mical resistant glove 374-1:2016. glasses with side-sective clothing. Wear suitable glove	NIOSH NDF ons. If exposure limits are on may be required. spected prior to use. The f EU Directive 2016/425 and s made of butyl nubber or shields.			
Control parameters Exposure Guidelines Chemical name Potassium iodide (KI) CASB: 7681-11-0 Appropriate engineering controls Engineering Controls Individual protection measures, suc Respiratory protection Hand Protection Eye/face protection Skin and body protection	ACGIH TLV TWA-0.01 ppm inhalable fraction and vapor Showers Eyewash stations Ventilation systems. As portective equipment is ne exceeded or irritation is experid Impervious gloves. Wear suital selected protective gloves hav the standard EN 374 derived fr nitrile rubber category III accor i fsplashes are likely to occur, v Long sleeved clothing. Wear si Avoid contact with skin, eyes o	pment_ ded under r neced, venti ble gloves. t to satisfy to m it. Chen ding to EN 3 wear safety jitable prote r clothing. V sing this pro- rised if signi	SHA PEL NDF NDF Inormal use condition Itation and evacuation Itation	NIOSH NDF ons. If exposure limits are on may be required. spected prior to use. The F EU Directive 2016/425 and s made of bulyi rubber or shields. s and eye/face protection. Do			

Issue Date 16- Version 4.9	2010			Revision Date 0 Page 5/14					
		9. PH	YSICAL AND CH	EMICAL PRO	PERTIES				
nformation on	basic physical	and chemi	cal properties						
Physical state Appearance	powder	Solid	i	Color	White to ligh White to bro				
Odor	Odorless			Odor threshold	Not applicab				
Property			Values			Remarks • Method			
Molecular weig	ht		Not applicable						
рН			6.35			1% @ 20°C			
Melting point/fr	eezing point		145 °C / 293	°F					
Boiling point / I	boiling range		No data availab	le					
Evaporation rat	te		Not applicable						
Vapor pressure	•		Not applicable						
Relative vapor	density		No data availat	ble					
Specific gravity	/ (water = 1 / air	= 1)	1.79	1.79					
Partition Coeffi	cient (n-octano	/water)	log Kow ~ 0	log K <sub>ow</sub> ~ 0					
Coefficient			log K∞ ~ 0	•					
Autoignition te				No data available No data available					
Decomposition Dynamic viscos			Not applicable	le					
Kinematic visco			Not applicable						
Solubility(ies)	USILY		Not applicable						
Water solubility									
Water so	lubility classifica Soluble	ion	<u>Water s</u> > 1000		Wa	ter Solubility Temperature 25 °C / 77 °F			
Solubility in oth	ner solvents								
-	al Name	Soluh	ility classification	Solub	ility	Solubility Temperature			
None r			ormation available	No data a		No information available			
Other informati	ion								
Metal Corrosivi	ity								
Steel Corro Aluminum (	sion Rate Corrosion Rate			0.97 mm/yr / 0.0 0.15 mm/yr / 0.0					
Volatile Organi Not applicable	c Compounds (	VOC) Cont	ent						
						<b>.</b>			
EN / AGHS						Page 5/1			

Version 4.9	Re	Product Name DPD Total Chlorine Reagent Revision Date 01-Jun-2022 Page 6 / 14				
Chemical name	CAS No	Volatile organic compounds (VOC) content	CAA (Clean Air Act)			
Carboxylate Salt	-	No data available	-			
Phosphoric acid, disodium salt	7558-79-4	No data available	-			
Potassium iodide (KI)	7681-11-0	Not applicable	-			
Salt of N,N-Diethyl-p-Phenylenediamine	-	Not applicable	-			
Explosive properties						
Upper explosion limit Lower explosion limit		o information available o information available				
Flammable properties						
Flash point	No	ot applicable				
Flammability Limit in Air Upper flammability limit: Lower flammability limit:		o data available o data available				
Oxidizing properties	No	o data available.				
Bulk density	No	data available				
Reactivity Not applicable.						
Chemical stability						
Explosion data Sensitivity to Mechanical Impact No Sensitivity to Static Discharge No						
Possibility of hazardous reactions None under normal processing.						
None under normal processing.	ad.					
None under normal processing. Conditions to avoid						
Hazardous polymerization None under normal processing. Conditions to avoid None known based on information supplie Incompatible materials Strong acids. Strong bases. Strong oxidiz Hazardous decomposition products None under normal use conditions. Carbo Nitrogen oxides.	ing agents.	de. Iodine compounds. Phosphoru	s oxides. Potassium oxide.			
None under normal processing. Canditions to avoid	ing agents.		s oxides. Potassium oxide.			
None under normal processing. Canditions to avoid	ing agents. In dioxide. Carbon monoxid 11. TOXICOLOGICA		s oxides. Potassium oxide.			

# Product Code(s) 1406499 Issue Date 16-Sep-2019 Version 4.9

Product Name DPD Total Chlorine Reagent Revision Date 01-Jun-2022 Page 7 / 14

Product Information

Inhalation	May cause irritation of respiratory tract.
Eye contact	Irritating to eyes. Causes serious eye irritation.
Skin contact	Causes skin irritation.
Ingestion	Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.
Symptoms	Redness. May cause redness and tearing of the eyes.
A	

Acute toxicity Based on available data, the classification criteria are not met

### Product Acute Toxicity Data Test data reported below.

Oral Exposure Route

Endpoint type	Reported dose	Toxicological	Key literature references and sources for data
Rat	4700 mg/kg	effects	Outside testing
LD 50		Behavioral	
		Flaccid muscle	
		tone	
		Lethargy	
		Prostration	
		Eye	
		Chromodacryorrhe	
		a	
		Ptosis	
		Gastrointestinal	
		Abnormalities of	
		the gastrointestinal	
		tract	
		Diarrhea	
		Liver	
		Abnormalities of	
		the liver	
		Lungs, Thorax,	
		or Respiration	
		Abnormalities of	
		the lungs	
		Dyspnea	
		Red or brown	
		staining of the	
		nose/mouth area	
		Nutritional and	
		Gross Metabolic	
		Soiling of the	
		anogenital area	
		Wetness of the	
		anogenital area	
		Reproductive	
		Skin and	
		Appendages	
	1	Piloerection	

### Ingredient Acute Toxicity Data

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Product Name DPD Total Chlorine Reagent Revision Date 01-Jun-2022 Page 9 / 14

# Respiratory or skin sensitization Based on available data, the classification criteria are not met.

Product Sensitization Data No data available.

Ingredient Sensitization Data Test data reported below.

#### Skin Sensitization Exposure Route

Chemical name	Test method	Species	Results	Key literature references and sources for data
Potassium iodide (KI) (20 - 30%) CAS#: 7681-11-0	Patch test	Human	Not confirmed to be a skin sensitizer	ERMA (New Zealands Environmental Risk Management Authority)

<u>STOT - single exposure</u> Based on available data, the classification criteria are not met.

Product Specific Target Organ Toxicity Single Exposure Data No data available.

Ingredient Specific Target Organ Toxicity Single Exposure Data Test data reported below.

#### Oral Exposure Route

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Potassium iodide (KI)	Mouse	1862 mg/kg	None reported	Lungs, Thorax, or	RTECS (Registry of Toxic
(20 - 30%)	LDLo			Respiration	Effects of Chemical Substances)
CAS# 7681-11-0				Dyspnea	

# <u>STOT - repeated exposure</u> Causes damage to organs through prolonged or repeated exposure

Product Specific Target Organ Toxicity Repeat Dose Data No data available.

# Ingredient Specific Target Organ Toxicity Repeat Exposure Data Test data reported below.

Oral Exposure Route

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Potassium iodide (KI) (20 - 30%)	Rat NOAEL	0.5 mg/kg	90 days	None reported	ECHA (The European Chemicals Agency)
(20 - 30%) CAS#: 7681-11-0	NUAEL				Chemicals Agency)

### Carcinogenicity Based on available data, the classification criteria are not met.

# Product Carcinogenicity Data No data available.

### Ingredient Carcinogenicity Data No data available.

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Product Code(s) 1406499 Issue Date 16-Sep-2019 Version 4.9

#### Product Name DPD Total Chlorine Reagent Revision Date 01-Jun-2022 Page 8/14

Test data reported below.

Oral Exposure Route

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Potassium iodide (KI) (20 - 30%) CAS#: 7681-11-0	Rat LD50	2779 mg/kg	None reported	None reported	RTECS (Registry of Toxic Effects of Chemical Substances)
Salt of N,N-Diethyl-p-Phenyl enediamine (1 - 5%) CAS#: -	Rat LD50	695 mg/kg	None reported	None reported	Outside testing

Unknown Acute Toxicity 0% of the mixture consists of ingredient(s) of unknown toxicity.

Acute Toxicity Estimations (ATE)

ATEmix (oral)	No information available
ATEmix (dermal)	No information available
ATEmix (inhalation-dust/mist)	No information available
ATEmix (inhalation-vapor)	No information available
ATEmix (inhalation-gas)	No information available

<u>Skin corrosion/irritation</u> Classification based on data available for ingredients. Irritating to skin.

Product Skin Corrosion/Irritation Data No data available.

Ingredient Skin Corrosion/Irritation Data Test data reported below.

CI	hemical name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
	hosphoric acid, disodium salt (20 - 30%) AS#: 7558-79-4	Standard Draize Test	Rabbit	500 mg	24 hours	Skin irritant	RTECS (Registry of Toxic Effects of Chemical Substances)

Serious eye damage/irritation Classification based on data available for ingredients. Irritating to eyes.

Product Serious Eye Damage/Eye Irritation Data No data available.

### Ingredient Eye Damage/Eye Irritation Data Test data reported below.

Chemical name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Phosphoric acid, disodium salt (20 - 30%) CAS#: 7558-79-4	Standard Draize Test	Rabbit	500 mg	24 hours	Eye irritant	RTECS (Registry of Toxic Effects of Chemical Substances)
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# Product Code(s) 1406499 Issue Date 16-Sep-2019 Version 4.9

# Product Name DPD Total Chlorine Reagent Revision Date 01-Jun-2022 Page 10 / 14

Chemical name	CAS No	ACGIH	IARC	NTP	OSHA
Carboxylate Salt	-	-	-	-	-
Phosphoric acid, disodium	7558-79-4	-	-	-	-
salt					
Potassium iodide (KI)	7681-11-0	-	-	-	-
Salt of		-	-	-	
N,N-Diethyl-p-Phenylenedi					

Legend

ACGIH (American Conference of Governmental Industrial Hygienists)	Does not apply
IARC (International Agency for Research on Cancer)	Does not apply
NTP (National Toxicology Program)	Does not apply
OSHA (Occupational Safety and Health Administration of the US Department of	Does not apply
l abor)	

Germ cell mutagenicity Based on available data, the classification criteria are not met

Product Germ Cell Mutagenicity invitro Data No data available.

## Ingredient Germ Cell Mutagenicity invitro Data Test data reported below.

Chemical name	Test	Cell Strain	Reported dose	Exposure time	Results	Key literature references and sources for data
Potassium iodide (KI) (20 - 30%) CAS#: 7681-11-0	Cytogenetic analysis	Rat ascites tumor	500 mg/kg	None reported	Positive test result for mutagenicity	RTECS (Registry of Toxic Effects of Chemical Substances)

Product Germ Cell Mutagenicity invivo Data No data available.

# Ingredient Germ Cell Mutagenicity invivo Data No data available

Reproductive toxicity Based on available data, the classification criteria are not met.

Product Reproductive Toxicity Data No data available.

### Ingredient Reproductive Toxicity Data Test data reported below.

#### Oral Exposure Route

Chemical name	Endpoint	Reported	Exposure	Toxicological effects	Key literature references and
	type	dose	time		sources for data
Potassium iodide (KI)	Human	2700 mg/kg	39 weeks	Specific Developmental	RTECS (Registry of Toxic
(20 - 30%)	TDLo			Abnormalities	Effects of Chemical Substances
CAS#: 7681-11-0				Endocrine System	

Aspiration hazard Based on available data, the classification criteria are not met.

Product Name DPD Total Chlorine Reagent Revision Date 01-Jun-2022 Page 11/14

12. ECOLOGICAL INFORMATION Ecotoxicity Based on available data, the classification criteria are not met. Unknown aquatic toxicity 0% of the mixture consists of components(s) of unknown hazards to the aquatic Product Ecological Data Aquatic Acute Toxicity No data available. Aquatic Chronic Toxicity No data available. Ingredient Ecological Data Aquatic Acute Toxicity Test data reported below Crustacea Chemical name Endpoint Reported dose Key literature references and Exposure Species time 48 Hours type ECso sources for data 10.8 mg/L Daphina magna N,N-Diethyl-p-Phen (1 - 59 CAS#: Aquatic Chronic Toxicity No data available. Persistence and degradability

### Product Biodegradability Data No data available. Bioaccumulation

MATERIAL DOES NOT BIOACCUMULATE Product Bioaccumulation Data No data available.	
Partition Coefficient (n-octanol/water)	log K <sub>ow</sub> ~ 0
Mobility	
Soil Organic Carbon-Water Partition Coefficient	log K <sub>ec</sub> ~ 0
Other adverse effects No information available	

	13. DISPOSAL CONSIDERATIONS
Waste treatment methods	
Waste from residues/unused products	Dispose of waste in accordance with environmental legislation. Dispose of in accordance with local regulations.

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Product Code(s) 1406499 Issue Date 16-Sep-2019 Version 4.9	Product Name DPD Total Chlorine Reagent Revision Date 01-Jun-2022 Page 13 / 14	
Sudden release of pressure hazard Reactive Hazard	No No	

### Sudden release of pressure hazard Reactive Hazard

CWA (Clean Water Act) This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

	Chemical name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Р	hosphoric acid, disodium salt 7558-79-4	5000 lb	-	-	х

CERCIA This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Phosphoric acid, disodium salt	5000 lb	-	RQ 5000 lb final RQ
7558-79-4			RQ 2270 kg final RQ

US State Regulations

California Proposition 65 This product does not contain any Proposition 65 chemicals

IMERC: Not applicable

New Jersey Trade Secret Registry Number 80100131-5001 (Carboxylate Salt) New Jersey Trade Secret Registry Number 80100131-5002 (DPD Salt) New York Trade Secret Registry Number 478 (DPD Salt) New York Trade Secret Registry Number 479 (Carboxylate Salt) This product complies with Pennsylvania Trade Secret Regulations. This product is registered as a trade secret in the state of Illinois. This product is registered as a trade secret in the state of Massachusetts. This product is registered as a trade secret in the state of

#### U.S. State Right-to-Know Regulations

This product may contain substances regulated by state right-to-know regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Phosphoric acid, disodium salt 7558-79-4	X	x	x

#### U.S. EPA Label Information

FIFRA	FDA
180.0910	21 CFR 182.1778,21 CFR 182.6290,21
	CFR 182.6778,21 CFR 182.8778
180.0940	21 CFR 184.1634
	180.0910

16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION Special Comments

## Additional information

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DSI /NDSI

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Contaminated packaging US EPA Waste Number

Do not reuse empty containers Not applicable

Not applicable			

	14. TRANSPORT INFORMATION
DOT	Not regulated
TDG	Not regulated
IATA	Not regulated
IMDG	Not regulated
Note:	No special precautions necessary.

15. REGULATORY INFORMATION

## Additional information

National Inventories Complies Complies

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

International Inventories	
EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
KECL - Existing substances	Complies
PICCS	Complies
TCSI	Complies
AICS	Complies
NZIoC	Complies

EINECS/IELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances ENCS - Japan Existing and New Chemical Substances IECSC - China Inventory of Existing Chemical Substances MECL - Korean Existing and Evaluated Chemical Substances PICCS - Philippines Inventory of Chemicals and Chemical Substances TCSI - Taiwan Chemical Substances ACS - Australian Inventory of Chemical Substances NZIOC - New Zealand Inventory of Chemical Substances

US Federal Regulations

SARA 313 Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1996 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

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Fire hazard	No	
Chronic Health Hazard	Yes	
Acute health hazard	Yes	
SARA 311/312 Hazard Categories		

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#### Global Automotive Declarable Substance List (GADSL)

NFPA and HMIS Classifications

NFPA	Health hazards - 2	Flammability - 0	Instability - 0	Physical and chemical
				properties -
HMIS	Health hazards - 2	Flammability - 0	Physical hazards - 0	Personal protection - I
	- *	-		- x

Key or legend to abbreviations and acronyms used in the safety data sheet

NIOSH IDLH	Immediately Dangerous to Life or Health
ACGIH	ACGIH (American Conference of Governmental Industrial Hygienists)
NDF	no data

Legend - Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted avera	ige)	STEL	STEL (Short Term Exposure Limit)
MAC	Maximum Allowable Conce	entration	Ceiling	Ceiling Limit Value
x	Listed		Vacated	These values have no official status. The only binding levels of contaminants are those listed in the final OSHA PEL. These lists are for reference purposes only. Please note that some reference state regulations of these "liberated" exposure limits in their state regulations.
SKN* RSP+ C M	Skin designation Respiratory sensitization Carcinogen mutagen		SKN+ ** R	Skin sensitization Hazard Designation Reproductive toxicant
Prepared By	Hach F	Product Complian	ce Department	
Issue Date	16-Sep	-2019		
Revision Date	01-Jun	-2022		

None Revision Note

Disclaimer USER RESPONSIBILITY: Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations. THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED TO BE ACCURATE. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGUADING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF. HACH COMPANY62022

#### End of Safety Data Sheet

### SAFETY DATA SHEET

# Be Right"

Issue Date 04-May-2021	Revision Date 07-Sep-2021	Version 7.6	Page 1/15
	1. IDENTIFICATIO	N	
Product identifier Product Name	PhosVer® 3 Phosphate Reagent		
Other means of identification Product Code(s)	2106069		
Safety data sheet number	M00035		
Recommended use of the chemical and restrictions on use           Recommended Use         Water Analysis. Phosphate determination.           Uses advised against         Consumer use.           Restrictions on use         None.           Datalis of the supplier of the safety data sheet         Manufacturer Address           Hach Company P.O.Box 389         Loveland, CO 80539 USA +1(970) 669-3050           Emergency telephone number         +1(30) 663-716 - 24 Hour Service			
	2. HAZARDS IDENTIFIC	CATION	
Classification			
Regulatory Status This chemical is considered hazard	ous by the 2012 OSHA Hazard Commur	ication Standard (29 CFR 19	10.1200)
Skin corrosion/irritation		Category 2	
Serious eye damage/eye irritation Category 1			

Serious eye damage/eye irritation Hazards not otherwise classified (HNOC) Not applicable

Most important symptoms and effects, both acute and delayed

Specific hazards arising from the No information available. chemical

Personal precautions, protective equipment and emergency procedures

Methods and material for containment and cleaning up

Burning sensation.

Unsuitable Extinguishing Media Caution: Use of water spray when fighting fire may be inefficient.

5. FIRE-FIGHTING MEASURES

Hazardous combustion products Sulfur oxides. Carbon monoxide, Carbon dioxide. Sodium monoxide. Potassium oxides.

Refer to protective measures listed in Sections 7 and 8.

Prevent further leakage or spillage if safe to do so.

Prevent further leakage or spillage if safe to do so.

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

7. HANDLING AND STORAGE

Take up mechanically, placing in appropriate containers for disposal.

See section 8 for more information. See section 13 for more information.

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment. 6. ACCIDENTAL RELEASE MEASURES

Only persons properly qualified to respond to an emergency involving hazardous substances may respond to a spill according to federal regulations (OSHA 29 CFR 1910.120(a)(v)) and per your company's emergency response plan and guidelines/procedures. See Section 13, Special Instructions for disposal assistance. Outside of the US, only persons properly qualified according to state or local regulations should respond to a spill involving chemicals.

Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. Ensure adequate ventilation.

Indication of any immediate medical attention and special treatment needed Treat symptomatically.

### Label elements

Signal word Danger



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Symptoms

U.S. Notice

Personal precautions

Environmental precautions Environmental precautions

Methods for containment

Methods for cleaning up

Reference to other sections

Precautions for safe handling

Other Information

Note to physicians

Suitable Extinguishing Media

Special protective equipment for fire-fighters

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# Hazard statements H315 - Causes skin irritation H318 - Causes serious eye damage

Precautionary statements

Presautionary statements P280 - Wear protective gloves, protective clothing, eye protection, and face protection P302 + P302 - IF ON SKIN: Wash with plenty of soap and water P302 + P313 - If skin irritation occurs: Get medical attention P302 - Take of contaminated clothing and wash before reuse P305 + P351 + P351 + P351 + IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to C Canting the protection do. Continue rinsing P310 - Immediately call a POISON CENTER or doctor/physician

### Other Hazards Known May be harmful if swallowed

	3. COMPOSITION/INFORMATION ON INGREDIENTS	
Substance Not applicable		

Mixture

Chemical Family Chemical nature

Mixture. Mixture of inorganic salts, Mixture of organic compounds.

Percent ranges are used where confidential product information is applicable

Chemical name	CAS No	Percent Range	HMRIC #
Potassium pyrosulfate	7790-62-7	80 - 90%	-
L-Ascorbic acid	50-81-7	10 - 20%	-
Sodium molybdate	7631-95-0	1 - 5%	-
Tetrasodium EDTA, dihydrate	10378-23-1	<1%	-
Antimonate(2-),	28300-74-5	<1%	-
bis[.mu(2,3-dihydroxybutanedioato(4-)-O1,O2:O3,O4)]di-, dipotassium, trihydrate, stereoisomer			
4. FIRST AID MEASURES			
Description of first aid measures			

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Self-protection of the first aider	Avoid contact with skin, eyes or clothing.
Ingestion	Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Call a physician.
Skin contact	Wash off immediately with soap and plenty of water for at least 15 minutes. Get medical attention if irritation develops and persists.
Eye contact	Get immediate medical advice/attention. Rinse immediately with plently of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area.
Inhalation	Remove to fresh air. Get medical attention immediately if symptoms occur.
General advice	Immediate medical attention is required. Show this safety data sheet to the doctor in attendance.

Product Code(s) 2106069 Issue Date 04-May-2021 Version 7.6	Rev	duct Name PhosVer® 3 Phos ision Date 07-Sep-2021 e 4 / 15	phate Reagent		
Advice on safe handling	Handle in accordance with goo skin, eyes or clothing. Do not e contaminated clothing and was	eat, drink or smoke when using			
Conditions for safe storage, include	ing any incompatibilities				
Storage Conditions	Keep containers tightly closed in a dry, cool and well-ventilated place. Store locked up. Keep out of the reach of children.				
Flammability class	Not applicable				
8. EX	POSURE CONTROLS/PE	RSONAL PROTECTION	1		
Control parameters_					
Exposure Guidelines					
Chemical name	ACGIH TLV	OSHA PEL	NIOSH		
Sodium molybdate	TWA: 0.5 mg/m <sup>3</sup> Mo	TWA: 5 mg/m <sup>3</sup>	IDLH: 1000 mg/m		
CAS#: 7631-95-0 Antimonate(2-), bis[.mu(2,3-dihydroxybutanedioato(4 )-01,02:03,04)]di-, dipotassium, trihydrate, stereoisomer CAS#: 28300-74-5	respirable particulate matter TWA: 0.5 mg/m <sup>3</sup> Sb 4-	(vacated) TWA: 5 mg/m <sup>3</sup> TWA: 0.5 mg/m <sup>3</sup> (vacated) TWA: 0.5 mg/m <sup>3</sup>	IDLH: 50 mg/m <sup>3</sup> TWA: 0.5 mg/m <sup>3</sup>		
Appropriate engineering controls Engineering Controls	Showers Eyewash stations Ventilation systems.				
Individual protection measures, sur Respiratory protection	ch as personal protective equi No protective equipment is nee exceeded or irritation is experi	eded under normal use condition			
Hand Protection	Wear suitable gloves. Impervious gloves. Gloves must be inspected prior to use. The selected protective gloves have to satisfy the specifications of EU Directive 2016/425 and the standard EN 374 derived from it. Chemical resistant gloves made of butyl rubber or nitrile rubber category III according to EN 374-12016.				
Eye/face protection	Tight sealing safety goggles.				
Skin and body protection	Wear suitable protective clothing. Long sleeved clothing.				
General Hygiene Considerations	Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. not eat, drink or smoke when using this product.				
Environmental exposure controls	Local authorities should be advised if significant spillages cannot be contained. Do not allow into any sewer, on the ground or into any body of water.				
	None under normal processing.				

Information on basic physical and chemical properties

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Product Code(s) 2106069 Issue Date 04-May-2021 Version 7.6			Product Name Pho Revision Date 07- Page 5 / 15		sphate Reagent	
Physical state Appearance powder Odor Odorless	Solid			white Not applicabl	9	
Property	1	Values			Remarks • Method	
Molecular weight		Not applicable				
рН 1.5			5% @ 20°C			
Melting point/freezing point		105 °C / 221	°F			
Boiling point / boiling range		No data availabl	le			
Evaporation rate		Not applicable				
Vapor pressure		Not applicable				
Relative vapor density	Relative vapor density No data :					
Specific gravity (water = 1 / ai	2.22					
Partition Coefficient (n-octane	log K <sub>ow</sub> ~ -0.42					
Soil Organic Carbon-Water Partition		log K∞ ~ -0.23				
Coefficient Autoignition temperature		No data available				
Decomposition temperature	Decomposition temperature					
Dynamic viscosity		Not applicable				
Kinematic viscosity		Not applicable				
Solubility(ies)						
Water solubility						
Water solubility classification	ation	Water s		Wat	er Solubility Temperature	
Soluble		> 1000	) mg/L		25 °C / 77 °F	
Solubility in other solvents						
Chemical Name	Solubility cl		Solubilit		Solubility Temperature	
Acid	Solu	uble	> 1000 mg	g/L	25 °C / 77 °F	
Other information						
Metal Corrosivity						
Steel Corrosion Rate Aluminum Corrosion Rate	1		No data available No data available			
Volatile Organic Compounds Not applicable	(VOC) Content					

Chemical name	CAS No	Volatile organic compounds (VOC) content	CAA (Clean Air Act)
Potassium pyrosulfate	7790-62-7	No data available	-
L-Ascorbic acid	50-81-7	No data available	-
Sodium molybdate	7631-95-0	No data available	-

Product Code(s) 2106069 Issue Date 04-May-2021 Version 7.6	Product Name PhosVer® 3 Phosphate Reagent Revision Date 07-Sep-2021 Page 7 / 15				
Product Information					
Inhalation	May cause irritation of respiratory tract.				
Eye contact	Severely irritating to eyes. Causes serious eye damage. May cause burns. May cause irreversible damage to eyes.				
Skin contact	Causes skin irritation.				
Ingestion	Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.				
Symptoms	Redness. Burning. May cause blindness. May cause redness and tearing of the eyes.				
Acute toxicity Based on available data, the classifica	ation criteria are not met				
Deside of All All The Lots Deside					

# Product Acute Toxicity Data No data available.

Ingredient Acute Toxicity Data Test data reported below.

#### Oral Exposure Route

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Potassium pyrosulfate (80 - 90%) CAS#: 7790-62-7	Rat LD50	2340 mg/kg	None reported	None reported	Vendor SDS
Sodium molybdate (1 - 5%) CAS#: 7631-95-0	Rat LD50	4000 mg/kg	None reported	None reported	RTECS (Registry of Toxic Effects of Chemical Substances)
Tetrasodium EDTA, dihydrate (<1%) CAS#: 10378-23-1	Rat LD50	2700 mg/kg	None reported	None reported	IUCLID (The International Uniform Chemical Information Database)
Antimonate(2-), bis[.mu(2,3-dihydrox ybutanedioato(4-)-O1 ,O2:O3,O4)]di-, dipotassium, trihydrate, stereoisomer (<1%) CAS#: 28300-74-5	Rat LD50	115 mg/kg	None reported	None reported	Vendor SDS

#### Dermal Exposure Route

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Sodium molybdate (1 - 5%) CAS#: 7631-95-0	Rat LD50	> 2000 mg/kg	None reported	None reported	Vendor SDS

#### Inhalation (Dust/Mist) Exposure Route

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Antimonate(2-),	None	None	None	None reported	No information available

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Product Name PhosVer® 3 Phosphate Reagent Revision Date 07-Sep-2021 Page 6 / 15

Chemical name	CAS No	Volatile organic compounds (VOC) content	CAA (Clean Air Act)	
Tetrasodium EDTA, dihydrate	10378-23-1	Not applicable	-	
Antimonate(2-), bis[.mu(2,3-dihydroxybutanedioato(4- )-O1,O2:O3,O4)]di-, dipotassium, trihydrate, stereoisomer	28300-74-5	No data available	-	
Explosive properties				
Upper explosion limit Lower explosion limit	No data available No data available			
Flammable properties				
Flash point	No	ot applicable		
Flammability Limit in Air Upper flammability limit: Lower flammability limit:		o data available o data available		
Oxidizing properties	No	o data available.		

10. STABILITY AND REACTIVITY

No data available

Reactivity Not applicable

Bulk density

Chemical stability Stable under normal conditions

Explosion data Sensitivity to Mechanical Impact None. Sensitivity to Static Discharge None.

Possibility of hazardous reactions None under normal processing.

Hazardous polymerization Hazardous polymerization does not occur.

Conditions to avoid None known based on information supplied.

Incompatible materials\_ Strong acids. Strong bases. Strong oxidizing agents.

<u>Hazardous decomposition products</u> Thermal decomposition can lead to release of irritating and toxic gases and vapors.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

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Product Code(s) 2106069 Issue Date 04-May-2021 Version 7.6			Product Name Revision Date Page 8 / 15	osphate Reagent	
bis[.mu(2,3-dihydrox ybutanedioato(4-)-O1 ,O2:O3,O4)]di-, dipotassium, trihydrate, stereoisomer (<1%) CAS#: 28300-74-5	reported	reported	reported		

Unknown Acute Toxicity 17% of the mixture consists of ingredient(s) of unknown toxicity.

### Acute Toxicity Estimations (ATE)

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)	2,775.50 mg/kg
ATEmix (dermal)	No information available
ATEmix (inhalation-dust/mist)	No information available
ATEmix (inhalation-vapor)	No information available
ATEmix (inhalation-gas)	No information available

Skin corrosion/irritation Classification based on data available for ingredients. Irritating to skin.

Product Skin Corrosion/Irritation Data Test data reported below.

 
 Results
 Key literature references and

 Not corrosive
 sources for data

 to skin
 Internal Data

 Outside testing
 Outside testing
 Test method United States Exposure time None reported Species Rabbit Reported dose Department of Transportation (DOT) Skin Corrosion Test

Ingredient Skin Corrosion/Irritation Data Test data reported below.

Chemical name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Potassium pyrosulfate (80 - 90%) CAS#: 7790-62-7	None reported	None reported	None reported	None reported	Corrosive to skin	Vendor SDS
Sodium molybdate (1 - 5%) CAS#: 7631-95-0	Standard Draize Test	Rabbit	500 mg	4 hours	Not corrosive or irritating to skin	ECHA (The European Chemicals Agency)

Serious eye damage/irritation Classification based on data available for ingredients. Causes burns. Risk of serious damage to eyes.

Product Serious Eye Damage/Eye Irritation Data No data available.

Ingredient Eye Damage/Eye Irritation Data Test data reported below.

Chemical name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and
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# Product Code(s) 2106069 Issue Date 04-May-2021 Version 7.6

Product Name PhosVer® 3 Phosphate Reagent Revision Date 07-Sep-2021 Page 9/15

						sources for data
Potassium pyrosulfate (80 - 90%) CAS#: 7790-62-7	None reported	None reported	None reported	None reported	Corrosive to eyes	Vendor SDS
Sodium molybdate (1 - 5%) CAS#: 7631-95-0	Patch test	None reported	200 mg	None reported	Not corrosive or irritating to eyes	ECHA (The European Chemicals Agency)
Antimonate(2-), bis[.mu(2,3-dihydrox ybutanedioato(4-)-O1 ,O2:O3,O4)]di-, dipotassium, trihydrate, stereoisomer (<1%) CAS#: 28300-74-5	None reported	Rabbit	100 mg	24 hours	Eye irritant	No information available

Respiratory or skin sensitization Based on available data, the classification criteria are not met.

### Product Sensitization Data No data available.

Ingredient Sensitization Data Test data reported below.

#### Skin Sensitization Exposure Route

Chemical name	Test method	Species	Results	Key literature references and sources for data
Sodium molybdate (1 - 5%) CAS#: 7631-95-0	OECD Test No. 406: Skin Sensitization	Guinea pig	Not confirmed to be a skin sensitizer	Vendor SDS

<u>STOT - single exposure</u> Based on available data, the classification criteria are not met.

### Product Specific Target Organ Toxicity Single Exposure Data No data available.

Ingredient Specific Target Organ Toxicity Single Exposure Data No data available.

<u>STOT - repeated exposure</u> Based on available data, the classification criteria are not met.

Product Specific Target Organ Toxicity Repeat Dose Data

### Ingredient Specific Target Organ Toxicity Repeat Exposure Data No data available.

# Carcinogenicity Based on available data, the classification criteria are not met.

Product Carcinogenicity Data No data available.

# Ingredient Carcinogenicity Data No data available.

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EN / AGHS
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Product Cod Issue Date Version 7.6	04-May-2				Product Name PhosVer® 3 Pho Revision Date 07-Sep-2021 Page 11 / 15	isphate Reagent
		type	dose	time		sources for data
L-Ascorbi (10 - 20 CAS#: 50	0%)	Guinea pig TDLo	19500 mg/kg	28 days	None reported	RTECS (Registry of Toxic Effects of Chemical Substances)
Aspiration h						· · · · ·

0 % of the mixture consists of component(s) of unknown hazards to the aquatic environment.

12. ECOLOGICAL INFORMATION

Ecotoxicity Based on available data, the classification criteria are not met.

Unknown aquatic toxicity

#### Product Ecological Data

Aquatic Acute Toxicity No data available.

Aquatic Chronic Toxicity No data available.

### Ingredient Ecological Data

Aquatic Acute Toxicity Test data reported below

### Fish

			1		
Chemical name	Exposure	Species	Endpoint	Reported	Key literature references and sources for data
	time		type	dose	
Potassium	96 hours	Oncorhynchus mykiss	LC <sub>50</sub>	420 mg/L	ERMA (New Zealands
pyrosulfate					Environmental Risk Management
(80 - 90%)					Authority)
CAS#: 7790-62-7					
L-Ascorbic acid	96 hours	None reported	LC <sub>50</sub>	44200 mg/L	Estimation through ECOSARS
(10 - 20%)					v1.11 part of the Estimation
CAS#: 50-81-7					Programs Interface (EPI) Suite™
Sodium molybdate	96 hours	Oncorhynchus mykiss	LC50	800 mg/L	GESTIS (Information System on
(1 - 5%)				-	Hazardous Substances of the
CAS#: 7631-95-0					German Social Accident
					Insurance)
Antimonate(2-),	96 hours	None reported	LC50	12.5 mg/L	Vendor SDS
bis[.mu(2,3-dihydrox					
ybutanedioato(4-)-O1					
,02:03,04)]di-,					
dipotassium,					
trihydrate,					
stereoisomer		1	1		
(<1%)		1	1		
CAS#: 28300-74-5					

#### Crustacea

Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Potassium pyrosulfate (80 - 90%)	48 Hours	Daphnia magna	EC <sub>50</sub>	140 mg/L	ERMA (New Zealands Environmental Risk Management Authority)
EN / AGHS					Page 11/15

# Product Code(s) 2106069 Issue Date 04-May-2021 Version 7.6

#### Product Name PhosVer® 3 Phosphate Reagent Revision Date 07-Sep-2021 Page 10/15

Chemical name	CAS No	ACGIH	IARC	NTP	OSHA
Potassium pyrosulfate	7790-62-7	-	-	-	-
L-Ascorbic acid	50-81-7	-	-	-	-
Sodium molybdate	7631-95-0	A3	-	-	-
Tetrasodium EDTA, dihydrate	10378-23-1		-	-	
Antimonate(2-), bis[.mu(2,3-dihydroxybut anedioato(4-)-O1,O2:O3,O 4)]di-, dipotassium, trihydrate. stereoisomer	28300-74-5	-	-	-	-

Legend

ACGIH (American Conference of Governmental Industrial Hygienists)	A3 - Animal Carcinogen
IARC (International Agency for Research on Cancer)	Does not apply
NTP (National Toxicology Program)	Does not apply
OSHA (Occupational Safety and Health Administration of the US Department of	Does not apply
Labor)	

# Germ cell mutagenicity Based on available data, the classification criteria are not met.

Product Germ Cell Mutagenicity invitro Data No data available.

# Ingredient Germ Cell Mutagenicity invitro Data Test data reported below.

Chemical name	Test	Cell Strain	Reported	Exposure	Results	Key literature
			dose	time		references and
						sources for data
L-Ascorbic acid	DNA damage	Human fibroblast	0.2 mmol/L	None	Positive test result for	RTECS (Registry
(10 - 20%)	-			reported	mutagenicity	of Toxic Effects of
CAS#: 50-81-7						Chemical
						Substances)
Sodium molybdate	Phage inhibition	Escherichia coli	16 mmol/L	None	Positive test result for	RTECS (Registry
(1 - 5%)	capacity			reported	mutagenicity	of Toxic Effects of
CAS#: 7631-95-0						Chemical
						Substances)

# Product Germ Cell Mutagenicity invivo Data No data available.

Ingredient Germ Cell Mutagenicity invivo Data No data available.

Reproductive toxicity Based on available data, the classification criteria are not met.

Product Reproductive Toxicity Data No data available.

Ingredient Reproductive Toxicity Data Test data reported below.

#### Oral Exposure Route

Page 9/15

E	Chemical name	Endpoint	Reported	Exposure	Toxicological effects	Key literature references and
Г						
E	EN / AGHS					Page 10 / 15

Version 7.6	06069 2021	R	Product Name Revision Date Page 12 / 15	PhosVer® 3 Ph 07-Sep-2021	osphate Reagent
CAS#: 7790-62-7					
L-Ascorbic acid (10 - 20%) CAS#: 50-81-7	48 Hours	None reported	LC <sub>50</sub>	17500 mg/L	Estimation through ECOSARS v1.11 part of the Estimation Programs Interface (EPI) Suite <sup>TN</sup>
Algae					
Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
L-Ascorbic acid (10 - 20%) CAS#: 50-81-7	96 hours	None reported	EC <sub>50</sub>	29675 mg/L	Estimation through ECOSARS v1.11 part of the Estimation Programs Interface (EPI) Suite <sup>TI</sup>
Aquatic Chronic Tox No data available.	cicity				
Persistence and deg	radability				
Product Biodegrada No data available.	bility Data				
Bioaccumulation MATERIAL DOES NO Product Bioaccumul No data available.		JLATE			
Partition Coefficient	(n-octanol/wa	ier) la	og Kow ~ -0.42		
Mobility					
	-Water Partitic	n Coefficient la	og K∞ ~ -0.23		
Soil Organic Carbon Other adverse effect	ts	n Coefficient lo	og K ~ -0.23		
Soil Organic Carbon Other adverse effect	ts	n Coefficient k	-	ONS	
Soil Organic Carbon Other adverse effect No information availat	ts ble		-	ONS	
Soil Organic Carbon Other adverse effect No information availat Waste treatment mel Waste from residues	ts ble thods		NSIDERATI		f waste in accordance with
Soil Organic Carbon Other adverse effect No information availab Waste treatment mel Waste from residues products	ts ble thods s/unused	13. DISPOSAL CO	VINSIDERATION		f waste in accordance with
Soil Organic Carbon Other adverse effect No information availat Waste treatment mel Waste from residues products Contaminated packa	ts ble thods s/unused	13. DISPOSAL CO Dispose of in accordance w environmental legislation.	VINSIDERATION		f waste in accordance with
Soil Organic Carbon Other adverse effect No information availat Waste treatment mel Waste from residues products Contaminated packa	ts ble thods s/unused	13. DISPOSAL CO Dispose of in accordance w environmental legislation. Do not reuse empty contain	VINSIDERATION		f waste in accordance with
Soil Organic Carbon Diher adverse effect No information availat Waste treatment mel Waste from residues orducts Contaminated packa	ts ble thods s/unused	13. DISPOSAL CO Dispose of in accordance w environmental legislation. Do not reuse empty contain	vith local regulat	ions. Dispose o	f waste in accordance with
Soil Organic Carbon Soil Organic Carbon No information availat Waste treatment med Waste treatment med Waste from residues products Contaminated packa US EPA Waste Numl	ts ble thods s/unused	13. DISPOSAL CO Dispose of in accordance w environmental legislation. Do not reuse empty contain Not applicable, D002	vith local regulat	ions. Dispose o	f waste in accordance with

IMDG	Not regulated
IATA	Not regulated
TDG	Not regulated
501	Notrogalated

Product Name PhosVer® 3 Phosphate Reagent Revision Date 07-Sep-2021 Page 13/15

No special precautions necessary Note:

Additional information
There is a possibility that this product could be contained in a reagent set or kit composed of various compatible dangerous goods.
If the item is not in a reagent set or kit, the classification given above applies.
If the item is part of a reagent set or kit the classification would change to the following:
UN3316 Chemical Kit, Hazard Class 9, Packing Group II or III.
If the item is not regulated, the Chemical Kit classification dee not apply.

15. REGULATORY INFORMATION National Inventories TSCA DSL/NDSL Complies Complies

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

International Inventories	
EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
KECL - Existing substances	Complies
PICCS	Complies
TCSI	Complies
AICS	Complies
N71-0	Complian

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances ENCS - Japan Existing and New Chemical Substances IECSC - China Inventory of Existing Chemical Substances PICCS - Philipines Inventory of Chemicals and Chemical Substances TCS1 - Taiwan Chemical Substances Inventory AICS - Australian Inventory of Chemicals and Substances NZIGC - New Zealand Inventory of Chemicals

### US Federal Regulations

SARA 313 Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical name	SARA 313 - Threshold Values %
Antimonate(2-),	1.0
bis[.mu(2,3-dihydroxybutanedioato(4-)-O1,O2:O3,O4)]di-,	
dipotassium, trihydrate, stereoisomer (CAS #: 28300-74-5)	
SARA 311/312 Hazard Categories	
Acute health hazard	Yes
Chronic Health Hazard	Yes
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act) This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical name	Quantities	CWA - Toxic Pollutants	Pollutants	Substances
EN / AGHS				Page 13/15

Product Code(s) Issue Date 04-N Version 7.6								
NFPA	Health	hazards - 3	Flamm	ability - 0	Instability - 0	Physical and chemical properties -		
HMIS	hazards - 3	Flamm	ability - 0	Physical hazards - 0	Personal protection - X - I			
Key or legend to	abbreviations ar	nd acronyms us	ed in the s	afety data she	et			
NIOSH IDLH ACGIH NDF				to Life or Healt erence of Gove	<i>h</i> rnmental Industrial Hygien	ists)		
Legend - Section	n 8: EXPOSURE	CONTROLS/PER	RSONAL P	ROTECTION				
TWA	TWA (time-weig	hted average)		STEL	STEL (Short Term	Exposure Limit)		
MAC	Maximum Allow	able Concentration	on	Ceiling	Ceiling Limit Value	Ceiling Limit Value		
x	Listed			Vacated	binding levels of co listed in the final OS for reference purpo some reference sta	no official status. The only ntaminants are those SHA PEL. These lists are ses only. Please note that te regulations of these e limits in their state		
SKN* RSP+ C M	Skin designation     SKN+     Skin sensitization       Respiratory sensitization     **     Hazard Designation       Carcinogen     R     Reproductive toxicant       mutagen     R     Reproductive toxicant							
Prepared By		Hach Produc	t Complian	ce Department				
Issue Date	Issue Date 04-May-2021							
Revision Date	Revision Date 07-Sep-2021							
Revision Note		SDS sections 2	s updated					
Disclaimer								
USER RESPONS	BII ITY: Fach us	er should read	and under	stand this info	rmation and incornorate	it in individual site		

USER RESPONSIBILITY: Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations.

THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED TO BE ACCURATE. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.

HACH COMPANY@2021

#### End of Safety Data Sheet

Product Code(s) 2106069 Issue Date 04-May-2021 Version 7.6

Product Name PhosVer® 3 Phosphate Reagent Revision Date 07-Sep-2021 Page 14/15

Antimonate(2-),	-	X	-	Х
bis[.mu(2,3-dihydroxybu				
tanedioato(4-)-01,02:03,				
O4)]di-, dipotassium,				
trihydrate, stereoisomer				
28300-74-5				
CERCIA				

CERCLA This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

#### Hazardous Substances RQs CERCLA/SARA RQ 100 lb -Chemical name Antimonate(2-), R RQ 100 lb final RQ Antimonate(2-), bis[.mu.-(2,3-dihydroxybutaned oato(4-)-O1,O2:O3,O4)]di-, dipotassium, tihydrate, stereoisomer 28300-74-5 <u>US State Regulations</u> RQ 45.4 kg final RQ

California Proposition 65 This product does not contain any Proposition 65 chemicals

IMERC: Not applicable

U.S. State Right-to-Know Regulations

This product may contain substances regulated by state right-to-know regulations.

Chemical name	New Jersey	Massachusetts	Pennsylvania
Antimonate(2-),	X	X	Х
bis[.mu(2,3-dihydroxybutanedi			
oato(4-)-O1,O2:O3,O4)]di-,			
dipotassium, trihydrate,			
stereoisomer			
28300-74-5			

U.S. EPA Label Information

Chemical name	FIFRA	FDA
L-Ascorbic acid	180.0950	21 CFR 182.3013,21 CFR 182.8013
Sodium molybdate	180.0920	-

16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION

Special Comments

Additional information

Global Automotive Declarable Substance List (GADSL)

NFPA and HMIS Classifications

EN / AGHS

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## SAFETY DATA SHEET

Be Right<sup>™</sup>

Issue Date 01-Mar-2021

Revision Date 01-Mar-2021

Version 3.2

	1. IDENTIFICATION			
Product identifier				
Product Name	NitriVer® 2 Nitrite Reagent			
Other means of identification				
Product Code(s)	2107569			
Safety data sheet number	M00031			
Recommended use of the chemical	and restrictions on use			
Recommended Use	Determination of nitrite Laboratory reagent.			
Uses advised against	No information available			
Details of the supplier of the safety data sheet				
Initial Supplier Identifier Hach Sales & Service LP. 3020 Gore	Road, London, Ontario N5V 4T7 Canada Tel: 1-800-665-7635			
Manufacturer Address Hach Company P.O. Box 389 Lovelar	nd, CO 80539 USA +1(970) 669-3050			
Emergency telephone number				
Emergency Telephone	Chemtrec 1-800-424-9300 CANUTEC 613-992-4624			

2. HAZARD IDENTIFICATION

Acute toxicity - Oral Category 4 Skin corrosion/irritation Category 2 Serious every damagadewic irritation Category 1		
Skin conosion/initiation Category 2	Acute toxicity - Oral	Category 4
Serious eve damage/eve irritation	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 1

Label elements

Classification

Signal word - Danger

Hazard statements H302 - Harmful if swallowed H315 - Causes skin irritation H318 - Causes serious eye damage

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<form></form>		P270 - Do not eat, drink or	smoke when	using th POISO	nis product N CENTER or doctor	if vou feel unwell				Syr
<text><text><text><text><text><text><text><text></text></text></text></text></text></text></text></text>	<text><text><text><text><text></text></text></text></text></text>	P330 - Rinse mouth								Ind
<text></text>	<text><text><text><text><text></text></text></text></text></text>	2302 + P352 - IF ON SK	IN: Wash with	h plenty	of water and soap					Not
<text></text>		2362 + P364 - Take off cor 280 - Wear protective glov	ntaminated cle ves, protectiv	othing a e clothir	nd wash it before reu ng, eye protection, an	d face protection				_
<text></text>		<ul> <li>Continue rinsing</li> </ul>				everal minutes. Remo	ove contact	lenses, if	present and easy to	
<text></text>		Jnknown Acute Toxicity 0 % of the mixture consists	of ingredient	(s) of ur	nknown toxicity.					Un
	The make consists of progressingly of wheream action habilitation bloodly (gen) (and the make consists) of production of the make consists of th	0 % of the mixture cons 0 % of the mixture cons	sists of ingred sists of ingred	lient(s) o lient(s) o	of unknown acute ora of unknown acute der	mal toxicity				
<section-header></section-header>	advanced based Secondaria (Secondaria (Secondaria)))))))))))))))))))))))))))))))))))	0 % of the mixture cons	sists of ingred	lient(s) o	of unknown acute inh	alation toxicity (vapo	mist) r)			che
	abe     A. COMPOSITION/INFORMATION ON INGREDIENTS       abe     Bes       abs     Bes        abs     Bes <td></td> <td>sists of ingred</td> <td>lient(s)</td> <td>of unknown acute inh</td> <td>alation toxicity (gas)</td> <td></td> <td></td> <td></td> <td></td>		sists of ingred	lient(s)	of unknown acute inh	alation toxicity (gas)				
Barbard Topological State         State		Other Hazards Known lot applicable.								Spo
specialize           stage           st	abie     Series		3. COMF	POSIT	ION/INFORMA	tion on Ingr	EDIENT	5		
Chemical name         Structures         CAS No.         Percent Response Listing         Unitian and the structure of the structure o	minip in the second mean in the second	lot applicable								Per
utified add, inor(2+) and the periods of the states of	bodi: toroight and the person of the solution o	lixture								WH
Archandamine (11)       Mo information       7790-42.7       30 - 40%       g       -         Probassum proventing       No information       7790-42.7       30 - 40%       g       -         Schulter       A. FIRST ALD MEASURES         schulter       Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.         schulter       Renove to fresh air. Get medical advice/attention. Rinse immediately with plenty of water, also under the eyelide, for at least 15 minutes. Renove contract lenses. If present and easy to do. Continue rinsing. Keep eye wide open while inning. Do not not affected area         1 / MHS       Page 2/12	medianing (11)       min state       7780-43-7       30 - 40%       g       -         min provediating       No information       7780-43-7       30 - 40%       g       -         a main provediating       A: FIRST ALD MEASURES       Emilian       Emilian         and first all measures       Main information       Main information       Emilian         and first all measures       Book whis safety data sheet to the doctor in attendance. Immediate medical attention is required.       Main information       Main information         at       Continue thrange Keep eye wide open white mange. Do not the affected area.       Provide a 2/12       Emilian         Attendee in accordance with pood industrial hygine and safety practice. Avoid contact with address in a contaminated colling and wash before rease.       Page 2/12       Emilian         a for safe handling       Mardie in accordance with good industrial hygine and safety practice. Avoid contact with address in a dry, cool and weil-wentilated place. Keep out of the rease or orbing and wash before rease.       Emilian         Containinated colling and wash before rease.       Emilian       Emilian         Containine training Keep eye wide open white rease or orbing book et al.       Main et accordance with good industrial hygine and safety practice. Avoid contact with address in a dry, cool and weil-wentilated place. Keep out of the rease or orbing book et al.       Emilian         Containine traing the doctore on	Sulfuric acid, iron(2+) salt	Ferrou	JS				ts	HMIRA #	Per
Instrume product       available       Instrume product       a         A. FIRST ADD MEASURES         saciplion of first ald measures         neeral advice       Show this safety data sheed to the doctor in attendance. Immediate medical attention is regime.         valuation       Remove to fresh air. Get medical advice/attention. Rives immediately with plenty of water, also under the equide. The instrume. Remove normal ensage. Remear and easy to do Continue manage. Keep sey wide open while immediate medical advice/attention. Rives immediately with plenty of water, also under the equide. The instrume. Remove normal ensage. Remear and easy to do Continue manage. Keep sey wide open while immediate medical attention. Continue manage. Keep sey wide open while immediate medical attention. Rives and the exception of t	available       Available       Available       Available         available       Available       Available       Available         A. FIRST ADD MEASURES       Mail       Mail         available       Available       Mail       Mail         available       Available       Mail       Mail         available       Available       Mail       Mail         available       Available       Available       Mail       Mail         available       Available       Available       Mail       Mail       Mail       Mail         available       Available       Available       Available       Available       Mail       Mail<	1,2-ethanediamine (1:1)	m Sulfa	ate	7700 60 7	30 - 40%	-			
A. FIRST ALD MEASURES         scription of first laid measures         maral advice       Show this safely data sheet to the doctor in attendance. Immediate medical attention is required.         salation       Remove to fresh air. Get medical attention immediately with period yours accur.         e context       Get immediate medical advice/attention. Rines immediately with period yours also under the periods, for attendant 15 minutes. Remove contract imease, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area.         1 / HOHS       Page 2/12         07569 - NitriVer* 2 Nitrite Reagent       Revision Date 01-Mar-2021         exautions for safe handling       Mardie in accordance with good industrial hygiene and safety practice. Avoid contact with actin, eyes or clothing. Do not est, drirk or smoke when using this product. Take off contaminated cooling and wash before reuse.         indictions for safe handling       Mardie in accordance with good industrial hygiene and safety practice. Avoid contact with actin, eyes or clothing. Do not est, drirk or smoke when using this product. Take off contaminant dooling and wash before reuse.         indictions for safe handling       Mardie in accordance with good industrial hygiene and safety practice. Avoid contact with actin, eyes or clothing. Do not est, drirk or smoke when using this product. Take off         indictions for safe handling       Mardie in accordance with good industrial hygiene and safety practice. Avoid contact with actin. Take in the contaminent of the formation the materidated place. Keep out of the reach of children Store locked u	A. FIRST AID MEASURES       En         and first aid measures       Mail         twice       Show this safely data sheet to the doctor in attendance. Immediate medical attention is       Mail         n       Remove to fresh air. Get medical attention immediately if symptoms occur.       Mail         act       Get immediate medical adviculatention. Since immediately with plenty of water and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area.       Mail         3HS       Page 2/12       EN         - NitriVer <sup>®</sup> 2 Nitrite Reegent       Revision Date 01-Mar-2021       EN         - nitriVer <sup>®</sup> 2 Nitrite Reegent       Revision Date 01-Mar-2021       EN         - nitriVer <sup>®</sup> 2 Nitrite Reegent       Revision Date 01-Mar-2021       EN         - nitriVer <sup>®</sup> 2 Nitrite Reegent       Revision Date 01-Mar-2021       EN         - nitriVer <sup>®</sup> 2 Nitrite Reegent       Revision Date 01-Mar-2021       EN         - nitriVer <sup>®</sup> 2 Nitrite Reegent       Revision Date 01-Mar-2021       EN         - nitriVer <sup>®</sup> 2 Nitrite Reegent       Revision Date 01-Mar-2021       EN         - nitriVer <sup>®</sup> 2 Nitrite Reegent       Revision Date 01-Mar-2021       EN         - nitriver <sup>®</sup> 2 Nitrite Reegent       Revision Date 01-Mar-2021       EN         - nitriver <sup>®</sup> 2 Nitrite Reegent       Revision Date 0.1-Mar-2021       EN <td>Fotassium pyrosuitate</td> <td></td> <td></td> <td>//90-62-/</td> <td>30 - 40%</td> <td>g</td> <td></td> <td>-</td> <td></td>	Fotassium pyrosuitate			//90-62-/	30 - 40%	g		-	
4. FIRST AUD MEASURES         acciption of first aid measures         neral advice       Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.         autation       Remove to fresh air. Get medical attention immediately if symptoms occur.         Ge contect       Get immediate medical advice/attention. Rines immediately with plenty of water, also under the eyelisis, for at least 15 minutes. Remove contact lenses, 17 present and easy to do. Continue finang. Keep eye wide open while rinning. Do not rub affected area.         17 / HGHS       Page 2 / 12         07569 - NitriVer <sup>®</sup> 2 Nitrite Reagent       Revision Date 01-Mar-2021         exations for safe handling       Made in accordance with good industrial hygiene and safety practice. Avoid contact with askin, eyes or clothing. Do not rub. diffected area.         Indices for safe handling       Made in accordance with good industrial hygiene and safety practice. Avoid contact with askin, eyes or clothing and wash holer eneuse.         Indices for safe handling       Made in accordance with good industrial hygiene and safety practice. Avoid contact with askin, eyes or clothing and wash holer eneuse.         Indices for safe handling       Keep containers ightly closed in a dry, cool and weil-ventilated place. Keep out of the reach of children. Stare locked up.         Indice as the storage. Including any incompatibilities       Revision Date 01-Mar-2021         Drage Conditions       Keep containers ightly closed in a dry, cool and weil-ventilated place. Keep out of the reach of child	A. FIRST ADD MEASURES       Main         on of first ald measures       Mode         on of first ald measures       Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.       Main         on       Centrow to fresh air. Cent medical attention immediately if symptoms occur.       Present the eyelide, for at least 15 minutes. Remove context tenses, if present and easy to do. Continue missing. Keep eye wide open while missing. Do not not affected area.       Present tenses         3HS       Page 2/12       EN         - NitriVer <sup>4</sup> 2 Nitrite Reagent       Revision Date 01-Mar-2021       211         end for safe handling       Andle in accordance with good industrial hygiene and safety practice. Avoid contact with defere reces.       Ski         and reset handling       Market contrainers lightly closed in a dry, cool and well-ventilated place. Keep out of the reach of diafere. Since bodied up.       Em         to rashe storage. Including any incompatibilities       Em       Em         Conditions       Kaep containers lightly closed in a dry, cool and well-ventilated place. Keep out of the reach of diafere. Since bodied up.       Pres         binds       Ski 2, containers lightly closed in a dry, cool and well-ventilated place. Keep out of the reach of diafere. Since bodied up.       Pres         binds       Ski 2, containers lightly closed in a dry, cool and well-ventilated place. Keep out of the reach of diafere. Since boded up.       Pres			_						
scicition of finit all measures         meral advice       Show this safety idata sheet to the doctor in attendance. Immediate medical attention is required.         statation       Renove to fresh air. Get medical attention. Rime attendance. Immediate medical attention is required.         e contact       Git immediate medical advice attention. Rime immediately if symptoms occur.         contact       Continue rimsing. Reep eye wide open while rimsing. Do not rub affected area.         1 / HOHS       Page 2/12	and find id measures     Media       ubvice     Show this safely data sheet to the doctor in attendance. Immediate medical attention is required.     Media       n     Remove to freeh air. Get medical attention immediately if symptoms occur.     Pre- and       net     Get immediate medical advicationton. Rines mendiately with protoms occur. The eyelicits, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while mining. Do not rub affected area.     Pre- and       HS     Pege 2 / 12     EN       - NitriVer <sup>0</sup> 2 Nitrite Reagent     Revision Date 01-Mar-2021     211       - not cash andling     Ski     Ski     Ski       n safe handling     Mean occutantiated obting and wash before rease.     Ski       n for safe handling     Keep containers lightly closed in a dry, cool and well-ventilated place. Keep out of the reach of chaldren. Store locked up.     The       Notaria Stores locked up.     The instruction occutantiated obting in the instruction occutantiated place. Keep out of the reach of chaldren. Store locked up.     The       Image: Storego. Instruction occutantiated obting in the instruction occutantiated place. Keep out of the reach of chaldren. Store locked up.     The       Image: Storego. Instruction occutantiated obting in the instruction occutantiated place. Keep out of the reach of chaldren. Store locked up.     The       Image: Storego. Instruction occutantiated obting in the instruction occutantiated place in the occutantin the instruction occutantiated place. Keep out				4. FIRST AID M	EASURES				
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Vice on safe handling       Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse.         Inditions for safe storage. Including any incompatibilities         orage Conditions       Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Store locked up.         8. EXPOSURE CONTROLS/PERSONAL PROTECTION         Introl parameters_         posure Limits         Chemical name       Alberta OEL       British Columbia       Manitoba OEL       New Foundland & Labrador OEL         Lubric acid, iron(2+) sait       TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> Clinicia name       Northwest       Nova Scotia OEL       Nunavut OEL       Ontario TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> (2:1), compound with .2:ethanediamine (1:1)       TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> (2:1), compound with .2:ethanediamine (1:1)       TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> (2:1), compound with .2:ethanediamine (1:1)       TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> (2:1), compound with .2:ethanediamine (1:1)       TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> <td>as as fe handling       Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Take off contact with skin, eyes or clothing and wash before reuse.       Ger         as for safe storage, including any incompatibilities       Em         Conditions       Keep containers lightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Store locked up.       The         8. EXPOSURE CONTROLS/PERSONAL PROTECTION       Infig         mical name       Alberta OEL       British Columbia       New Foundland &amp; Columbia         of linits       OEL       New Foundland &amp; Columbia       Ph         origin (1)       TWA: 1 mg/m<sup>3</sup>       TWA: 1 mg/m<sup>3</sup>       TWA: 1 mg/m<sup>3</sup>       TWA: 1 mg/m<sup>3</sup>         origin (1)       STEL: 2 mg/m<sup>3</sup>       TWA: 1 mg/m<sup>3</sup>       TWA: 1 mg/m<sup>3</sup>       WA: 1 mg/m<sup>3</sup>         origin (1)       STEL: 2 mg/m<sup>3</sup>       TWA: 1 mg/m<sup>3</sup>       TWA: 1 mg/m<sup>3</sup>       TWA: 1 mg/m<sup>3</sup>         origin (1)       STEL: 2 mg/m<sup>3</sup>       TWA: 1 mg/m<sup>3</sup>       TWA: 1 mg/m<sup>3</sup>       STEL: 2 mg/m<sup>3</sup>         origin (1)       STEL: 2 mg/m<sup>3</sup>       TWA: 1 mg/m<sup>3</sup>       TWA: 1 mg/m<sup>3</sup>       STEL: 2 mg/m<sup>3</sup>         origin (1)       STEL: 2 mg/m<sup>3</sup>       TWA: 1 mg/m<sup>3</sup>       TWA: 1 mg/m<sup>3</sup>       STEL: 2 mg/m<sup>3</sup>         origin (1)       St</td> <td>10/569 - Nitriver® 2 P</td> <td>Nitrite Reag</td> <td>jent</td> <td></td> <td></td> <td>Re</td> <td>vision I</td> <td>Date 01-Mar-2021</td> <td>210</td>	as as fe handling       Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Take off contact with skin, eyes or clothing and wash before reuse.       Ger         as for safe storage, including any incompatibilities       Em         Conditions       Keep containers lightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Store locked up.       The         8. EXPOSURE CONTROLS/PERSONAL PROTECTION       Infig         mical name       Alberta OEL       British Columbia       New Foundland & Columbia         of linits       OEL       New Foundland & Columbia       Ph         origin (1)       TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> origin (1)       STEL: 2 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> WA: 1 mg/m <sup>3</sup> origin (1)       STEL: 2 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> origin (1)       STEL: 2 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> STEL: 2 mg/m <sup>3</sup> origin (1)       STEL: 2 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> STEL: 2 mg/m <sup>3</sup> origin (1)       STEL: 2 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> STEL: 2 mg/m <sup>3</sup> origin (1)       St	10/569 - Nitriver® 2 P	Nitrite Reag	jent			Re	vision I	Date 01-Mar-2021	210
skin, eyes or clothing, Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse.       inditions for safe storage, including any incompatibilities       porage Conditions       Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Store locked up.       8. EXPOSURE CONTROLS/PERSONAL PROTECTION       Introl parameters_       posure Limits       Chemical name     Alberta OEL       British Columbia     Manitoba OEL       New Foundand & Labrador OEL       Indiric acid, inn(2+) sait     TWA: 1 mg/m <sup>3</sup> Chemical name     Northwest       Nova Scotia OEL     Nunavut OEL       Ontario TWA: 1 mg/m <sup>3</sup> Chemical name     Northwest       Infuric acid, inn(2+) sait     TWA: 1 mg/m <sup>3</sup> Chemical name     Quebec OEL       Safkfur acid, inn(2+) sait (2+1), ong/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> </td <td>skin, eyes or clothing. Do not eat, drink or smoke when using this product. Take off containnated clothing and wash before reuse.</td> <td>recautions for safe hand</td> <td>dling</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>Ski</td>	skin, eyes or clothing. Do not eat, drink or smoke when using this product. Take off containnated clothing and wash before reuse.	recautions for safe hand	dling							Ski
Contaminated clothing and wash before reuse.         Inditions for safe storage. Including any incompatibilities         orage Conditions         Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Store locked up.         Support the contract of children. Store locked up.         Support to the contract of children. Store locked up.         Support to the contract of children. Store locked up.         Support to the contract of children. Store locked up.         Chemical name       Alborta OEL       New Brunswick New Foundland & Labrador OEL         Chemical name       Alborta OEL       NutX: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> Chemical name       Northwest       Nova Scotia OEL       Nunavut OEL       Ontario TWA       Prince Edward Island OEL         Lifuric acid, iron(2+) salt       TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> Chemical name       Northwest         TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> Chemical name       Northwest         TWA: 1 mg/m <sup>3</sup> Ch	to for safe storage, including, any incompatibilities       Em         Conditions       Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Store locked up.       The         Representation       Representation       The         Representation       Representation       The         Representation       Representation       The         Representation       Representation       Montoparticle         Representation       Representation       Montoparticle       Provementation         Statistic       British Columbia       Manitoba OEL       New Foundland & Labrador OEL       Provementation         adid, iron(2+) salt       TWA: 1 mg/m³       TWA: 1 mg/m³       TWA: 1 mg/m³       TWA: 1 mg/m³       Montoparticle         90-70%       Torritories OEL       Nova Scotia OEL       Nouravut OEL       Ontario TWA       Prince Edward         Boil       Torritories OEL       Nova Scotia OEL	Advice on safe handling	ŀ	Handle i	n accordance with go	od industrial hygiene	and safety	practice.	Avoid contact with	-
Meep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Store locked up.         Steep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Store locked up.         Steep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Store locked up.         Steep colspan="2">Steep colspan="2">Control place colspan="2">Control place colspan="2">Steep colspan="2">Control place colspan="2"        Control place colsp	Conditions         Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Store locked up.         Em Alberta OEL         CONTROLS/PERSONAL PROTECTION         Infa           Arameters		s	skin, eye contamii	es or clotning. Do not nated clothing and wa	eau, arink or smoke u ash before reuse.	wrien using	uns prodi	uci. Take off	Gei
Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Store locked up.         B. EXPOSURE CONTROLS/PERSONAL PROTECTION         International Control of Cont	Conditions       Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Store locked up.       The         Report of children. Store locked up.       Infig         Report of the reach of children. Store locked up.       Infig         Remote the reach of children. Store locked up.       Infig         Remote the reach of children. Store locked up.       Phy         Arrameters	Conditions for safe stora	ge, including	any in	compatibilities					Fn
Superior Limits         Chemical name       Alberta OEL       British Columbia       Manitoba OEL       New Brunswick       New Foundland & Labrador OEL         Urfuric acid, iron(2+) salt       TWA: 1 mg/m³         2-ethanediamine (1:1)       60 - 70%       Nova Scotia OEL       Nunavut OEL       Ontario TWA       Prince Edward         Lifuric acid, iron(2+) salt       TWA: 1 mg/m³       TWA: 1 mg/m³       TWA: 1 mg/m³       TWA: 1 mg/m³         Chemical name       Northwest       Nova Scotia OEL       Nunavut OEL       Ontario TWA       Prince Edward         Lifuric acid, iron(2+) salt       TWA: 1 mg/m³       TWA: 1 mg/m³       TWA: 1 mg/m³       TWA: 1 mg/m³         2-ethanediamine (1:1)       60 - 70%       STEL: 3 mg/m³       TWA: 1 mg/m³       TWA: 1 mg/m³         Chemical name       Quebec OEL       Saskatchewan OEL       Yukon OEL       STEL: 2 mg/m³         Suffuric acid, iron(2+) salt (2:1), on compound with 1, 2-ethanediamine       TWA: 1.0 mg/m³       TWA: 1 mg/m³       STEL: 2 mg/m³       STEL: 2 mg/m³         (1:1)       60 - 70%       TWA: 1 mg/m³       TWA: 1 mg/m³       STEL: 3 mg/m³       STEL: 3 mg/m³       STEL: 3 mg/m³       STEL: 3	The second seco	Storage Conditions	ŀ	Keep co	ntainers tightly closed	d in a dry, cool and w	ell-ventilate	d place. I	Keep out of the reach	
Chemical name       Alberta OEL       British Columbia       Manitoba OEL       New Brunswick       New Foundland & Labrador OEL         Ulfuric acid, inon(2+) salt       TWA: 1 mg/m³         2:ethanediamine (1:1)       60 - 70%       Nova Scotia OEL       Nunavut OEL       Ontario TWA       Prince Edward         Lifuric acid, inon(2+) salt       TWA: 1 mg/m³       TWA: 1 mg/m³       TWA: 1 mg/m³       TWA: 1 mg/m³         Chemical name       Northwest       Nova Scotia OEL       Nunavut OEL       Ontario TWA       Prince Edward         Lifuric acid, inon(2+) salt       TWA: 1 mg/m³       TWA: 1 mg/m³       TWA: 1 mg/m³       TWA: 1 mg/m³         2:0:1) compound with , 2:ethanediamine (1:1)       STEL: 3 mg/m³       TWA: 1 mg/m³       TWA: 1 mg/m³         60 - 70%       TWA: 1.0 mg/m³       TWA: 1.0 mg/m³       TWA: 1 mg/m³       STEL: 2 mg/m³         Chemical name       Quebec OEL       Saskatchewan OEL       Yukon OEL       STEL: 2 mg/m³         Suffuric acid, inon(2+) salt (2+1), omg/m³       TWA: 1.0 mg/m³       TWA: 1 mg/m³       STEL: 2 mg/m³         0:0 - 70%       TWA: 1 mg/m³       TWA: 1 mg/m³       TWA: 1 mg/m³       STEL: 3 mg/m³	Info       arameters		, c		s isonoù up.					The
Chemical name       Alberta OEL       British Columbia       Manitoba OEL       New Brunswick       New Foundland & Labrador OEL         Ulfuric acid, inon(2+) salt       TWA: 1 mg/m³         2:ethanediamine (1:1)       60 - 70%       Nova Scotia OEL       Nunavut OEL       Ontario TWA       Prince Edward         Lifuric acid, inon(2+) salt       TWA: 1 mg/m³       TWA: 1 mg/m³       TWA: 1 mg/m³       TWA: 1 mg/m³         Chemical name       Northwest       Nova Scotia OEL       Nunavut OEL       Ontario TWA       Prince Edward         Lifuric acid, inon(2+) salt       TWA: 1 mg/m³       TWA: 1 mg/m³       TWA: 1 mg/m³       TWA: 1 mg/m³         2:0:1) compound with , 2:ethanediamine (1:1)       STEL: 3 mg/m³       TWA: 1 mg/m³       TWA: 1 mg/m³         60 - 70%       TWA: 1.0 mg/m³       TWA: 1.0 mg/m³       TWA: 1 mg/m³       STEL: 2 mg/m³         Chemical name       Quebec OEL       Saskatchewan OEL       Yukon OEL       STEL: 2 mg/m³         Suffuric acid, inon(2+) salt (2+1), omg/m³       TWA: 1.0 mg/m³       TWA: 1 mg/m³       STEL: 2 mg/m³         0:0 - 70%       TWA: 1 mg/m³       TWA: 1 mg/m³       TWA: 1 mg/m³       STEL: 3 mg/m³	Info       arameters		8. EXPOS	SURE	CONTROLS/PI	ERSONAL PRO	DTECTIO	N		ı 🗆
Desure Limits         Alberta OEL         British Columbia OEL         Manitoba OEL         New Brunswick OEL         New Foundland & Labrador OEL           ulfuric acid, iron(2+) salt (2:1), compound with .2-ethanediamine (1:1) 60 - 70%         TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> Chemical name (2:1), compound with .2-ethanediamine (1:1) 60 - 70%         Nova Scotia OEL         Nunavut OEL         Ontario TWA         Prince Edward Island OEL           Chemical name (1:1) 60 - 70%         TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> Chemical name (1:1) 60 - 70%         Cuebec OEL         Saskatchewan OEL         Yukon OEL         Yukon OEL           Chemical name (1:1) 60 - 70%         Cuebec OEL         Saskatchewan OEL         Yukon OEL         Yukon OEL           Sulfuric acid, iron(2+) salt (2:1), compound with 1, 2-ethanediamine (1:1) 60 - 70%         TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> STEL: 2 mg/m <sup>3</sup> Chemical name         ACGH TLV         OSHA PEL (vacated) TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> STEL: 2 mg/m <sup>3</sup>	Limits       Physical state       Physical stat	Control parameters								
Chemical name         Alberta OEL OEL         British Columbia OEL         Manitoba OEL OEL         New Brunswick New Foundland & Labrador OEL           ufuric acid, iron(2+) sait (2:1) compound with 2:060-70%         TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> Chemical name         Northwest Territories OEL         Nova Scotia OEL         Nunavut OEL         Ontario TWA         Prince Edward Island OEL           2(1) compound with 2:01 compound with 3:2:01 compound with 3:2:01 compound with 3:2:01 compound with 3:2:01 compound with 2:01 compound with 2:01 compound with 3:01 compound with 1:01 compound with 3:01 compound with 1:01 compound with 3:01 compound with 1:10 compound with 1:20 compound with 1:20 compound with 1:20 compound with 3:01 compound with 1:20	mical name         Alberta OEL         British Columbia         Manitoba OEL         New Brunswick         New Foundation & OEL         Detect         Detect <td>Exposure Limits</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>Ap</td>	Exposure Limits								Ap
Chemical name         Outbody         Nova         Scotia         Numerical         TWA: 1 mg/m³         TWA:	Lacid, Lino(2+) salt neediamine (1:1) 30 - 70%         TWA: 1 mg/m <sup>3</sup> STEL: 2 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> STEL: 2 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> Mol           Boil         Territories OEL Torritories OEL         Northwest Territories OEL         Northwest TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> Eva Eva Eva SteL: 3 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> Eva Eva Eva Eva SteL: 3 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> Eva Eva Eva Eva Eva Eva Eva Eva Eva Eva	Chemical name	Alberta	OEL		Manitoba OEL				1
2-efficiency         Northwest Territories OEL         Nova Scotia OEL         Nunavut OEL         Ontario TWA         Princa Edward Island OEL           Unitric acid, iron(2+) salt         TVA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> 2(21) compound with .2-ethanediamine (11) 60 - 70%         STEL: 3 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> SUfuric acid, iron(2+) salt (2:1), compound with .2-ethanediamine (1:1) 60 - 70%         TWA: 1.0 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> STEL: 2 mg/m <sup>3</sup> SUfuric acid, iron(2+) salt (2:1), compound with .2-ethanediamine (1:1) 60 - 70%         TWA: 1.0 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> STEL: 2 mg/m <sup>3</sup> SUBfuric acid, iron(2+) salt (2:1), compound with .2-ethanediamine (1:1) 60 - 70%         TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> STEL: 3 mg/m <sup>3</sup> SUBfuric acid, iron(2+) salt (2:1), compound with .2-ethanediamine (1:2)         TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> STEL: 3 mg/m <sup>3</sup>	Image: Inclusion (1:1)         Northwest         Nova Scotia OEL         Nunavut OEL         Ontario TWA         Prince Edward         Mel           30 - 70%         Territories OEL         Nunavut OEL         Ontario TWA         Prince Edward         Boi           acdi, ton(2+) sall         TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> WA: 1 mg/m <sup>3</sup> WA: 1 mg/m <sup>3</sup> Wa: 1 mg/m <sup>3</sup> Eva           son-roys         STEL: 3 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> Eva         Vap           10 - 70%         Ouebec OEL         Saskatchewan OEL         Yukon OEL         Rel	Sulfuric acid, iron(2+) salt	TWA: 1 m	ng/m³	TWA: 1 mg/m <sup>3</sup>	TWA: 1 mg/m <sup>3</sup>			TWA: 1 mg/m <sup>3</sup>	
Chemical name         Northwest Terrifories OEL         Nova Scotia OEL         Nunavut OEL         Ontario TWA         Prince Edward Island OEL           Ultric acid, iron(24) salt         TVAL: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> (2:1) compound with 60 - 70%         STEL: 3 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> Chemical name         Quebec OEL         Saskatchewan OEL         Yukon OEL           Suffuric acid, iron(24) salt (2:1), compound with 1, 2ethanediamine (1:1)         TWA: 1.0 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> STEL: 3 mg/m <sup>3</sup> Chemical name         Quebec OEL         Saskatchewan OEL         Yukon OEL         Yukon OEL           Suffuric acid, iron(24) salt (2:1), compound with 1, 2ethanediamine (1:1)         TWA: 1.0 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> STEL: 3 mg/m <sup>3</sup> 60 - 70%         Variant 1, 2ethanediamine (1:1)         TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> STEL: 3 mg/m <sup>3</sup> 60 - 70%         Variant 1, 2ethanediamine (1:1)         TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> Sulfuric acid, iron(24) salt (2:1), compound with 1, 2ethanediamine         ACGH TLV         OSHA PEL         NIOSH	Chemical name         Northwest Territories OEL         Nova Scotia OEL         Nunavut OEL         Ontario TWA         Prince Edward Island OEL         Mei           compound with endiamine (1:1)         TWA: 1 mg/m <sup>3</sup> WA: 1 mg/m <sup>3</sup> Eve           50 - 70%         Ouebec OEL         Saskatchewan OEL         Yukon OEL         Rei         Eve         Vag           chemical name         Ouebec OEL         Saskatchewan OEL         Yukon OEL         Rei         Sp         FURA: 1 mg/m <sup>3</sup> Sp           60 - 70%         TWA: 1 0 mg/m <sup>3</sup> STEL: 3 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> Sp         Sp           Chemical name         ACGiH TLV         OSHA PEL         NIOSH         Co         Co         Co         Co         Sp           60 - 70%         TWA: 1 mg/m <sup>3</sup> Fe         TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> Fe         Sp         Sp           60 - 70%         Finanediamine         TWA: 1 mg/m <sup>3</sup> Fe         Sp         Sp         Sp         Sp	1,2-ethanediamine (1:1)			SIEL: 2 mg/m <sup>3</sup>					
Chemical name         Territories OEL         Cite Cold         Number OEL         Number OEL         Island OEL	Instantantia         Territories OEL         Note Control CL         Note Control CL         Note Control CL         Island OEL         Boil           compound with mediamine (1:1)         TWA: 1 mg/m <sup>3</sup> Eve         Eve         Eve         Second Seco							-		- · ·
Chemical name         Quebec OEL         Saskatchewan OEL         Yukon OEL           Suffuric acid, iron(2+) sait (2+1), compound with (1:1) (2+th and pima)         TWA: 1 mg/m³         TWA: 1 mg/m³         TWA: 1 mg/m³           60 - 70%         TWA: 1 mg/m³         TWA: 1 mg/m³         TWA: 1 mg/m³         TWA: 1 mg/m³           Chemical name         Quebec OEL         Saskatchewan OEL         Yukon OEL           Suffuric acid, iron(2+) sait (2+1), compound with 1, 2-ethanediamine (1:1)         TWA: 1 mg/m³         STEL: 3 mg/m³         TWA: 1 mg/m³           60 - 70%         STEL: 3 mg/m³         TWA: 1 mg/m³         TWA: 1 mg/m³         STEL: 3 mg/m³           Chemical name         ACGIH TLV         OSHA PEL         NIOSH           Sulfuric acid, iron(2+) sait (2+1), inclusion         TWA: 1 mg/m³         TWA: 1 mg/m³           Sulfuric acid, iron(2+) sait (2+1), inclusion         TWA: 1 mg/m³         TWA: 1 mg/m³	Lacki, tron(2+) salt         TWA: 1 mg/m <sup>3</sup> Spi		Territories	s OEL					Island OEL	
Chemical name         Quebec OEL         Saskatchewan OEL         Yukon OEL           Sulfuric acid, iron(2+) salt (2+1), compound with 1,2-ethanediamine (1:1) 60 - 70%         TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> STEL: 2 mg/m <sup>3</sup> Chemical name         ACGIH TLV         OSHA PEL         NIOSH           Sulfuric acid, iron(2+) salt (2+1), 60 - 70%         TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> Chemical name         ACGIH TLV         OSHA PEL         NIOSH           Sulfuric acid, iron(2+) salt (2+1), 1.2-ethanediamine         TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup>	Chemical name         Quebec OEL         Saskatchewan OEL         Yukon OEL         Rei           05 - 70%         TWA: 1 mg/m³         STEL: 2 mg/m³         STEL: 2 mg/m³         Para           06 - 70%         TWA: 1.0 mg/m³         TWA: 1 mg/m³         STEL: 2 mg/m³         Sp           06 - 70%         TWA: 1 mg/m³         STEL: 2 mg/m³         Sp         Para           60 - 70%         Stel: 3 mg/m³         TWA: 1 mg/m³         Soil         Conclasting         Soil           1 caidi, iron[2+) salt [2:1), ind with 1,2-ethanediamine (1:1)         TWA: 1 mg/m³ Fe         (vacated) TWA: 1 mg/m³         TWA: 1 mg/m³ Fe         Conclasting           60 - 70%         TWA: 1 mg/m³ Fe         (vacated) TWA: 1 mg/m³         TWA: 1 mg/m³ Fe         Data	Sulfuric acid, iron(2+) salt (2:1), compound with	TWA: 1 m STEL: 3 n	ng/m <sup>3</sup> ng/m <sup>3</sup>	TWA: 1 mg/m <sup>3</sup>		TWA: 1	mg/m <sup>3</sup>		
Chemical name         Quebec OEL         Saskatchewan OEL         Yukon OEL           Sulfuric acid, iron(2+) satl (2:1), compound with 1, 2-ethanediamine         TWA: 1.0 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> STEL: 2 mg/m <sup>3</sup> (1:1) 60 - 70%         STEL: 3 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> Chemical name         ACGIH TLV         OSHA PEL         NIOSH           Suffuric acid, iron(2+) satl (2:1), Compound with 1, 2-ethanediamine         TWA: 1 mg/m <sup>3</sup> Fe         (vacated) TWA: 1 mg/m <sup>3</sup>	Chemical name         Quebec OEL         Saskatchewan OEL         Yukon OEL         Rei           is add, iron(2+) sall (2.1), and with 1.2-ethanediamine (1:1)         TVA: 1.0 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> STEL: 2 mg/m <sup>3</sup> Spr           Chemical name         ACGIH TLV         OSHA PEL         NIOSH         Soid Code         Soid           Chemical name         ACGIH TLV         OSHA PEL         NIOSH         Code         Aut           Ind with 1.2-ethanediamine (1:1)         TWA: 1 mg/m <sup>3</sup> Fe         (vacated) TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> Fe         Quebec OSHA PEL         NIOSH           60 - 70%         Dyr         Dyr         Dyr         Dyr         Dyr         Dyr	1,2-ethanediamine (1:1)								
Sulfuir acid, iron(24) sati (2:1), compound with 1,2-ethanediamine         TWA: 1.0 mg/m³ TWA: 1 mg/m³ STEL: 3 mg/m³ TWA: 1 mg/m³ STEL: 3 mg/m³ TWA: 1 mg/m³           Chemical name         ACGIH TLV         OSHA PEL         NIOSH           Sulfuir acid, iron(24) sati (2:1), Compound with 1,2-ethanediamine         TWA: 1 mg/m³ TWA: 1 mg/m³         TWA: 1 mg/m³ TWA: 1 mg/m³	ic add, icno[2+) salt [2:1, nd with 1,2-ethanediamine 60 - 70%         TWA: 1 mg/m <sup>3</sup> STEL: 3 mg/m <sup>3</sup> STEL: 2 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> SPP           Chemical name         ACGIH TLV         OSHA PEL         NIOSH         Par           Chemical name         ACGIH TLV         OSHA PEL         NIOSH         Soil Code Code         Soil           Ind with 1,2-ethanediamine (1:1)         TWA: 1 mg/m <sup>3</sup> Fe         (vacated) TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> Fe         Data           60 - 70%         Data         TWA: 1 mg/m <sup>3</sup> Fe         Vacated) TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> Fe         Data		e		Quebec OFI	Saskatchowa	n OFI		Yukon OEI	_
(1:1) 60 - 70%         Control of the second se	(1:1) 60 - 70%         O         Par           Chemical name         ACGIH TLV         OSHA PEL         NIOSH           Cic acid, icn(2+) salt (2:1), ind with 1/2-ethanediamine (1:1)         TWA: 1 mg/m <sup>3</sup> Fe         (vacated) TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> Fe         Output           60 - 70%         Day         Day         Day         Day         Day         Day         Day	Sulfuric acid, iron(2+) s	alt (2:1),			TWA: 1 mg	/m <sup>3</sup>	S	TEL: 2 mg/m <sup>3</sup>	1
Chemical name         ACGIH TLV         OSHA PEL         NIOSH           Sulfuric acid, iron(2+) salt (2:1), compound with 1,2-ethanediamine         TWA: 1 mg/m <sup>3</sup> Fe         (vacated) TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup>	Chemical name         ACGIH TLV         OSHA PEL         NIOSH           To acid, icn(2+) salt (2:1), ind with 12-ethanediamine (1:1)         TWA: 1 mg/m <sup>3</sup> Fe         (vacated) TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> Fe         Aut           60 - 70%         Days         Days         Days         Days         Days	(1:1)	louianiine			STEL: 3 mg	prof=	1	no. i ing/ff*	
Chemical name ACGIN ILV OSHA PEL NIOSH Suffuric acid, incr(24) salt (2:1), TWA: 1 mg/m <sup>3</sup> Fe (vacated) TWA: 1 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> Fe compound with 1,2-ethanediamine	Chemical name         ACGINI ILV         OSHA PEL         NICSH         Cord Insol         Cord Aut           is add, inor(2*) salt (2:1), ind with 1,2-ethanediamine (1:1)         TWA: 1 mg/m <sup>3</sup> Fe         VAA: 1 mg/m <sup>3</sup> Fe         Aut           60 - 70%         Day         Day         Day         Day         Day			_		1		_		1
compound with 1,2-ethanediamine	und with 1,2-ethanediamine         Dec           60 - 70%         Dy	Sulfuric acid, iron(2+) s	alt (2:1),	T۱				TW		Co
	60 - 70% Dyr	compound with 1,2-ethar (1:1)	nediamine							
compound with 1,2-ethanediamine	nd with 1,2-etbanediamine (1:1) 60 - 70%	Sulfuric acid, iron(2+) s compound with 1,2-ethar (1:1) 60 - 70% Chemical name	elt (2:1), nediamine	Т	WA: 1.0 mg/m <sup>3</sup> ACGIH TLV	TWA: 1 mg STEL: 3 mg OSHA PE	/m <sup>3</sup> /m <sup>3</sup>	S' T	TEL: 2 mg/m <sup>3</sup> WA: 1 mg/m <sup>3</sup> NIOSH	]
	60 - 70%	(1:1)	nediamine							

Skin contact	Wash off immediately with soap and plenty of water for at least 15 minutes. Get medical attention if irritation develops and persists.							
Ingestion	Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Call a physician.							
Self-protection of the first aider	Avoid contact with skin, eyes or clothing. Wear personal protective clothing (see section 8).							
Most important symptoms and effe	s, both acute and delayed							
Symptoms	Burning sensation.							
Indication of any immediate medical attention and special treatment needed								
Note to physicians	Treat symptomatically.							
	5. FIRE-FIGHTING MEASURES							
Suitable Extinguishing Media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.							
Unsuitable Extinguishing Media	Caution: Use of water spray when fighting fire may be inefficient.							
Specific hazards arising from the chemical	No information available.							
Hazardous combustion products	Nitrogen oxides. Sulfur oxides. Carbon monoxide. Carbon dioxide (CO2).							
Special protective equipment for fire-fighters	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.							
	6. ACCIDENTAL RELEASE MEASURES							
Personal precautions, protective ed	uipment and emergency procedures							
WHMIS Notice	Only persons properly qualified to respond to an emergency involving hazardous substances should respond to a spill involving chemicals. See Section 13, Special Instructions for disposal assistance.							
Personal precautions	Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. Ensure adequate ventilation.							
Other Information	Refer to protective measures listed in Sections 7 and 8.							
Environmental precautions								
Environmental precautions	Prevent further leakage or spillage if safe to do so.							
Methods and material for containment and cleaning up_								
Methods for containment	Prevent further leakage or spillage if safe to do so.							
Methods for cleaning up	Pick up and transfer to properly labeled containers.							
Prevention of secondary hazards	Clean contaminated objects and areas thoroughly observing environmental regulations.							

7. HANDLING AND STORAGE

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Skin and body protection	Wear su clothing	clothing. Long slee	ved clothing.	Avoid contact with	ı eyes, skin an					
General Hygiene Considerations			eyes or clothing. We then using this prod		oves and eye/face	protection. Do				
Environmental exposure controls Local authorities should be advised if significant spillages cannot be containe allow into any sewer, on the ground or into any body of water.										
Thermal hazards	termal hazards None under normal processing.									
9.	PHYSI	CAL AND CH	EMICAL PRO	PERTIES	;					
Information on basic physical and	chemical	properties								
Physical state Appearance powder Odor None	Solid		Color Odor threshold	light green No data av	ailable					
Property		Values			Remarks • Met	nod				
Molecular weight		No data availat	ble							
рН	1.3		5% @ 20°C							
Melting point/freezing point		156 °C / 312	2.8 °F							
Boiling point / boiling range		No data available								
Evaporation rate		Not applicable								
/apor pressure		Not applicable								
Relative vapor density		No data available								
Specific gravity (water = 1 / air = 1)		2.06								
Partition Coefficient (n-octanol/wa	ter)	log Kow ~ 0								
Soil Organic Carbon-Water Partitio	n	log K∞ ~ 0								
Coefficient Autoignition temperature		No data available								
Decomposition temperature		No data available								
Dynamic viscosity		Not applicable								
Kinematic viscosity		Not applicable								
Solubility(ies)										
Water solubility										
Water solubility classification	_		solubility	W	ater Solubility Tem					
Soluble		> 100	0 mg/L		25 °C / 77 °I	F				
Solubility in other solvents					_					
Chemical Name Acid		classification	<u>Solub</u> > 1000		Solubility Te 25 °C /					

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Hand Protection

Eye/face protection

Legend

Appropriate engineering controls Engineering Controls Showers Eyewash stations Ventilation systems.

See section 16 for terms and abbreviations

Individual protection measures, such as personal protective equipment.
Respiratory protection
No protective equipment is needed under normal use conditions. If exposure limits are
exceeded or irritation is experienced, venitiation and evacuation may be required.

Wear suitable gloves. Impervious gloves. Tight sealing safety goggles.

Volatile Organic Compounds (VOC) Content Not applicable Chemical name

Steel Corrosion Rate Aluminum Corrosion Rate

Sulfuric acid, iron(2+) salt (2:1), compound with 1,2-ethanediamin

Explosive properties

Upper explosion limit Lower explosion limit Flammable properties Flash point

Flammability Limit in Air Upper flammability limit: Lower flammability limit:

**Oxidizing properties** Bulk density

Reactivity Not applicable

Chemical stability Stability

Hazardous polymerization None under normal processing

Conditions to avoid Conditions to avoid

Incompatible materials

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Sensitivity to Mechanical Impact None Sensitivity to Static Discharge None

Possibility of hazardous reactions Possibility of Hazardous Reactions None under normal processing.

Explosion data

(1:1) Potassium pyrosulfate

Other information Metal Corrosivity

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CAA (Clean Air Act)

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No data available No data available

No data available No data available

Not applicable

No data available No data available No data available

No data available

**10. STABILITY AND REACTIVITY** 

Stable under normal conditions

Volatile organic oounds (VOC) conte

No data available

No data a

CAS No

63589-59-3

7790-62-7

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	11. TOXICOLOGICAL INFORMATION
Information on likely route	s of exposure
Product Information	
Inhalation	May cause irritation of respiratory tract.
Eye contact	Severely irritating to eyes. Causes serious eye damage. May cause burns. May c irreversible damage to eyes.
Skin contact	Causes skin irritation.
Ingestion	Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Hai swallowed.
Symptoms	Redness. Burning. May cause blindness. May cause redness and tearing of the e

Ingredient Acute Toxicity Data No data available.

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Sulfuric acid, iron(2+) salt (2:1), compound with 1,2-ethanediamine (1:1) (60 - 70%) CAS#: 63589-59-3	Rat LD₅o	> 5454.316025 2 mg/kg	None reported	None reported	Vendor SDS
Potassium pyrosulfate (30 - 40%)	Rat LD50	2340 mg/kg	None reported	None reported	Vendor SDS

CAS#: 7790-62-7 Unknown Acute Toxicity 0 % of the mixture consists of ingredient(s) of unknown toxicity.

0 % of the mixture consists of ingredient(s) of unknown acute oral toxicity 0 % of the mixture consists of ingredient(s) of unknown acute idermal toxicity (dust/mist) 0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist) 0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)

Acute Toxicity Estimations (ATE)

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)	682.00
ATEmix (dermal)	No information available
ATEmix (inhalation-dust/mist)	No information available
ATEmix (inhalation-vapor)	No information available
· · · · · · · · · · · · · · · · · · ·	•

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Based on available data, the classification criteria are not met.

Product Carcinogenicity Data No data available.

Ingredient Carcinogenicity Data

Chemical name	CAS No	ACGIH	IARC	NTP	OSHA
Sulfuric acid, iron(2+) salt	63589-59-3	-	-	-	-
(2:1), compound with					
1,2-ethanediamine (1:1)					
Potassium pyrosulfate	7790-62-7	-	-		

#### Legend

ACGIH (American Conference of Governmental Industrial Hygienists)	Does not apply
IARC (International Agency for Research on Cancer)	Does not apply
NTP (National Toxicology Program)	Does not apply
OSHA (Occupational Safety and Health Administration of the US Department of	Does not apply
Labor)	

Germ cell mutagenicity Based on available data, the classification criteria are not met

Product Germ Cell Mutagenicity invitro Data No data available.

Ingredient Germ Cell Mutagenicity invitro Data

Product Germ Cell Mutagenicity invivo Data No data available.

Ingredient Germ Cell Mutagenicity invivo Data

Reproductive toxicity Based on available data, the classification criteria are not met.

Product Reproductive Toxicity Data

Ingredient Reproductive Toxicity Data No data available.

### Aspiration hazard Based on available data, the classification criteria are not met.

12. ECOLOGICAL INFORMATION Based on available data, the classification criteria are not met Ecotoxicity

0 % of the mixture consists of component(s) of unknown hazards to the aquatic

# Unknown Acute Toxicity

Product Ecological Data

Aquatic Acute Toxicity

Aquatic Chronic Toxicity

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None known based on information supplied.

Strong acids. Strong bases. Strong oxidizing agents.

ATEmix (inhalation-gas)	No information available
Skin corrosion/irritation Classification based on data available	for ingredients. Irritating to skin.
Product Skin Corrosion/Irritation Da	ita

No data available

Chemical name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Potassium pyrosulfate (30 - 40%) CAS#: 7790-62-7	None reported	None reported	None reported	None reported	Corrosive to skin	Vendor SDS

Chemical name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Potassium pyrosulfate (30 - 40%) CAS#: 7790-62-7	None reported	None reported	None reported	None reported	Corrosive to eyes	Vendor SDS

No data available.

Ingredient Sensitization Data

STOT - single exposure Based on available data, the classification criteria are not met.

Product Specific Target Organ Toxicity Single Exposure Data No data available.

Ingredient Specific Target Organ Toxicity Single Exposure Data No data available.

<u>STOT - repeated exposure</u> Based on available data, the classification criteria are not met.

Product Specific Target Organ Toxicity Repeat Dose Data No data available.

Ingredient Specific Target Organ Toxicity Repeat Exposure Data No data available.

Carcinogenicity

# Ingredient Skin Corrosion/Irritation Data No data available.

			dose	time		references and sources for data			
Potassium pyrosulfate (30 - 40%) CAS#: 7790-62-7	None reported	None reported	None reported	None reported	Corrosive to skin	Vendor SDS			
Serious eye damage/eye irritation									

Classification based on data available for ingredients. Causes burns. Risk of serious damage to eyes.

### Product Serious Eye Damage/Eye Irritation Data No data available.

## Ingredient Eye Damage/Eye Irritation Data No data available.

Chemical name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and sources for data			
Potassium pyrosulfate (30 - 40%) CAS#: 7790-62-7	None reported	None reported	None reported	None reported	Corrosive to eyes	Vendor SDS			
Respiratory or skin sensitization									

### Based on available data, the classification criteria are not met.

### Product Sensitization Data

Revision Date 01-Mar-2021

#### No data available.

### Ingredient Ecological Data

### Aquatic Acute Toxicity No data available.

Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Potassium pyrosulfate (30 - 40%) CAS#: 7790-62-7	96 hours	Oncorhynchus mykiss	LC <sub>50</sub>	420 mg/L	ERMA (New Zealands Environmental Risk Management Authority)
Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Potassium pyrosulfate (30 - 40%) CAS#: 7790-62-7	48 Hours	Daphnia magna	EC <sub>50</sub>	140 mg/L	ERMA (New Zealands Environmental Risk Management Authority)

 $\log\,K_{\rm ow}\sim 0$ 

Aquatic Chronic Toxicity No data available.

Persistence and degradability

### Product Biodegradability Data

Partition Coefficient (n-octanol/water)	
Bioaccumulation MATERIAL DOES NOT BIOACCUMULATE. Product Bioaccumulation Data No data available.	
NO Gata available.	

#### Mobility

Soil Organic Carbon-Water Partition Coefficient	log K₀₀ ~ 0
Other adverse effects	
No information available	

13. DISPOSAL CONSIDERATIONS				
Waste treatment methods				
Waste from residues/unused products	Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.			
Contaminated packaging	Do not reuse empty containers.			
	14. TRANSPORT INFORMATION			
Transport Canada	Not regulated			
TDG	Not regulated			
IATA_	Not regulated			

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#### 2107569 - NitriVer® 2 Nitrite Reagent

Revision Date 01-Mar-2021

NFPA	Health hazards - 3	Flammability - 0	Instability - 0	Physical and chemical properties -
HMIS	Health hazards - 3	Flammability - 0	Physical hazards - 0	Personal protection - X

NIOSH IDLH ACGIH NDF		Immediately Dangerous ACGIH (American Conf no data		ental Industrial Hygienists)
Legend - Sectio	n 8: EXPOSURE CO	NTROLS/PERSONAL F	ROTECTION	
TWA	TWA (time-weighte	ed average)	STEL	STEL (Short Term Exposure Limit)
MAC	Maximum Allowabl	e Concentration	Ceiling	Ceiling Limit Value
x	Listed		Vacated	These values have no official status. The only binding levels of contaminants are those listed in the final OSHA PEL. These lists are for reference purposes only. Please note that some reference state regulations of these "liberated" exposure limits in their state regulations.
SKN*	Skin designation		SKN+	Skin sensitization

Key or legend to abbreviations and acronyms used in the safety data sheet

SKN* RSP+ C M	Skin designation Respiratory sensitization Carcinogen mutagen	SKN+ ** R	Skin sensitization Hazard Designation Reproductive toxicant
Prepared By	Hac	Product Compliance Department	
Issue Date	01-1	ar-2021	
Revision Date	01-M	ar-2021	

Revision Note None

#### Disclaimer

USER RESPONSIBILITY: Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations.

THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED TO BE ACCURATE. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.

HACH COMPANY@2021

#### End of Safety Data Sheet

2107569 - NitriVer® 2 Nitrite Reagent

#### Revision Date 01-Mar-2021

IMDG	Not regulated
Note:	No special precautions necessary.
Additional information	

Additional information There is a possibility that this product could be contained in a reagent set or kit composed of various compatible dangerous goods. If the time is not in a reagent set or kit, the classification given above applies. If the time is part of a reagent set or kit the classification would change to the following: UN3316 Chemical Kit, Hazard Class 9, Packing Group II or III. If the time is not regulated, the Chemical Kit classification would close not apply.

#### 15. REGULATORY INFORMATION Regulatory information

National Inventories DSL/NDSL

Complies DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

#### International Inventories TSCA Complies

EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
KECL - Existing substances	Complies
PICCS	Complies
TCSI	Complies
AICS	Complies
NZIOC	Complies

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory EINECS/IFLINCS - European Inventory of Existing Onemical Substances/European List of Notified Chemical Substances ENCS - Japan Existing and Heve Chemical Substances IECSC - China Inventory of Existing Chemical Substances FICC3 - Philippines Inventory of Chemical Substances TCG3 - Taiwan Chemical Substances Internet Substances AICS - Australian Inventory of Chemical Substances AICS - Australian Inventory of Chemical Substances NZIGC - New Zealand Inventory of Chemical Substances

Canada - CEPA - Mercury Containing Products

### International Regulations

The Montreal Protocol on Not applicable Substances that Deplete the Ozone Layer

The Stockholm Convention on Persistent Organic Pollutants Not applicable

Not applicable The Rotterdam Convention

16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION

Special Comments

NFPA and HMIS Classifications

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## SAFETY DATA SHEET

Be	e Right <sup>™</sup>
Issue Date	14-Apr-2021

Issue Date 14-Apr-2021	Revision Date 10-Aug-2021	Version	5.7	Page	1 / 16	
	1. IDENTIFICATIO	N				
Product identifier Product Name	Buffer Solution pH 4.01 ± 0.02					
Other means of identification Product Code(s)	2283456					
Safety data sheet number	M00368					
Safety data sheet number     M00368       Recommended use of the chemical and restrictions on use Recommended Use     Analytical reagent. Buffer.       Uses advised against     None.       Restrictions on use     None.       Details of the supplier of the safety data sheet       Manufacturer Address Hach Company P.O.Box 389 Loveland, CO 80539 USA +1(970) 669-3050       Emergency telephone number +1(303) 623-5716 - 24 Hour Service						
	2. HAZARDS IDENTIFICATION					
Classification	Classification					
Regulatory Status	Regulatory Status					

Regulatory Status This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Not a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Hazards not otherwise classified (HNOC) Not applicable

### Label elements

Signal word None

Hazard statements The product contains no substances which at their given concentration, are considered to be hazardous to health

Other Hazards Known\_ None

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 Product Name
 Buffer Solution pH 4.01 ± 0.02

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3. COMPOSITION/INFORMATION ON INGREDIENTS

### Substance Not applicable

<u>Mixture</u>

Chemical Family	Mixture.				
Chem	ical name	CAS No	Percent Range	HMRIC #	
Form	aldehyde	50-00-0	<0.1%	-	
Me	thanol	67-56-1	<0.1%		
	4. FIRST AID MEASUR	ES			
Description of first aid measures					
General advice	No hazards which require special first aid measures. Use first aid treatment according to the nature of the injury.				
Inhalation	Remove to fresh air.				
Eye contact	Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids Consult a physician.				
Skin contact	Wash skin with soap and water.	Wash skin with soap and water.			
Ingestion	Clean mouth with water and drink after	vards plenty of water.			
Most important symptoms and effe	cts, both acute and delayed				
Symptoms	See Section 11 for additional Toxicological Information.				
Indication of any immediate medic	al attention and special treatment need	ed			
Note to physicians	Treat symptomatically.				
	5. FIRE-FIGHTING MEASU	JRES			
Suitable Extinguishing Media	Use extinguishing measures that are ap surrounding environment.	propriate to local circum	nstances and th	ie	
Unsuitable Extinguishing Media	Caution: Use of water spray when fighti	ng fire may be inefficien	t.		
Specific hazards arising from the chemical	No information available.				
Hazardous combustion products	This material will not burn.				
Special protective equipment for fire-fighters	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.				

#### 6. ACCIDENTAL RELEASE MEASURES Only persons properly qualified to respond to an emergency involving hazardous substances may respond to a spill according to federal regulations (OSHA 29 CFR U.S. Notice EN / AGHS Page 2 / 16

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1910.120(a)(v)) and per your company's emergency response plan and guidelines/procedures. See Section 13, Special Instructions for disposal assistance. Outside of the US, only persons properly qualified according to state or local regulations should respond to a spill involving chemicals.

### Personal precautions, protective equipment and emergency procedures

Personal precautions	Ensure adequate ventilation.				
Environmental precautions					
Environmental precautions	See Section 12 for additional ecological information.				
Methods and material for containm	ent and cleaning up				
Methods for containment	Prevent further leakage or spillage if safe to do so.				
Methods for cleaning up	Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Take up mechanically, placing in appropriate containers for disposal.				
Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.					
Reference to other sections	See section 8 for more information. See section 13 for more information.				
	7. HANDLING AND STORAGE				
Precautions for safe handling					
Advice on safe handling	Handle in accordance with good industrial hygiene and safety practice.				
Conditions for safe storage, includ	ing any incompatibilities				
Storage Conditions	Keep containers tightly closed in a dry, cool and well-ventilated place.				

Flammability class Not applicable

### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Chemical name	ACGIH TLV	OSHA PEL	NIOSH
Formaldehyde CAS#: 50-00-0	STEL: 0.3 ppm TWA: 0.1 ppm	TWA: 0.75 ppm (vacated) TWA: 3 ppm (vacated) STEL: 10 ppm (vacated) Ceiling: 5 ppm STEL: 2 ppm	IDLH: 20 ppm Ceiling: 0.1 ppm 15 min TWA: 0.016 ppm
Methanol CAS#: 67-56-1	STEL: 250 ppm TWA: 200 ppm S*	TWA: 200 ppm TWA: 260 mg/m <sup>3</sup> (vacated) TWA: 200 ppm (vacated) TWA: 200 ppm (vacated) STEL: 250 ppm (vacated) STEL: 325 mg/m <sup>3</sup> (vacated) SKN*	IDLH: 6000 ppm TWA: 200 ppm TWA: 260 mg/m <sup>3</sup> STEL: 250 ppm STEL: 325 mg/m <sup>3</sup>

### Appropriate engineering controls

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Product Code(s)         2283456         Product Name         Buffer Solution pH 4.01 ± 0.02           Issue Date         14-Apr-2021         Revision Date         10-Aug-2021           Version         5.7         Page         4 / 16								
Engineering Controls	Showers Eyewash stations Ventilation systems.							
Individual protection measures, such as personal protective equipment. Respiratory protection No protective equipment is needed under normal use conditions. If exposure limits a exceeded or irritation is experienced, ventilation and evacuation may be required.								
Hand Protection	Wear suitable gloves.							
Eye/face protection	Wear safety glasses with side shields (or goggles).							
Skin and body protection	No special protective equipment required.							
General Hygiene Considerations	Handle in accordance with good industrial hygiene and safety practice.							
Environmental exposure controls	Local authorities should be advised if significant spillages cannot be contained. Do not allow into any sewer, on the ground or into any body of water.							
Thermal hazards	None under normal processing.							
g	. PHYSICAL AND CHEMICAL PROPERTIES							
Information on basic physical and o	chemical properties							
Physical state Appearance aqueous solution Odor None	Liquid Color red Odor threshold No data available							
Property	Values Remarks • Method							
Molecular weight	No data available							
pH	4.01							
Melting point/freezing point	~ 0 °C / 32 °F							
Boiling point / boiling range	~ 100 °C / 212 °F							
Evaporation rate	0.99 (water = 1)							
Vapor pressure	17.027 mm Hg / 2.27 kPa at 20 °C / 68 °F							
Relative vapor density	0.62							
Specific gravity (water = 1 / air = 1)	1.002							
Partition Coefficient (n-octanol/wat	er) Not applicable							
Soil Organic Carbon-Water Partition	n Not applicable							
Autoignition temperature	No data available							
Decomposition temperature	No data available							
Dynamic viscosity	~ 1 cP (mPa s) at 20 °C / 68 °F							
Kinematic viscosity	~ 0.998 cSt (mm²/s) at 20 °C / 68 °F							
Solubility(ies)								
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Product Code(s) 2283456 Issue Date 14-Apr-2021 Version 5.7			Product Name Buff Revision Date 10-A Page 5 / 16		4.01 ± 0.02
Water solubility					
Water solubility classificati	ion	Water s	olubility	Water	Solubility Temperature
Completely soluble		> 1000			25 °C / 77 °F
Solubility in other solvents					
Chemical Name	Solub	ility classification	Solubility		Solubility Temperature
None reported	No infe	ormation available	No data availa	able	No information available
Other information					
Metal Corrosivity					
Steel Corrosion Rate Aluminum Corrosion Rate			No data available No data available		
Volatile Organic Compounds (N Not applicable See ingredients in					
Chemical name		CAS No	Volatile o		CAA (Clean Air Act)
		CAS No	compounds (V	OC) content	. ,
Formaldehyde		CAS No 50-00-0	compounds (V No data av	OC) content ailable	X
		CAS No	compounds (V	OC) content ailable	. ,
Formaldehyde		CAS No 50-00-0 67-56-1	compounds (V No data av	OC) content ailable	X
Formaldehyde Methanol Explosive properties Upper explosion limit		CAS No 50-00-0 67-56-1	Compounds (V) No data av 1009 No data available	OC) content ailable	X
Formaldehyde Methanol Explosive properties Upper explosion limit Lower explosion limit		CAS No 50-00-0 67-56-1	Compounds (V) No data av 1009 No data available	OC) content ailable	X
Formaldehyde Methanol Explosive properties Upper explosion limit Lower explosion limit Flammable properties		CAS No 50-00-0 67-56-1	compounds (Vr           No data av           1009           No data available           No data available	OC) content ailable	X
Formaldehyde Methanol Explosive properties Upper explosion limit Lower explosion limit Flammable properties Flash point Flammability Limit in Air Upper flammability Limit:		CAS No 50-00-0 67-56-1	compounds (W         No data av         1009         No data available         No data available         No data available         No data available         No data available	OC) content ailable	X

10. STABILITY AND REACTIVITY

Reactivity Not applicable.

Chemical stability Stable under normal conditions.

Explosion data Sensitivity to Mechanical Impact None. Sensitivity to Static Discharge None.

Possibility of hazardous reactions

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None under normal processing.

Hazardous polymerization None under normal processing.

Conditions to avoid None known based on information supplied.

## Hazardous decomposition products None known based on information supplied.

11. TOXICOLOGICAL INFORMATION				
Information on likely routes	of exposure			
Product Information				
Inhalation	No known effect based on information supplied.			
Eye contact	No known effect based on information supplied.			
Skin contact	No known effect based on information supplied.			
Ingestion	No known effect based on information supplied.			
Symptoms	No information available.			

# Acute toxicity Based on available data, the classification criteria are not met

# Product Acute Toxicity Data No data available.

Ingredient Acute Toxicity Data

Oral Exposure Route

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Formaldehyde (<0.1%) CAS#: 50-00-0	Rat LD50	100 mg/kg	None reported	None reported	GESTIS (Information System on Hazardous Substances of the German Social Accident Insurance)
Methanol (<0.1%)	None reported	None reported	None reported	None reported	No information available

#### Dermal Exposure Route

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Formaldehyde (<0.1%) CAS#: 50-00-0	Rabbit LD50	270 mg/kg	None reported	None reported	GESTIS (Information System on Hazardous Substances of the German Social Accident Insurance)
Methanol	None	None	None	None reported	No information available

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### Ingredient Eye Damage/Eye Irritation Data Test data reported below.

Chemical name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Formaldehyde (<0.1%) CAS#: 50-00-0	Rinse Test	Human	1 ppm	6 minutes	Corrosive to eyes	RTECS (Registry of Toxic Effects of Chemical Substances)
Methanol (<0.1%) CAS#: 67-56-1	OECD Test 439: In Vitro Skin Irritation: Reconstructed Human Epidermis (Rhe) Test Method		0.05 mL	24 hours	Not corrosive or irritating to eyes	ECHA (The European Chemicals Agency)

Respiratory or skin sensitization Based on available data, the classification criteria are not met.

### Product Sensitization Data No data available.

Ingredient Sensitization Data Test data reported below.

#### Skin Sensitization Exposure Route

Chemical name	Test method	Species	Results	Key literature references and
		-		sources for data
Formaldehyde (<0.1%) CAS#: 50-00-0	Patch test	Human	Confirmed to be a skin sensitizer	ERMA (New Zealands Environmental Risk Management Authority)
Methanol (<0.1%) CAS#: 67-56-1	OECD Test No. 406: Skin Sensitization	Guinea pig	Not confirmed to be a skin sensitizer	ECHA (The European Chemicals Agency)

### Respiratory Sensitization Exposure Route

[	Chemical name	Test method	Species	Results	Key literature references and sources for data
	Formaldehyde (<0.1%) CAS#: 50-00-0	IgE Specific Immune Response Test	Guinea pig	Confirmed to be a respiratory sensitizer	CICAD (Concise International Chemical Assessment Documents)

### STOT - single exposure Based on available data, the classification criteria are not met.

Product Specific Target Organ Toxicity Single Exposure Data No data available.

## Ingredient Specific Target Organ Toxicity Single Exposure Data Test data reported below.

#### Oral Exposure Route

Chemical name	Endpoint	Reported	Exposure	Toxicological effects	Key literature references and
	type	dose	time		sources for data
Formaldehyde	Human	70 mg/kg	None	Gastrointestinal	RTECS (Registry of Toxic
(<0.1%)	LDLo		reported	Kidney, Ureter, or Bladder	Effects of Chemical
CAS#: 50-00-0				Liver	Substances)
0/10//. 00 00 0				21701	Gabatanoooj

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(<0.1%) CAS#: 67-56-1	reported	reported	reported		
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### Inhalation (Dust/Mist) Exposure Route

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Formaldehyde (<0.1%) CAS#: 50-00-0	Rat LC50	0.578 mg/L	4 hours	None reported	LOLI
Methanol (<0.1%) CAS#: 67-56-1	None reported	None reported	None reported	None reported	No information available

#### Inhalation (Vapor) Exposure Route

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Methanol (<0.1%) CAS#: 67-56-1	None reported	None reported	None reported	None reported	No information available

Unknown Acute Toxicity 1.01% of the mixture consists of ingredient(s) of unknown toxicity.

#### Acute Toxicity Estimations (ATE)

ATEmix (oral)	No information available
ATEmix (dermal)	No information available
ATEmix (inhalation-dust/mist)	No information available
ATEmix (inhalation-vapor)	No information available
ATEmix (inhalation-gas)	No information available

Skin corrosion/irritation Based on available data, the classification criteria are not met. Product Skin Corrosion/Irritation Data

No data available.

# Ingredient Skin Corrosion/Irritation Data Test data reported below.

Chemical name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Formaldehyde (<0.1%) CAS#: 50-00-0	Standard Draize Test	Human	0.150 mg	72 hours	Corrosive to skin	RTECS (Registry of Toxic Effects of Chemical Substances)
Methanol (<0.1%) CAS#: 67-56-1	OECD Test 439: In Vitro Skin Irritation: Reconstructed Human Epidermis (Rhe) Test Method		None reported	20 hours	Not corrosive or irritating to skin	ECHA (The European Chemicals Agency)

## Serious eye damage/irritation Based on available data, the classification criteria are not met.

Product Serious Eye Damage/Eye Irritation Data No data available.

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				Other changes Ulcerated stomach Other changes	
Methanol (<0.1%) CAS#: 67-56-1	Human LDLo	143 mg/kg	None reported	Lungs, Thorax, or Respiration Dyspnea	RTECS (Registry of Toxic Effects of Chemical Substances)

Inhalation (Vapor) Exposure Route

Chemic	al name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Met	hanol	Human	300 mg/L	None	Lungs, Thorax, or	RTECS (Registry of Toxic
(<0	.1%)	TCLo	-	reported	Respiration	Effects of Chemical
CAS#:	67-56-1				Other changes	Substances)

STOT - repeated exposure Based on available data, the classification criteria are not met.

Product Specific Target Organ Toxicity Repeat Dose Data

# Ingredient Specific Target Organ Toxicity Repeat Exposure Data Test data reported below.

### Oral Exposure Route

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Methanol (<0.1%) CAS#: 67-56-1	Monkey	2340 mg/kg	3 days	None reported	ECHA (The European Chemicals Agency)

Inhalation (Vapor) Exposure Route

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Formaldehyde (<0.1%) CAS#: 50-00-0	Human TCLo	0.017 mg/L	0.5 days	Eye Lungs, Thorax, or Respiration	RTECS (Registry of Toxic Effects of Chemical Substances)
0.00#. 30-00-0				Lacrimation Other changes	Gubstances)

Carcinogenicity Based on available data, the classification criteria are not met.

# Product Carcinogenicity Data No data available.

Ingredient Carcinogenicity Data Test data reported below.

Chemical name	CAS No	ACGIH	IARC	NTP	OSHA
Formaldehyde	50-00-0	A1	Group 1	Known	Х
Methanol	67-56-1	-	-	-	-
	ance of Governmen	tal Industrial Hygi	vnioto)	Doos not apply	
CGIH (American Conference			enists)	Does not apply	
egend CGIH (American Conference) ARC (International Agence)	cy for Research on		enists)	Does not apply	
CGIH (American Conference	cy for Research on		enists)		
CGIH (American Conference)	cy for Research on		enists)	Does not apply	

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#### OSHA (Occupational Safety and Health Administration of the US Department of Labor) Does not apply

#### Inhalation (Vapor) Exposure Route

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Formaldehyde (<0.1%) CAS#: 50-00-0	Rat	15 mg/L	78 weeks	Olfaction Tumors	RTECS (Registry of Toxic Effects of Chemical Substances)

Germ cell mutagenicity Based on available data, the classification criteria are not met.

Product Germ Cell Mutagenicity invitro Data No data available.

## Ingredient Germ Cell Mutagenicity invitro Data Test data reported below.

Chemical name	Test	Cell Strain	Reported dose	Exposure time	Results	Key literature references and sources for data
Methanol (<0.1%)	DNA inhibition	Human lymphocyte	300 mmol/L	None reported	Positive test result for mutagenicity	RTECS (Registry of Toxic Effects of
CAS#: 67-56-1						Chemical
		1			1	Substances

### Product Germ Cell Mutagenicity invivo Data No data available.

### Ingredient Germ Cell Mutagenicity invivo Data Test data reported below.

#### Oral Exposure Route

Chemical name	Test	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Methanol	DNA damage	Rat	0.405 mg/kg	None	Positive test result for	RTECS (Registry
(<0.1%)	-			reported	mutagenicity	of Toxic Effects of
CAS#: 67-56-1						Chemical
						Substances)

#### Inhalation (Vapor) Exposure Route

Chemical name	Test	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Formaldehyde (<0.1%) CAS#: 50-00-0	Micronucleus test	Human	.000985 mg/L	8.5 years	Positive test result for mutagenicity	RTECS (Registry of Toxic Effects of Chemical Substances)

Reproductive toxicity Based on available data, the classification criteria are not met.

### Product Reproductive Toxicity Data

/ AGHS		P

Product Code(s) 2283 Issue Date 14-Apr-202 Version 5.7			Revisi		Buffer Solution 10-Aug-2021	pH 4.01 ± (	0.02
(<0.1%) CAS#: 50-00-0							Network)
Crustacea							
Chemical name	Exposure time	Sp	ecies E	ndpoint type	Reported dose		ature references and urces for data
Formaldehyde (<0.1%) CAS#: 50-00-0	48 Hours	Daph	nia pulex	EC50	5.8 mg/L		n European Ecologica Network)
Aquatic Chronic Toxic No data available.	ity						
Persistence and degra	dability						
Product Biodegradabil No data available.	ity Data						
Product Bioaccumulat No data available.	ion Data						
Partition Coefficient (n	-octanol/wa	ter)	Not ap	plicable			
Mobility							
Soil Organic Carbon-W	ater Partitic	n Coefficient	Not ap	plicable			
Other adverse effects No information available							
		13 DIS	SPOSAL CONSI	DERATIO	ONS		
		101 210					
Waste treatment metho Waste from residues/u products			n accordance with loo tal legislation.	cal regulati	ions. Dispose of	waste in a	ccordance with
Contaminated packagi	ng	Do not reuse	e empty containers.				
US EPA Waste Numbe	r	U122 U154					
Chemical name	F	CRA	RCRA - Basis f Listing	or	RCRA - D Seri Wastes	es	RCRA - U Series Wastes
Formaldehyde 50-00-0		J122	Included in was streams: K009, K K038, K040, K156,	010,	-		U122
Methanol		-	Included in waste s F039		-		U154

Special instructions for disposal

Adjust to a pH between 6 and 9 with an alkali, such as soda ash or sodium bicarbonate. If permitted by regulation. Open cold water tap completely, slowly pour the reacted material to the drain. Check with local municipal and state a uthorities and waste contractors for pertinent local information regarding the proper disposal of chemicals.

14. TRANSPORT INFORMATION

Not regulated Page 12/16

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DOT

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## Ingredient Reproductive Toxicity Data Test data reported below.

Oral Exposure Route

#### Toxicological effects Chemical name Key literature references and Endpoint Reported Exposure type Rat TDLo dose 4118 mg/kg time 10 days RTECS (Registry of Toxic Effects of Chemical Substances) Effects on Embryo or Fetus Methanol Specific Developmental Abnormalities Ear Eye Fetotoxicity (except death e.g. stunded fetus) (<0.1%) CAS#: 67-56-1 ted fetus) stur Urogenital System Inhalation (Dust/Mist) Exposure Route

#### Endpoint type Reported dose Exposure time Rat 0.0026 mg/L 22 days Key literature references and Chemical name Toxicological effects RTECS (Registry of Toxic Effects of Chemical Substances) type Rat TCLo Effects on Embryo or Fetus Fetotoxicity (except death e.g. stunted fetus) Methanol (<0.1%) CAS#: 67-56-

#### Inhalation (Vapor) Exposure Route

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Formaldehyde	Rat	40 mg/L	14 days	Effects on Embryo or Fetus	RTECS (Registry of Toxic
(<0.1%)	TCLo	-		Fetotoxicity (except death e.g.	Effects of Chemical
CAS# 50-00-0				stunted fetus)	Substances)

## Aspiration hazard Based on available data, the classification criteria are not met.

	12. ECOLOGICAL INFORMATION
Ecotoxicity	Based on available data, the classification criteria are not met.
Unknown aquatic toxicity	$0\ \%$ of the mixture consists of component(s) of unknown hazards to the aquatic environment.
Product Ecological Data	
Aquatic Acute Toxicity No data available.	
Aquatic Chronic Toxicity No data available.	
Ingredient Ecological Data	
Aquatic Acute Toxicity Test data reported below.	

#### Fish

Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Formaldehyde	96 hours	Morone saxatilis	LC50	6.7 mg/L	PEEN (Pan European Ecologica

Product Code(s) 2283456 Issue Date 14-Apr-2021 Version 5.7	Product Name Revision Date Page 13 / 16	<ul> <li>Buffer Solution pH 4.01 ± 0.02</li> <li>10-Aug-2021</li> </ul>
TDG	Not regulated	
IATA	Not regulated	
IMDG	Not regulated	
Note:	No special precautions necessary.	
Additional information		

### 15. REGULATORY INFORMATION

National Inventories TSCA DSL/NDSL

Complies Complies TSCA - United States Toxic Substances Control Act Section 8(b) Inventory DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

#### International Inventories

EINECS/ELINCS	Complies
ENCS	Does not comply
IECSC	Complies
KECL - Existing substances	Complies
PICCS	Complies
TCSI	Complies
AICS	Complies
NZIoC	Complies

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

EINEC.9714LINUS - EUropein Inventiory of Existing Johemical Substance EINGS - Japan Existing and New Chemical Substances IECSC - China Inventory of Existing Chemical Substances KECL - Korean Existing and Evaluated Chemical Substances TCSI - Taiwan Chemical Substances Inventory AUCS - Australian Inventory of Chemical Substances Nation - New Calandi Inventory of Chemical Substances Nation - New Calandi Inventory of Chemical Substances

US Federal Regulations

SARA 313 Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1996 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical name	SARA 313 - Threshold Values %
Formaldehyde (CAS #: 50-00-0)	0.1
Methanol (CAS #: 67-56-1)	1.0
SARA 311/312 Hazard Categories	
Acute health hazard	Yes
Chronic Health Hazard	No
	No
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act) This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 This product of CFR 122.42)

	Formaldehyde	96 hours	Morone saxa
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Product Name Buffer Solution pH 4.01 ± 0.02 Revision Date 10-Aug-2021 Page 14 / 16

Chemical name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Formaldehyde	100 lb	-	-	Х
50-00-0				
CERCLA This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive				
Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and				
Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level				
pertaining to releases of this material				

Chemical name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)	
Formaldehyde	100 lb	100 lb	RQ 100 lb final RQ	
50-00-0			RQ 45.4 kg final RQ	
Methanol	5000 lb	-	RQ 5000 lb final RQ	
67-56-1			RQ 2270 kg final RQ	
U.S Department of Homeland Security - Chemical Facility Anti-Terrorism Standards (CFATS) - Security Issues			S) - Security Issues	
Chemic	al name	U.S Department of Homelar Anti-Terrorism Standards		
Formaldehyde (<0.1%)		Release - Toxic (solution)		
(<0.17%) CAS#: 50-00-0				

#### US State Regulations 0-116-

California Proposition 65	
This product contains the following Proposition 65 chemicals	

5 1	
Chemical name	California Proposition 65
Formaldehyde (CAS #: 50-00-0)	Carcinogen
Methanol (CAS #: 67-56-1)	Developmental

WARNING: This product can expose you to chemicals including Formaldehyde, Methanol, which are known to the State of California to cause cancer or birth defects or reproductive harm. For more information, go to <u>http://www.P65Warnings.ca.gov</u>

U.S. State Right-to-Know Regulations

This product may contain substances regulated by state right-to-know regulations.

Chemical name	New Jersey	Massachusetts	Pennsylvania
Formaldehyde	Х	X	Х
50-00-0			
Methanol	Х	X	Х
67-56-1			

Special Comments

Chemical name	FIFRA	FDA
Methanol	180.0910	-

## 16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION

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safety programs in accordance with applicable hazard communication standards and regulations.

THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED TO BE ACCURATE. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.

HACH COMPANY@2021

End of Safety Data Sheet

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None

Additional information

Global Automotive Declarable Substance List (GADSL)

Global Automotive Declarable Substance List Classifications	Global Automotive Declarable Substance List Thersholds
Declarable Substance (FI) Prohibited Substance (FI)	0 % 0.1 %
Declarable Substance (LR) Prohibited Substance (LR)	
Declarable Substance (FI)	0.6 %
Prohibited Substance (FI)	0.1 %
Declarable Substance (LR)	
	Substance List Classifications Declarable Substance (FI) Prohibited Substance (FI) Declarable Substance (LR) Prohibited Substance (LR) Declarable Substance (FI) Prohibited Substance (FI)

#### NFPA and HMIS Classifications

NFP	A Health hazards - 0	Flammability - 0	Instability - 0	Physical and chemical properties -
HMI	B Health hazards - 0	Flammability - 0	Physical hazards - 0	Personal protection - X - I
Key or legend	to abbreviations and acronyms us	ed in the safety data she	et	
NIOSH IDLH ACGIH NDF			th mmental Industrial Hygien	ists)
TWA	TWA (time-weighted average)	STEL	- STEL (Short Term I	Exposure Limit)
MAC	Maximum Allowable Concentrat	ion Ceiling	Ceiling Limit Value	
x	Listed	Vacated	binding levels of co listed in the final OS for reference purpo some reference sta	no official status. The onl ntaminants are those SHA PEL. These lists are ses only. Please note tha te regulations of these e limits in their state

			regulations.
SKN* RSP+ C M	Skin designation Respiratory sensitization Carcinogen mutagen	SKN+ ** R	Skin sensitization Hazard Designation Reproductive toxicant
Prepared By	Hach Product C	Compliance Department	
Issue Date	14-Apr-2021		
Revision Date	10-Aug-2021		
Revision Note	None		
Disclaimer			
USER RESPON	SIBILITY: Each user should read an	d understand this info	ermation and incorporate it in individual site

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## SAFETY DATA SHEET

_			
e	Righ	t	

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	1. IDENTIFICATION	
Product identifier Product Name	Buffer Solution pH 7.00 ± 0.02	
Other means of identification Product Code(s)	2283556	
Safety data sheet number	M00369	
Safety data sheet number     M00369       Recommended Use of the chemical and restrictions on use Recommended Use     Laboratory reagent. Buffer.       Uses advised against     Consumer use.       Restrictions on use     For Laboratory Use Only.       Details of the supplier of the safety data sheet     Manufacturer Address       Hach Company P.O.Box 399 Loveland, CO 80539 USA +1(970) 669-3050     Emergency telephone number       Filo30 562 - SofTle - 24 Hour Service     Emergency telephone number		
2. HAZARDS IDENTIFICATION		
Classification		
Regulatory Status This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)		

Not a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Hazards not otherwise classified (HNOC) Not applicable

Label elements

Signal word None

Hazard statements The product contains no substances which at their given concentration, are considered to be hazardous to health

Other Hazards Known None

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3. COMPOSITION/INFORMATION ON INGREDIENTS

### Substance Not applicable

<u>Mixture</u>

### Chemical Family

Mixture.

Chemical nature	Aqueous alkaline solution.					
Chem	ical name	CAS No	Percent Range	HMRIC #		
Phosphoric a	Phosphoric acid, disodium salt 7558-79-4 <1% -					
	sium nitrate	10377-60-3	< 0.1%	-		
3(2H)-Isothiazolo	ne, 5-chloro-2-methyl-	26172-55-4	<0.01%	-		
3(2H)-Isothia	zolone, 2-methyl-	2682-20-4	<0.01%	-		
	4. FIRST AID MEASUR	RES				
Description of first aid measures						
General advice	No hazards which require special first the nature of the injury.	aid measures. Use first aid	d treatment ac	cording to		
Inhalation	Remove to fresh air.					
Eye contact	Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.					
Skin contact	Wash skin with soap and water.					
Ingestion	Clean mouth with water and drink afterwards plenty of water.					
Most important symptoms and effe	cts, both acute and delayed					
Symptoms	See Section 11 for additional Toxicological Information.					
ndication of any immediate medical attention and special treatment needed						
Note to physicians	Treat symptomatically.					
	5. FIRE-FIGHTING MEAS	URES				
Suitable Extinguishing Media	Use extinguishing measures that are a surrounding environment.	ppropriate to local circum	stances and th	ie		
Unsuitable Extinguishing Media	Caution: Use of water spray when fighting fire may be inefficient.					
Specific hazards arising from the chemical	No information available.					

Hazardous combustion products This material will not burn. Special protective equipment for firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

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Eye/face protection	Wear safety glasses with side shields (or goggles).						
Skin and body protection	No special protective	equipment required.					
General Hygiene Considerations	Handle in accordance	with good industrial hygiene	e and safety practice.				
Environmental exposure controls		Id be advised if significant sp on the ground or into any bo	pillages cannot be contained. Do not dy of water.				
Thermal hazards	None under normal p	ocessing.					
	9. PHYSICAL AND	CHEMICAL PROPERT	<b>FIES</b>				
Information on basic physical an	d chemical properties						
Physical state	Liquid						
Appearance clear Odor Odorless	Erquia	Color yello Odor threshold Not	ow applicable				
Property	Values		Remarks • Method				
Molecular weight	Not applica	ble					
pН	7.3		@ 20 °C				
Melting point/freezing point	~ 0 °C /	32 °F					
Boiling point / boiling range	~ 100 °C	/ 212 °F	212 °F				
Evaporation rate	1 (water = 1	)					
Vapor pressure	18.002 mm Hg / 2.4 kPa at 20 °C / 68 °F						
Relative vapor density	0.62						
Specific gravity (water = 1 / air =	<b>1)</b> 1						
Partition Coefficient (n-octanol/w	ater) No data ava	ilable					
Soil Organic Carbon-Water Partit	ion No data ava	ilable					
Coefficient Autoignition temperature	No data ava	lable					
Decomposition temperature	No data ava	ilable					
Dynamic viscosity	~ 1 cP (mP	as) at 20 °C / 68 °F	s) at 20 °C / 68 °F				
Kinematic viscosity	~ 1 cSt (mn	<sup>12</sup> /s) at 20 °C / 68 °F					
Solubility(ies)							
Water solubility							
Water solubility classification		er solubility	Water Solubility Temperature				
Completely soluble	e > 10000 mg/L 25 °C / 77 °F						
Solubility in other solvents							
Chemical Name None reported	Solubility classification No information available						
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	6. ACCIDENTAL RELEASE MEASURES
U.S. Notice	Only persons properly qualified to respond to an emergency involving hazardous substances may respond to a spill according to federal regulations (OSHA 29 CFR 1910.1203(4)) and per your company's emergency response plan and guidelines/procedures. See Section 13, Special Instructions for disposal assistance. Outside of the US, only persons properly qualified according to state or local regulation should respond to a spill involving chemicals.
Personal precautions, protective ed	quipment and emergency procedures
Personal precautions	Ensure adequate ventilation.
Environmental precautions	
Environmental precautions	See Section 12 for additional ecological information.
Methods and material for containm	ent and cleaning up
Methods for containment	Prevent further leakage or spillage if safe to do so.
Methods for cleaning up	Pick up and transfer to properly labeled containers.
Prevention of secondary hazards	Clean contaminated objects and areas thoroughly observing environmental regulations.
Reference to other sections	See section 8 for more information. See section 13 for more information.
	7. HANDLING AND STORAGE
Precautions for safe handling	
Advice on safe handling	Handle in accordance with good industrial hygiene and safety practice.
Conditions for safe storage, includ	ing any incompatibilities
Storage Conditions	Keep containers tightly closed in a dry, cool and well-ventilated place.
Flammability class	Not applicable
8. EX	POSURE CONTROLS/PERSONAL PROTECTION
Control parameters	
Exposure Guidelines	This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies
Appropriate engineering controls Engineering Controls	Showers Eyewash stations Ventilation systems

Ventilation systems. Individual protection measures, such as personal protective equipment Respiratory protection No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required. Ensure adequate ventilation. Wear suitable gloves. Hand Protection EN / AGHS Page 3/14

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Other information

Metal Corrosivity

Steel Corrosion Rate Aluminum Corrosion Rate

Volatile Organic Compounds (VOC) Content

Chemical name	CAS No	Volatile organic compounds (VOC) content	CAA (Clean Air Act)
Phosphoric acid, disodium salt	7558-79-4	No data available	-
Magnesium nitrate	10377-60-3	No data available	-
3(2H)-Isothiazolone, 5-chloro-2-methyl-	26172-55-4	No data available	-
3(2H)-Isothiazolone, 2-methyl-	2682-20-4	No data available	-

No data available No data available

Explosive properties	
Upper explosion limit Lower explosion limit	Not applicable Not applicable
Flammable properties	
Flash point	No data available
Flammability Limit in Air Upper flammability limit: Lower flammability limit:	No data available No data available
Oxidizing properties	No data available.
Bulk density	Not applicable

10. STABILITY AND REACTIVITY

Reactivity\_\_\_\_\_ Not applicable.

Chemical stability Stable under normal conditions.

Explosion data Sensitivity to Mechanical Impact None. Sensitivity to Static Discharge None.

Possibility of hazardous reactions None under normal processing.

Hazardous polymerization Hazardous polymerization does not occur.

Conditions to avoid

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None known based on information supplied.

### Hazardous decomposition products

Carbon monoxide. Carbon dioxide (CO2). Nitrogen oxides (NOX). metal oxides.
11. TOXICOLOGICAL INFORMATION
Information on likely routes of exposure
Band addition and a

Inhalation	No known effect based on information supplied.
Eye contact	No known effect based on information supplied.
Skin contact	No known effect based on information supplied.
Ingestion	No known effect based on information supplied.
Symptoms	No information available.

<u>Acute toxicity</u> Based on available data, the classification criteria are not met

Product Acute Toxicity Data No data available.

Ingredient Acute Toxicity Data Test data reported below.

#### Oral Exposure Route

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Magnesium nitrate (<0.1%) CAS#: 10377-60-3	Rat LD50	5440 mg/kg	None reported	None reported	IUCLID (The International Uniform Chemical Information Database)
3(2H)-Isothiazolone, 5-chloro-2-methyl- (<0.01%) CAS#: 26172-55-4	Rat LD50	481 mg/kg	None reported	None reported	IUCLID (The International Uniform Chemical Information Database)
Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
3(2H)-Isothiazolone, 2-methyl- (<0.01%) CAS#: 2682-20-4	None reported	None reported	None reported	None reported	No information available
Inhalation (Dust/Mist	) Exposure R	oute			

Unknown Acute Toxicity 0% of the mixture consists of ingredient(s) of unknown toxicity.

### Acute Toxicity Estimations (ATE)

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# Product Sensitization Data No data available.

# Ingredient Sensitization Data Test data reported below.

#### Skin Sensitization Exposure Route

Chemical name	Test method	Species	Results	Key literature references and sources for data
3(2H)-Isothiazolone, 5-chloro-2-methyl- (<0.01%) CAS#: 26172-55-4	OECD Test No. 406: Skin Sensitization	Guinea pig	Confirmed to be a skin sensitizer	IUCLID (The International Uniform Chemical Information Database)

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<u>STOT - single exposure</u> Based on available data, the classification criteria are not met.

Product Specific Target Organ Toxicity Single Exposure Data No data available

Ingredient Specific Target Organ Toxicity Single Exposure Data No data available.

<u>STOT - repeated exposure</u> Based on available data, the classification criteria are not met.

Product Specific Target Organ Toxicity Repeat Dose Data No data available.

## Ingredient Specific Target Organ Toxicity Repeat Exposure Data No data available.

<u>Carcinogenicity</u> Based on available data, the classification criteria are not met.

Product Carcinogenicity Data No data available.

### Ingredient Carcinogenicity Data No data available.

Chemical name	CAS No	ACGIH	IARC	NTP	OSHA
Phosphoric acid, disodium	7558-79-4	-		-	-
salt					
Magnesium nitrate	10377-60-3	-	Group 2A	-	Х
3(2H)-Isothiazolone,	26172-55-4	-	-	-	-
5-chloro-2-methyl-					
3(2H)-Isothiazolone,	2682-20-4	-	-	-	-
2-methyl-					

#### Legend

ACGIH (American Conference of Governmental Industrial Hygienists)	Does not apply
IARC (International Agency for Research on Cancer)	Does not apply
NTP (National Toxicology Program)	Does not apply
OSHA (Occupational Safety and Health Administration of the US Department of	Does not apply
Labor)	

#### Germ cell mutagenicity

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ATEmix (oral)	No information available
ATEmix (dermal)	No information available
ATEmix (inhalation-dust/mist)	No information available
ATEmix (inhalation-vapor)	No information available
ATEmix (inhalation-gas)	No information available

Skin corrosion/irritation Based on available data, the classification criteria are not met.

### Product Skin Corrosion/Irritation Data No data available.

### Ingredient Skin Corrosion/Irritation Data Test data reported below.

Chemical name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Phosphoric acid, disodium salt (<1%) CAS#: 7558-79-4	Standard Draize Test	Rabbit	500 mg	24 hours	Skin irritant	RTECS (Registry of Toxic Effects of Chemical Substances)
Magnesium nitrate (<0.1%) CAS#: 10377-60-3	Standard Draize Test	Rabbit	500 mg	24 hours	Skin irritant	HSDB (Hazardous Substances Data Bank)
3(2H)-Isothiazolone, 5-chloro-2-methyl- (<0.01%) CAS#: 26172-55-4	OECD Test 404: Acute Dermal Corrosion/Irritation	Rabbit	None reported	None reported	Corrosive to skin	OECD 429: Skin Sensitization: Local Lymph Node Assay

Serious eye damage/irritation Based on available data, the classification criteria are not met.

Product Serious Eye Damage/Eye Irritation Data No data available.

Ingredient Eye Damage/Eye Irritation Data Test data reported below.

Chemical name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Phosphoric acid, disodium salt (<1%) CAS#: 7558-79-4	Standard Draize Test	Rabbit	500 mg	24 hours	Eye irritant	RTECS (Registry of Toxic Effects of Chemical Substances)
Magnesium nitrate (<0.1%) CAS#: 10377-60-3	Standard Draize Test	Rabbit	500 mg	24 hours	Eye irritant	HSDB (Hazardous Substances Data Bank)
3(2H)-Isothiazolone, 5-chloro-2-methyl- (<0.01%) CAS#: 26172-55-4	OECD Test 405: Acute Eye Corrosion/Irritation	Rabbit	None reported	None reported	Eye irritant	ERMA (New Zealands Environmental Risk Management Authority) OECD 429: Skin Sensitization: Local Lymph Node Assay

### Respiratory or skin sensitization Based on available data, the classification criteria are not met.

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Based on available data, the classification criteria are not met.

Product Germ Cell Mutagenicity invitro Data

Ingredient Germ Cell Mutagenicity invitro Data No data available.

Product Germ Cell Mutagenicity invivo Data No data available.

Ingredient Germ Cell Mutagenicity invivo Data No data available.

Reproductive toxicity Based on available data, the classification criteria are not met.

Product Reproductive Toxicity Data No data available.

Ingredient Reproductive Toxicity Data No data available.

### Aspiration hazard Based on available data, the classification criteria are not met.

12. ECOLOGICAL INFORMATION

Ecotoxicity Based on available data, the classification criteria are not met. 0 % of the mixture consists of component(s) of unknown hazards to the aquatic

environment

Unknown aquatic toxicity

Product Ecological Data

Aquatic Acute Toxicity No data available.

Aquatic Chronic Toxicity No data available.

Ingredient Ecological Data

Aquatic Acute Toxicity Test data reported below

Fish

Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Magnesium nitrate (<0.1%) CAS#: 10377-60-3	96 hours	Lepomis macrochirus	LC <sub>50</sub>	9000 mg/L	ECHA (The European Chemical Agency)
3(2H)-Isothiazolone, 5-chloro-2-methyl- (<0.01%) CAS#: 26172-55-4	96 hours	Oncorhynchus mykiss	LC <sub>50</sub>	0.19 mg/L	EPA (United States Environmental Protection Agency)
3(2H)-Isothiazolone, 2-methyl- (<0.01%)	96 hours	Oncorhynchus mykiss	LC <sub>50</sub>	0.7 mg/L	EPA (United States Environmental Protection Agency)

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CAS#: 2682-20-4					
rustacea					
Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Magnesium nitrate (<0.1%) CAS#: 10377-60-3	48 Hours	Daphnia magna	EC <sub>50</sub>	880 mg/L	ECHA (The European Chemicals Agency)
3(2H)-Isothiazolone, 5-chloro-2-methyl- (<0.01%) CAS#: 26172-55-4	48 Hours	None reported	LC <sub>50</sub>	0.56 mg/L	EPA (United States Environmental Protection Agency)
3(2H)-Isothiazolone, 2-methyl- (<0.01%) CAS#: 2682-20-4	48 Hours	Daphnia magna	ECso	0.18 mg/L	EPA (United States Environmental Protection Agency)
llgae					
Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Magnesium nitrate (<0.1%) CAS#: 10377-60-3	72 Hours	Scenedesmus subspicatus	EC <sub>50</sub>	> 100 mg/L	ECHA (The European Chemicals Agency)
3(2H)-Isothiazolone, 5-chloro-2-methyl- (<0.01%) CAS#: 26172-55-4	72 Hours	None reported	EC <sub>50</sub>	0.021 mg/L	EPA (United States Environmental Protection Agency)
quatic Chronic Tox to data available. ersistence and degr roduct Biodegradat lo data available. ioaccumulation here is no data for thi roduct Bioaccumuli to data available.	radability bility Data				
artition Coefficient	(n-octanol/wa	ter) No	) data available		
lobility					
	Water Partitic	on Coefficient No	o data available	, ,	

### Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

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chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical name	SARA 313 - Threshold Values %
Magnesium nitrate (CAS #: 10377-60-3)	1.0
SARA 311/312 Hazard Categories	
Acute health hazard	No
Chronic Health Hazard	No
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act) This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Phosphoric acid, disodium salt 7558-79-4	5000 lb	-	-	х

CSBS-79-4 CSRCLA This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

Chemical name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Phosphoric acid, disodium salt	5000 lb	-	RQ 5000 lb final RQ
7558-79-4			RQ 2270 kg final RQ
US State Regulations			

California Proposition 65 This product does not contain any Proposition 65 chemicals

IMERC: Not applicable

### U.S. State Right-to-Know Regulations

This product may contain substances regulated by state right-to-know regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Phosphoric acid, disodium salt	Х	X	Х
7558-79-4			
Magnesium nitrate	Х	X	Х
10377-60-3			

### U.S. EPA Label Information

Chemical name	FIFRA	FDA
Phosphoric acid, disodium salt	180.0910	21 CFR 182.1778,21 CFR 182.6290,21
		CFR 182.6778,21 CFR 182.8778
Magnesium nitrate	180.0920	-
3(2H)-Isothiazolone, 5-chloro-2-methyl-	180.0920	-
3(2H)-Isothiazolone, 2-methyl-	180.0920	-

16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION

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Contaminated packaging	Do not reuse empty containers.
US EPA Waste Number	Not applicable
Special instructions for disposal	If permitted by regulation. Open cold water tap completely, slowly pour the material to the drain. Check with local municipal and state authorities and waste contractors for pertinent local information regarding the proper disposal of chemicals. 14. TRANSPORT INFORMATION
DOT	Not regulated
TDG	Not regulated
IATA	Not regulated
IMDG	Not regulated
If the item is not in a reagent set or ki	
National Inventories	15. REGULATORY INFORMATION

National Inver TSCA DSL/NDSL Complies Complies

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS	Complie
ENCS	Complie
IECSC	Complie
KECL - Existing substances	Complie
PICCS	Complie
TCSI	Complie
AICS	Complie
NZIOC	Complie

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances ENCS - Japan Existing and New Chemical Substances IECSC - China Inventory of Existing Chemical Substances PICCS - Philipines Inventory of Chemical Substances AICCS - Philipines Inventory of Chemical Substances AICS - Australian Inventory of Chemical Substances NZIGC - New Zealand Inventory of Chemical Substances NZIGC - New Zealand Inventory of Chemical Substances

### US Federal Regulations

SARA 313 Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any EN / AGHS Page 11/14

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Special Comments None

Additional information

Global Automotive Declarable Substance List (GADSL)

Chemical name	Global Automotive Declarable Substance List Classifications	Global Automotive Declarable Substance List Thersholds
Magnesium nitrate 10377-60-3	Declarable Substance (FI)	0.1 %
3(2H)-Isothiazolone, 5-chloro-2-methyl- 26172-55-4	Prohibited Substance (LR)	0 %
3(2H)-Isothiazolone, 2-methyl- 2682-20-4	Declarable Substance (LR) Prohibited Substance (LR)	0 %

NFPA and HMIS Classifications

NFPA	Health hazards - 0	Flammability - 0	Instability - 0	Physical and chemical properties -
HMIS	Health hazards - 0	Flammability - 0	Physical hazards - 0	Personal protection -
				X
				-1

#### Key or legend to abbreviations and acronyms used in the safety data sheet

NIOSH IDLH ACGIH NDF Immediately Dangerous to Life or Health ACGIH (American Conference of Governmental Industrial Hygienists) no data

#### Legend - Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

MAC Maximum / X Listed	weighted average) Vlowable Concentration	STEL Ceiling Vacated	STEL (Short Term Exposure Limit) Ceiling Limit Value These values have no official status. The only binding levels of contaminants are those listed in the final OSHA PEL. These lists are for reference purposes only. Please note that some reference state regulations of these
X Listed SKN* Skin design RSP+ Respiraton C Carcinoger M mutagen Prepared By Issue Date	Volume and the volume of the v	÷	These values have no official status. The only binding levels of contaminants are those listed in the final OSHA PEL. These lists are for reference purposes only. Please note that some reference state regulations of these
SKN* Skin desigr RSP+ Respiratory C Carcinoger M mutagen Prepared By Issue Date		Vacated	binding levels of contaminants are those listed in the final OSHA PEL. These lists are for reference purposes only. Please note that some reference state regulations of these
RSP+ Respiratory C Carcinoger M mutagen Prepared By Issue Date			"liberated" exposure limits in their state regulations.
Issue Date	sensitization	SKN+ ** R	Skin sensitization Hazard Designation Reproductive toxicant
	Hach Product Complia	ance Department	
Revision Date	07-Oct-2020		
	10-Aug-2021		
Revision Note	None		
Disclaimer			

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USER RESPONSIBILITY: Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations.

THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED TO BE ACCURATE. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.

HACH COMPANY@2021

End of Safety Data Sheet



### SAFETY DATA SHEET

# Be Right<sup>™</sup>

Issue Date	08-Jun-2021	Revision Date 10-Aug-2021	Version 3.7	Page 1 / 13
		1. IDENTIFICATI	ION	
Product ider Product Nam		pH Storage Solution		
Other means Product Cod	<u>s of identification</u> le(s)	2756549		
Safety data s	sheet number	M01702		
Recommend Recommend Uses advise Restrictions	led Use d against	cal and restrictions on use Laboratory reagent. Electrode stor None. None.	age solution.	
Details of the	e supplier of the safe	ety data sheet		
Manufacture Hach Compa		eland, CO 80539 USA +1(970) 669-305	50	
	telephone number 5716 - 24 Hour Servic	e		
		2. HAZARDS IDENTIF	ICATION	
Not a dangere <u>Hazards not</u> Not applicable <u>Label elemen</u> Signal word None Hazard state	I is not considered ha outs substance or mixti otherwise classified e nts ments product contains no s	zardous by the 2012 OSHA Hazard Co ure according to the Globally Harmoniz (HNOC)	red System (GHS)	
None				

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### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance Not applicable

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Mixture

Chemical name CAS No F							
Phosphoric a	cid, disodium salt	7558-79-4	<0.1%	-			
Glutaraldehyde 111-30-8 <0.1%							
	4. FIRST AID MEASU	RES					
Description of first aid measures							
General advice	No hazards which require special first aid measures. Use first aid treatment according to the nature of the injury.						
Inhalation	Remove to fresh air.						
Eye contact	Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids Consult a physician.						
Skin contact	Wash skin with soap and water.						
Ingestion	Clean mouth with water and drink afterwards plenty of water.						
Most important symptoms and effe	cts, both acute and delayed						
Symptoms	See Section 11 for additional Toxicological Information.						
Indication of any immediate medic	al attention and special treatment nee	ded					
Note to physicians	Treat symptomatically.						
	5. FIRE-FIGHTING MEAS	BURES					
Suitable Extinguishing Media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.						
Unsuitable Extinguishing Media	Caution: Use of water spray when fighting fire may be inefficient.						
Specific hazards arising from the chemical	No information available.						
Hazardous combustion products	This material will not burn.						
Special protective equipment for fire-fighters	Firefighters should wear self-containe gear. Use personal protection equipm		d full firefighting	turnout			
	6. ACCIDENTAL RELEASE N	IEASURES					
U.S. Notice	Only persons properly qualified to resp substances may respond to a spill acc 1910.120(a)(v)) and per your compan	cording to federal regulati	ons (ÕSHA 29 (				

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Product Name pH Storage Solution Revision Date 10-Aug-2021 Page 3 / 13 Product Code(s) 2756549 Issue Date 08-Jun-2021 Version 3.7 guidelines/procedures. See Section 13, Special Instructions for disposal assistance. Outside of the US, only persons properly qualified according to state or local regulations should respond to a spill involving chemicals. Personal precautions, protective equipment and emergency procedures Personal precautions Ensure adequate ventilation Environmental precautions Environmental precautions See Section 12 for additional ecological information. Methods and material for containment and cleaning up Methods for containment Prevent further leakage or spillage if safe to do so. Methods for cleaning up Pick up and transfer to properly labeled containers. Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations Reference to other sections See section 8 for more information. See section 13 for more information. 7. HANDLING AND STORAGE Precautions for safe handling Advice on safe handling Handle in accordance with good industrial hygiene and safety practice. Conditions for safe storage, including any incompatibilities Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place Flammability class Not applicable 8. EXPOSURE CONTROLS/PERSONAL PROTECTION Control parameters Exposure Guidelines Chemical name ACGIH TLV OSHA PEL Т NIOSH Ceiling: 0.05 ppm activated (vacated) Ceiling: 0.2 ppm Ceiling: 0.2 ppm ceiling: 0.8 mg/m<sup>3</sup> Ceiling: 0.8 mg/m<sup>3</sup> Glutaraldehyde CAS#: 111-30-8 Appropriate engineering controls Engineering Controls Showers Eyewash stations Ventilation systems Individual protection measures, such as personal protective equipment.
Respiratory protection
No protective equipment is needed under normal use conditions. If exposure limits are
exceeded or irritation is experienced, ventilation and evacuation may be required. Hand Protection Wear suitable gloves. Eve/face protection Wear safety glasses with side shields (or goggles). Skin and body protection No special protective equipment required.

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General Hygiene Considerations Handle in accordance with good industrial hygiene and safety practice

Environmental exposure controls	Local authorities should be advised if significant spillages cannot be contained. Do not allow into any sewer, on the ground or into any body of water.
Thermal hazards	None under normal processing.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state Appearance	aqueous solution	iquid	Color	colorless		
Ddor	clear Odorless		Odor threshold	No data available		
roperty		Values		Remarks • Method		
lolecular weight		No data availa	ible			
н		6.4		@ 20 °C		
lelting point/free	zing point	~ -49 °C /	-56.2 °F			
oiling point / bo	iling range	~ 113 °C /	235.4 °F			
vaporation rate		0.87 (water =	1)			
apor pressure		16.502 mm Hg	16.502 mm Hg / 2.2 kPa at 20 °C / 68 °F			
elative vapor de	ensity	0.62	0.62			
pecific gravity (	water = 1 / air = 1)	1.15				
artition Coeffici	ent (n-octanol/water)	Not applicable	Not applicable			
Soil Organic Carbon-Water Partition		Not applicable	Not applicable			
oefficient utoignition tem	perature	No data availa	No data available			
ecomposition to	emperature	No data availa	No data available			
ynamic viscosit	у	No data availa	No data available			
inematic viscos	ity	No data availa	ible			
olubility(ies)						
Vater solubility						
	bility classification		solubility	Water Solubility Temperature		
:	Soluble	> 10	00 mg/L	25 °C / 77 °F		
olubility in othe	r solvents					
Chemical		lubility classification	Solubi			
Acid		Soluble	> 1000	ma/L 25 °C / 77 °F		

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Chlorides. Potassium oxide.					
	11. TOXICOLOGICAL INFORMATION				
Information on likely routes of ex	posure				
Product Information					
Inhalation	No known effect based on information supplied.				
Eye contact	No known effect based on information supplied.				
Skin contact	No known effect based on information supplied.				
Ingestion	No known effect based on information supplied.				
Symptoms	No information available.				

Acute toxicity Based on available data, the classification criteria are not met

Product Acute Toxicity Data No data available.

### Ingredient Acute Toxicity Data No data available.

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Glutaraldehyde (<0.1%) CAS#: 111-30-8	Rat LD50	134 mg/kg	None reported	None reported	GESTIS (Information System on Hazardous Substances of the German Social Accident Insurance)
Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Glutaraldehyde (<0.1%) CAS#: 111-30-8	Rat LC50	0.39 mg/L	4 hours	None reported	ECHA (The European Chemicals Agency)

Unknown Acute Toxicity 0% of the mixture consists of ingredient(s) of unknown toxicity.

### Acute Toxicity Estimations (ATE)

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)	13,347.00 mg/kg
ATEmix (dermal)	No information available
ATEmix (inhalation-dust/mist)	No information available
ATEmix (inhalation-vapor)	No information available
ATEmix (inhalation-gas)	No information available

Skin corrosion/irritation Based on available data, the classification criteria are not met.

### Product Skin Corrosion/Irritation Data No data available.

Ingredient Skin Corrosion/Irritation Data No data available.

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### Metal Corrosivity

Bulk density

Steel Corrosion Rate Aluminum Corrosion Rate

No data available No data available

Chemical name	CAS No	Volatile organic compounds (VOC) content	CAA (Clean Air Act)
Phosphoric acid, disodium salt	7558-79-4	No data available	-
Glutaraldehyde	111-30-8	100%	-
ammable properties			
Flash point	I	No data available	
		No data available No data available No data available	

No data available

10. STABILITY AND REACTIVITY Reactivity Not applicable Chemical stability Stable under normal conditions Explosion data Sensitivity to Mechanical Impact None. Sensitivity to Static Discharge None. Possibility of hazardous reactions None under normal processing.

Hazardous polymerization None under normal processing.

Conditions to avoid\_ None known based on information supplied.

Incompatible materials\_\_\_\_\_\_ Strong oxidizing agents, strong acids, and strong bases.

Hazardous decomposition products

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Chemical name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and sources for data		
Phosphoric acid, disodium salt (<0.1%) CAS#: 7558-79-4	Standard Draize Test	Rabbit	500 mg	24 hours	Skin irritant	RTECS (Registry of Toxic Effects of Chemical Substances)		
Glutaraldehyde (<0.1%) CAS#: 111-30-8	OECD Test 404: Acute Dermal Corrosion/Irritation	Rabbit	0.5 mL	4 hours	Corrosive to skin	ECHA (The European Chemicals Agency)		
Serious eye damage/irritation Based on available data, the classification criteria are not met.								

Product Serious Eye Damage/Eye Irritation Data No data available.

Ingredient Eye Damage/Eye Irritation Data No data available.

Chemical name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Phosphoric acid, disodium salt (<0.1%) CAS#: 7558-79-4	Standard Draize Test	Rabbit	500 mg	24 hours	Eye irritant	RTECS (Registry of Toxic Effects of Chemical Substances)
Glutaraldehyde (<0.1%) CAS#: 111-30-8	Standard Draize Test	Rabbit	0.1 mL	24 hours	Corrosive to eyes	ECHA (The European Chemicals Agency)

Respiratory or skin sensitization Based on available data, the classification criteria are not met.

Product Sensitization Data No data available.

## Ingredient Sensitization Data No data available.

Chemical name	Test method	Species	Results	Key literature references and sources for data
Glutaraldehyde (<0.1%) CAS#: 111-30-8	Open Epicutaneous Test	Guinea pig	Confirmed to be a skin sensitizer	ECHA (The European Chemicals Agency)
Chemical name	Test method	Species	Results	Key literature references and sources for data
Glutaraldehyde (<0.1%) CAS#: 111-30-8	Based on human experience	Human	Confirmed to be a respiratory sensitizer	Japan National Institute of Technology and Evaluation (NITE)

Based on available data, the classification criteria are not met.

Product Specific Target Organ Toxicity Single Exposure Data No data available.

Ingredient Specific Target Organ Toxicity Single Exposure Data No data available.

STOT - repeated exposure Based on available data, the classification criteria are not met.

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Product Specific Target Organ Toxicity Repeat Dose Data No data available.

Ingredient Specific Target Organ Toxicity Repeat Exposure Data No data available.

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Glutaraldehyde (<0.1%)	Rat NOAFI	29.9 mg/kg	90 days	Nutritional and Gross Metabolic	ECHA (The European Chemicals Agency)
(<0.1%) CAS#: 111-30-8	NOAEL			Weight loss or decreased weight gain	Chemicals Agency)
Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Glutaraldehyde (<0.1%) CAS#: 111-30-8	Rat NOAEL	150 mg/kg	90 days	No toxicological effects observed	ECHA (The European Chemicals Agency)
Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Glutaraldehyde (<0.1%) CAS#: 111-30-8	Rat NOAEC	0.125 mg/L	730 days	Nutritional and Gross Metabolic Weight loss or decreased	ECHA (The European Chemicals Agency)
				weight gain	

Carcinogenicity Based on available data, the classification criteria are not met.

Product Carcinogenicity Data No data available.

# Ingredient Carcinogenicity Data No data available.

Chemical name	CAS No	ACGIH	IARC	NTP	OSHA
Phosphoric acid, disodium	7558-79-4	-	-	-	-
salt					
Glutaraldehvde	111-30-8	-	-	-	-

Legend	
ACGIH (American Conference of Governmental Industrial Hygienists)	Does not apply
IARC (International Agency for Research on Cancer)	Does not apply
NTP (National Toxicology Program)	Does not apply

OSHA (Occupational Labor)		Does not app				
Chemical name	Endpoint	Reported	Exposure	Toxicological effect	s Kev lit	terature references and

Chemical name	Endpoint	Reported	Exposure	Toxicological effects	Key literature references and
	type	dose	time		sources for data
Glutaraldehyde	Rat	2912 mg/kg	2 years	Blood	RTECS (Registry of Toxic
(<0.1%)	TDLo			Leukemia	Effects of Chemical
CAS#: 111-30-8					Substances)

Germ cell mutagenicity Based on available data, the classification criteria are not met.

### Product Germ Cell Mutagenicity invitro Data No data available.

Ingredient Germ Cell Mutagenicity invitro Data No data available.

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Product Code(s) 2756549 Issue Date 08-Jun-2021 Version 3.7			oduct Name vision Date ge 10 / 13	pH Storage So 10-Aug-2021	lution
CAS#: 111-30-8					German Social Accident Insurance)
Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Glutaraldehyde (<0.1%) CAS#: 111-30-8	Scenedemus subspicatus	EC <sub>50</sub>	0.6 mg/L	ECHA (The European Chemicals Agency)	
Aquatic Chronic Tox No data available.	licity				
Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Glutaraldehyde (<0.1%) CAS#: 111-30-8	None reported	Scenedemus subspicatus	NOEC	< 0.0391 mg/L	ECHA (The European Chemicals Agency)
No data available. Bioaccumulation There is no data for th Product Bioaccumul No data available. Partition Coefficient Mobility Soil Organic Carbon Other adverse effect.	ation Data (n-octanol/wa -Water Partitic		t applicable t applicable		
				010	
		13. DISPOSAL CON	SIDERATI	UNS	
Waste treatment me Waste from residues products		Dispose of in accordance with environmental legislation.	n local regulat	ions. Dispose o	f waste in accordance with
Contaminated packa	iging	Do not reuse empty container	rs.		
Special instructions	for disposal	Check with local municipal an information regarding the prop			contractors for pertinent local
		14. TRANSPORT IN	NFORMATI	ON	
DOT		Not regulated			
TDG		Not regulated			
IATA Not regulated					
IMDG		Not regulated			
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Chemical name	Test	Cell Strain	Reported dose	Exposure time	Results	Key literature references and sources for data			
Glutaraldehyde (<0.1%) CAS#: 111-30-8	Mutation in microorganisms	Salmonella typhimurium	5 mg/plate	None reported	Positive test result for mutagenicity	ECHA (The European Chemicals Agency)			
Product Germ Cell Mutagenicity invivo Data No data available.									

# Ingredient Germ Cell Mutagenicity invivo Data

Reproductive toxicity Based on available data, the classification criteria are not met.

Product Reproductive Toxicity Data No data available.

### Ingredient Reproductive Toxicity Data No data available.

Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Rat NOAEL	500 ppm	Multiple generations	No reproductive or developmental toxic effects observed	ECHA (The European Chemicals Agency)
_	type Rat	type dose Rat 500 ppm	type dose time Rat 500 ppm Multiple	type dose time Rat 500 ppm Multiple No reproductive or NOAEL generations developmental toxic effects

 $0\ \%$  of the mixture consists of component(s) of unknown hazards to the aquatic environment.

Based on available data, the classification criteria are not met.

## 12. ECOLOGICAL INFORMATION

Ecotoxicity

Unknown aquatic toxicity

Product Ecological Data

Aquatic Acute Toxicity No data available.

Aquatic Chronic Toxicity No data available.

### Ingredient Ecological Data

Aquatic Acute Toxicity No data available.

Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Glutaraldehyde (<0.1%) CAS#: 111-30-8	96 hours	None reported	LC <sub>50</sub>	3.5 mg/L	GESTIS (Information System o Hazardous Substances of the German Social Accident Insurance)
Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Glutaraldehyde (<0.1%)	48 Hours	None reported	EC <sub>50</sub>	0.75 mg/L	GESTIS (Information System of Hazardous Substances of the

Product Code(s) 2756549 Issue Date 08-Jun-2021 Version 3.7		Product Name Revision Date Page 11 / 13	pH Storage Solution 10-Aug-2021
Note:	No special precautions n	ecessary.	
Additional information			
	15. REGULATO		TION
National Inventories	15. REGULATO		TION
TSCA	Complies		
DSL/NDSL	Complies		
TSCA - United States Toxic Substan DSL/NDSL - Canadian Domestic Su			st
International Inventories			
EINECS/ELINCS	Complies		
ENCS	Complies Complies		
KECL - Existing substances	Complies		
PICCS	Complies		
TCSI	Complies		
AICS	Complies		
NZIOC	Complies		
EINECS/ELINCS - European Invent ENCS - Japan Existing and New Ch IECSC - China Inventory of Existing KECL - Korean Existing and Evaluat PICCS - Philippines Inventory of Che TCSI - Taiwan Chemical Substances AICS - Australian Inventory of Chem NZIOC - New Zealand Inventory of C	emical Substances Chemical Substances ed Chemical Substances emicals and Chemical Substances i Inventory ical Substances		an List of Notified Chemical Substances
US Federal Regulations			
			1986 (SARA). This product does not contain any of the Code of Federal Regulations, Part 372
SARA 311/312 Hazard Categories			
Acute health hazard		No	
Chronic Health Hazard		No	
Fire hazard		No	
Sudden release of pressure haz	ard	No	
Reactive Hazard		No	

SAP	CA 311/312 Hazard Categories
	Acute health hazard
	Chronic Health Hazard
1	Fire hazard
	Sudden release of pressure hazard
1	Reactive Hazard

CWA (Clean Water Act) This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Phosphoric acid, disodium salt 7558-79-4	5000 lb	-	-	X
		stances regulated as hazar		

Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

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Chemical name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Phosphoric acid, disodium salt	5000 lb	-	RQ 5000 lb final RQ
7558-79-4			RQ 2270 kg final RQ
US State Regulations			

California Proposition 65 This product does not contain any Proposition 65 chemicals

#### U.S. State Right-to-Know Regulations

This product does not contain any substances regulated by state right-to-know regulations.

Chemical name	New Jersey	Massachusetts	Pennsylvania
Phosphoric acid, disodium salt 7558-79-4	х	x	x
Glutaraldehyde 111-30-8	х	X	X
J.S. EPA Label Information			

Chemical name	FIFRA	FDA
Phosphoric acid, disodium salt	180.0910	21 CFR 182.1778,21 CFR 182.6290,21 CFR 182.6778,21 CFR 182.8778

16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION Special Comments

# Additional information

Global Automotive Declarable Substance List (GADSL)

Chemical name Global Automotive Dec Substance List Classifie				utomotive Declarable nce List Thersholds	
Glutaralde	ehyde	Declarable Substance	: (LR)		0 %
111-30	D-8	Prohibited Substance	(LR)		
NFPA and HMIS Classifications					
NFPA	Health hazards - 0	Flammability - 0	Instal	oility - 0	Physical and chemical properties -
HMIS	Health hazards - 0	Flammability - 0	Physical	hazards - 0	Personal protection - X

Key or legend to abbreviations and acronyms used in the safety data sheet

Immediately Dangerous to Life or Health ACGIH (American Conference of Governmental Industrial Hygienists) NIOSH IDLH ACGIH NDF no data

#### Legend - Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
MAC	Maximum Allowable Concentration	Ceiling	Ceiling Limit Value
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Product Code(s) 2756549 Issue Date 08-Jun-2021 Version 3.7 х Listed

Skin designation Respiratory sensitization Carcinogen mutagen C M R Hach Product Compliance Department Prepared By Issue Date 08-Jun-2021 10-Aug-2021 **Revision Date** Revision Note None

Disclaimer

SKN\* RSP+

USER RESPONSIBILITY: Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations.

Product Name pH Storage Solution Revision Date 10-Aug-2021

regulations

Skin sensitization

Hazard Designation Reproductive toxicant

These values have no official status. The only binding levels of contaminants are those listed in the final OSHA PEL. These lists are for reference purposes only. Please note that some reference state regulations of these "liberated" exposure limits in their state monotone of the second state state monotone of the second state production of the second state monotone of the second state second state state

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Vacated

SKN+

THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED TO BE ACCURATE. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.

HACH COMPANY@2021

End of Safety Data Sheet

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Product Code(s) 2168042 Issue Date 28-05-2020 Version 4

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# SAFETY DATA SHEET

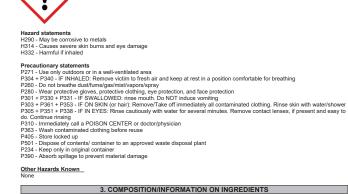
### Be Right<sup>™</sup>

Issue Date 28-05-2020 R	evision Date 24-Jan-2023	Version 4	Page	1 / 15
	1. IDENTIFICA	TION		
Product identifier Product Name	DEHA 2 Reagent			
Other means of identification Product Code(s)	2168042			
Safety data sheet number	M00444			
UN/ID no	UN3264			
Recommended use of the chemi Recommended Use Uses advised against Restrictions on use Details of the supplier of the safe Manufacturer Address Hach Company, P.O.Box 389, Low Emergency telephone number_ +1(303) 627-516 - 24 Hour Servic	Water Analysis. Determination of Consumer use. For Laboratory Use Only. Aty data sheet eland, CO 80539, USA, +1(970) 669			
	2. HAZARDS IDENT	TFICATION		
Classification				
Regulatory Status This chemical is considered hazard	lous by the 2012 OSHA Hazard Con	nmunication Standard (29 CFR 1910.12	:00)	
Corrosive to metals		Category 1		
Acute toxicity - Inhalation (Dusts/M	ists)	Category 4		
Skin corrosion/irritation		Category 1		
Serious eye damage/eye irritation		Category 1		

Hazards not otherwise classified (HNOC) Not applicable

Label elements

Signal word Danger



Product Name DEHA 2 Reagent Revision Date 24-Jan-2023 Page 2 / 15

# Substance Not applicable

Mixture

Chemical Family Chemical nature Mixture. Aqueous solution of inorganic acids and salts

#### Percent ranges are used where confidential product information is applicable.

Chemical name	CAS No	Percent Range	HMRIC #			
Nitric acid	7697-37-2	10 - 20%	-			
Ferric nitrate	10421-48-4	1 - 5%	-			
4. FIRST AID MEASURES						

Description of first aid measures

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Product Code(s) 2168042 Issue Date 28-05-2020 Version 4	Product Name DEHA 2 Reagent Revision Date 24-Jan-2023 Page 3 / 15				
General advice	Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.				
Inhalation	Remove to fresh air. If breathing has stopped, give artificial respiration. Get medical attention immediately. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If breathing is difficult, (trained personnel should) give oxygen. Delayed pulmonary edema may occur. Get immediate medical advice/attention.				
Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area. Get immediate medical advice/alterution.				
Skin contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get immediate medical advice/attention.				
Ingestion	Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Get immediate medical advice/attention.				
Self-protection of the first aider	Avoid contact with skin, eyes or clothing. Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Avoid breathing vapors or mists.				
Most important symptoms and effe	cts, both acute and delayed				
Symptoms	Burning sensation. Coughing and/ or wheezing. Difficulty in breathing.				
Indication of any immediate medica	al attention and special treatment needed				
Note to physicians	Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical anidotes. Asphyria from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure.				
	5. FIRE-FIGHTING MEASURES				
Suitable Extinguishing Media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.				
Unsuitable Extinguishing Media	Caution: Use of water spray when fighting fire may be inefficient.				
Specific hazards arising from the chemical	The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapors.				
Hazardous combustion products	Nitrogen oxides (NOx). This material will not burn.				
Special protective equipment for fire-fighters	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.				
	6. ACCIDENTAL RELEASE MEASURES				
	Only persons properly qualified to respond to an emergency involving hazardous				
U.S. Notice	Only persons property damined to respond to an entregency informing neuralizations substances may respond to a spill according to federal regulations (OSHA 20 CFR 1910.120(a)(V)) and per your company's emergency response plan and guidelines/procedures. See Section 13, Special Instructions for disposal assistance. Outside				

Product Code(s) 2168042		ct Name DEHA 2 Reagent	
Issue Date 28-05-2020		on Date 24-Jan-2023	
Version 4	Page	5/15	
		vacated) STEL: 10 mg/m3	
Ferric nitrate CAS#: 10421-48-4	TWA: 1 mg/m <sup>3</sup> Fe	(vacated) TWA: 1 mg/m <sup>3</sup>	TWA: 1 mg/m <sup>3</sup> Fe
Appropriate engineering controls			
Engineering Controls	Showers		
	Eyewash stations Ventilation systems.		
Individual protection measures, su	, h as personal protective equipp	aant	
Respiratory protection	No protective equipment is needed	ed under normal use condition	
	exceeded or irritation is experience breathing apparatus if exposed to		n may be required. Wear
Hand Protection	Wear suitable gloves. Impervious		
	selected protective gloves have to		
	the standard EN 374 derived fron nitrile rubber category III accordin		s made of butyl rubber or
Eye/face protection	Face protection shield.		
Skin and body protection	Wear suitable protective clothing.	Long sleeved clothing. Cher	nical resistant apron.
General Hygiene Considerations	Wear suitable gloves and eye/fac product. Regular cleaning of equi contact with skin, eyes or clothing including the inside, before re-us the workplace. Wash hands befor	pment, work area and clothin . Remove and wash contami e. Contaminated work clothin	g is recommended. Avoid nated clothing and gloves, g should not be allowed out of
Environmental exposure controls	Local authorities should be advise into any sewer, on the ground or		not be contained. Do not allow
Thermal hazards	None under normal processing.		
g	. PHYSICAL AND CHEMIC	AL PROPERTIES	
Information on basic physical and o	hemical properties		
Physical state	Liquid		
Appearance aqueous solution Odor Odorless	Color Odor t	Colorless to ligh hreshold Not applicable	t purple
Property	Values	Re	marks • Method
Molecular weight	Not applicable		
pH	< 0.5	@	20 °C
Melting point / freezing point	~ -9 °C / 15.8 °F		

Initial boiling point and boiling range  $~\sim~103~^\circ\text{C}$  / 217.4  $~^\circ\text{F}$ 

0.93 (water = 1)

No data available

0.67

1.062

17.027 mm Hg  $\,/\,$  2.27 kPa  $\,$  at  $\,$  20  $^{\circ}\text{C}$   $\,/\,$  68  $^{\circ}\text{F}$ 

Evaporation rate

Vapor pressure

Specific Gravity

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Partition coefficient

Relative vapor density

	of the US, only persons proper respond to a spill involving che	ly qualified according to state o micals.	r local regulations should			
Personal precautions, protective e	quipment and emergency proc	edures				
Personal precautions	Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Attention! Corrosive material. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Avoid breathing vapors or mists.					
Other Information	Refer to protective measures li	isted in Sections 7 and 8.				
Environmental precautions						
Environmental precautions		age if safe to do so. Should not nter into soil/subsoil. Prevent p				
Methods and material for containm	ent and cleaning up					
Methods for containment	Prevent further leakage or spill	age if safe to do so.				
Methods for cleaning up		naterial (e.g. sand, silica gel, ac ly, placing in appropriate contai				
Prevention of secondary hazards	Clean contaminated objects an	nd areas thoroughly observing e	environmental regulations.			
Reference to other sections See section 8 for more information. See section 13 for more information.						
	7. HANDLING AND	STORAGE				
Precautions for safe handling						
Advice on safe handling	skin, eyes or clothing. In case Handle product only in closed	od industrial hygiene and safety of insufficient ventilation, wear s system or provide appropriate e s product. Take off contaminate or mists.	suitable respiratory equipmer exhaust ventilation. Do not ea			
Conditions for safe storage, includ	ing any incompatibilities					
Storage Conditions		in a dry, cool and well-ventilate out of the reach of children. §				
Flammability class	Not applicable					
8. EX	POSURE CONTROLS/PE	RSONAL PROTECTION				
Control parameters						
Exposure Guidelines						
Chemical name	ACGIH TLV	OSHA PEL	NIOSH			
Nitric acid	STEL: 4 ppm TWA: 2 ppm	TWA: 2 ppm TWA: 5 mg/m3	IDLH: 25 ppm TWA: 2 ppm			

Product Name DEHA 2 Reagent Revision Date 24-Jan-2023 Page 4 / 15

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Nitric acid	STEL: 4 ppm	TWA: 2 ppm	IDLH: 25 ppm
CAS#: 7697-37-2	TWA: 2 ppm	TWA: 5 mg/m <sup>3</sup>	TWA: 2 ppm
		(vacated) TWA: 2 ppm	TWA: 5 mg/m <sup>3</sup>
		(vacated) TWA: 5 mg/m <sup>3</sup>	STEL: 4 ppm
		(vacated) STEL: 4 ppm	STEL: 10 mg/m <sup>3</sup>
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Product Code(s) 2168042 Issue Date 28-05-2020 Version 4			Product Name DEF Revision Date 24-J Page 6 / 15				
Soil Organic Carbon-Water Par Coefficient	No data availat	ble					
Autoignition temperature		No data availat	ble				
Decomposition temperature	Decomposition temperature No data availa						
Dynamic viscosity		No data availat	ble				
Kinematic viscosity		No data availat	ble				
Solubility(ies)							
Water solubility							
Water solubility classificati	on	Water :	solubility	Water S	Solubility Temperature		
Soluble		> 100	0 mg/L	mg/L 25 °C / 77 °F			
Solubility in other solvents							
Chemical Name	Solul	pility classification	Solubility		Solubility Temperature		
Acid		Soluble	> 1000 mg		25 °C / 77 °F		
Ethyl alcohol		Soluble	> 1000 mg		25 °C / 77 °F		
Acetone		Soluble	> 1000 mg	/L	25 °C / 77 °F		
Other information           Metal Corrosivity           Classified as corrosive to metal according to GHS criteria           Steel Corrosion Rate         1325.9 mm/yr / 52.2 in/yr           Aluminum Corrosion Rate         3.05 mm/yr / 0.12 in/yr           Volatile Organic Compounds (VOC) Content							
Chemical name		CAS No	Volatile organic (VOC) c		CAA (Clean Air Act)		
Nitric acid		7697-37-2	Not appl		-		
Ferric nitrate		10421-48-4	No data a	vailable	-		
Explosive properties Upper explosion limit			Not applicable				

Upper explosion limit Lower explosion limit	Not applicable Not applicable
Flammable properties	
Flash point	No data available
Flammability Limit in Air Upper flammability limit: Lower flammability limit:	No data available No data available
Oxidizing properties	No data available.
Bulk density	Not applicable

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10. STABILITY AND REACTIVITY Reactivity\_\_\_\_\_ Not applicable. Corrosive to metal. Chemical stability Stable under normal conditions Explosion data Sensitivity to Mechanical Impact None. Sensitivity to Static Discharge None. Possibility of hazardous reactions None under normal processing. Hazardous polymerization Hazardous polymerization does not occur. <u>Conditions to avoid</u> Exposure to air or moisture over prolonged periods. Excessive heat. Incompatible materials Oxidizing agent. Acids. Bases. <u>Hazardous decomposition products</u> Thermal decomposition can lead to release of irritating and toxic gases and vapors.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information	
Inhalation	Corrosive by inhalation. Inhalation of corrosive fumes/gases may cause coughing, choking, headache, dizziness, and weakness for several hours. Pulmonary edema may occur with tighness in the chest, shortness of breath, bilish sink, decreased blood pressure, and increased heart rate. Inhaled corrosive substances can lead to a toxic edema of the lungs. Pulmonary edema can be falat. Harmful by inhalation.
Eye contact	Causes burns. Corrosive to the eyes and may cause severe damage including blindness. Causes serious eye damage. May cause irreversible damage to eyes.
Skin contact	Corrosive. Causes severe burns. Avoid contact with skin and clothing.
Ingestion	Causes burns. Ingestion causes burns of the upper digestive and respiratory tracts. May cause severe burning pain in the mouth and stomach with vomiting and diarrhea of dark blood. Blood pressure may decrease. Brownish or yellowish stains may be seen around the mouth. Swelling of the threat may cause shortness of breach and choking. May cause lung damage if swallowed. May be fatal if swallowed and returs airways.
Symptoms	Redness. Burning. May cause blindness. Coughing and/ or wheezing.
Acute toxicity Harmful if inhaled	
Mixture No data available.	
Ingredient Acute Toxicity Data Test data reported below.	

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CAS#: 7697-37-2						
Ferric nitrate (1 - 5%) CAS#: 10421-48-4	None reported	None reported	None reported	None reported	Eye irritant	No information available

Respiratory or skin sensitization Based on available data, the classification criteria are not met

Mixture No data available.

Ingredient Sensitization Data No data available

<u>STOT - single exposure</u> Based on available data, the classification criteria are not met.

Mixture No data available

Ingredient Specific Target Organ Toxicity Single Exposure Data Test data reported below

#### Dermal Exposure Route

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Nitric acid	Rat	226500 mg/kg	None reported	Blood	RTECS
(10 - 20%)	TDLo			Methemoglobinemia-Carboxyhe	
CAS#: 7697-37-2				moglobin	

#### Inhalation (Vapor) Exposure Route

Chemical name	Endpoint	Reported	Exposure	Toxicological effects	Key literature references and
	type	dose	time	÷	sources for data
Nitric acid	Rat	460 mg/L	1 hours	Nutritional and Gross	RTECS
(10 - 20%)	TCLo	-		Metabolic	
CAS#: 7697-37-2				Weight loss or decreased weight	
				gain	

# <u>STOT - repeated exposure</u> Based on available data, the classification criteria are not met.

### Mixture No data available

Ingredient Specific Target Organ Toxicity Repeat Exposure Data Test data reported below.

#### Inhalation (Vapor) Exposure Route

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Nitric acid (10 - 20%) CAS#: 7697-37-2	Rat TC∟₀	0.001071 mg/L	84 days	Behavioral Muscle contraction or spasticity Biochemical Enzyme inhibition, induction, or change in blood or tissue levels (true cholinesterase) Kidney, Ureter, or Bladder Other changes in urine	RTECS

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#### Oral Exposure Route

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Ferric nitrate (1 - 5%) CAS#: 10421-48-4	Rat LD50	3250 mg/kg	None reported	None reported	RTECS

Inhalation (Dust/Mist) Exposure Route

Inhalation (Vapor) Exposure Route

Unknown Acute Toxicity 0% of the mixture consists of ingredient(s) of unknown toxicity.

#### Acute Toxicity Estimations (ATE)

The following values are calculated based on chapter 3.1 of the GHS docu

ATEmix (oral)	No information available		
ATEmix (dermal)	No information available		
ATEmix (inhalation-dust/mist)	3.77 mg/l		
ATEmix (inhalation-vapor)	22.60 mg/l		
ATEmix (inhalation-gas)	No information available		

Skin corrosion/irritation Causes severe burns.

Mixture No data available.

Ingredient Skin Corrosion/Irritation Data Test data reported below.

Chemical name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Nitric acid (10 - 20%) CAS#: 7697-37-2	Existing human experience	Human	None reported	None reported	Corrosive to skin	ERMA
Ferric nitrate (1 - 5%) CAS#: 10421-48-4	None reported	None reported	None reported	None reported	Skin irritant	No information available

Serious eye damage/irritation Classification based on data available for ingredients. Causes burns. Risk of serious damage to eyes.

Mixture No data available

# Ingredient Eye Damage/Eye Irritation Data Test data reported below.

Chemical name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Nitric acid (10 - 20%)	Existing human experience	Human	None reported	None reported	Corrosive to eyes	ERMA
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composition

Carcinogenicity Based on available data, the classification criteria are not met.

Mixture No data available.

Ingredient Carcinogenicity Data No data available.

Chemical name	CAS No	ACGIH	IARC	NTP	OSHA
Nitric acid	7697-37-2	-	Group 1	-	Х
			Group 2A		
Eerric pitrate	10421-48-4	-	Group 2A	-	Y

Legend

ACGIH (American Conference of Governmental Industrial Hygienists)	Does not apply
IARC (International Agency for Research on Cancer)	Group 2A - Probably Carcinogenic to
	Humans
	Group 1 - Carcinogenic to Humans
NTP (National Toxicology Program)	Does not apply
OSHA	X - Present

Germ cell mutagenicity Based on available data, the classification criteria are not met.

Mixture invitro Data No data available.

Substance invitro Data No data available.

Mixture invivo Data No data available.

Substance invivo Data

Reproductive toxicity Based on available data, the classification criteria are not met

Mixture No data available.

Ingredient Reproductive Toxicity Data Test data reported below.

#### Oral Exposure Route

Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Rat TD⊾₀	21150 mg/kg	21 days	Effects on Embryo or Fetus Fetotoxicity (except death e.g. stunted fetus)	RTECS
	type Rat	type dose Rat 21150 mg/kg	type dose time Rat 21150 mg/kg 21 days	type         dose         time           Rat         21150 mg/kg         21 days         Effects on Embryo or Fetus           TDLo         Fetotoxicity (except death e.g.         Effects on Embryo or Fetus

Based on available data the classification criteria are not met

12. ECOLOGICAL INFORMATION

Product Code(s) 2168042 Issue Date 28-05-2020 Version 4	Product Name DEHA 2 Reagent Revision Date 24-Jan-2023 Page 11/15	Product Code(s) 2168042 Issue Date 28-05-2020 Version 4		Product Name DEHA 2 Reage Revision Date 24-Jan-2023 Page 12 / 15	nt
Ecotoxicity	Based on available data, the classification criteria are not met.		14. TRANSPOR		
Unknown aquatic toxicity	0% of the mixture consists of components(s) of unknown hazards to the aquatic environment.	DOT_ UN/ID no Proper shipping name	UN3264		
<u>Aixture</u>		Proper shipping name DOT Technical Name	Corrosive Liquid, Acidic, Nitric Acid	Inorganic, N.O.S.	
quatic Acute Toxicity		Transport hazard class(es) Packing Group	8		
lo data available.		Reportable Quantity (RQ) Description	Nitric acid: RQ kg= 3413. UN3264. Corrosive liqui	.53 id, acidic, inorganic, n.o.s. (Nitric A	cid). 8. II. RQ
quatic Chronic Toxicity o data available.		Emergency Response Guide Number		, , , , ,	<i>p</i> · <i>i</i> · <i>i</i> · ·
ubstance		TDG UN/ID no	UN3264		
quatic Acute Toxicity lo data available.		Proper shipping name TDG Technical Name	Corrosive Liquid, Acidic, Nitric Acid	Inorganic, N.O.S.	
Aquatic Chronic Toxicity lo data available.		Transport hazard class(es) Packing Group Description	8 II UN3264 Corrosive liqui	id, acidic, inorganic, n.o.s. (Nitric A	.cid) 8 II
ersistence and degradability		IATA		-,,	
lixture		UN number or ID number Proper shipping name	UN3264		
lo data available.		IATA Technical Name	Corrosive liquid, acidic, ir Nitric Acid	lorganic, n.o.s.	
ioaccumulation		Transport hazard class(es) Packing group	8 11		
nere is no data for this product ixture		ERG Code Special precautions for user	8L A3, A803		
o data available.			A3, A003		
artition coefficient	No data available	IMDG UN number or ID number	UN3264		
obility		Proper shipping name IMDG Technical Name	Corrosive liquid, acidic, ir Nitric Acid	norganic, n.o.s.	
oil Organic Carbon-Water Partitic	n Coefficient No data available	Transport hazard class(es)	8		
Other adverse effects		Packing Group EmS-No	II F-A, S-B		
lo information available		Special precautions for user	274		
		Note:	No special precautions n	ecessary.	
	13. DISPOSAL CONSIDERATIONS	Additional information There is a possibility that this produ	uct could be contained in a re-	agent set or kit composed of variou	ie compatible dangeroue d
Vaste treatment methods		If the item is not in a reagent set or	kit, the classification given ab	ove applies.	is compatible dangerous (
Vaste from residues/unused roducts	Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.	If the item is part of a reagent set o UN3316 Chemical Kit, Hazard Clas If the item is not regulated, the Che	ss 9, Packing Group II or III.		
ontaminated packaging	Do not reuse empty containers.		15. REGULATOR	RY INFORMATION	
JS EPA Waste Number	D002	National Inventories	Complies		
		TSCA DSL/NDSL	Complies		
pecial instructions for disposal	Work in an approved furme hood. Working in a large container, cautiously add small portions of the material to cold water with agitation. Do not breathe the fumes. Adjust to a	TSCA - United States Toxic Subs DSL/NDSL - Canadian Domestic	tances Control Act Section 8(I Substances List/Non-Domesti	b) Inventory ic Substances List	
	pH between 6 and 9 with an alkali, such as soda ash or sodium bicarbonate. If permitted by regulation. Open cold water tap completely, slowly pour the reacted material to the drain.	International Inventories EINECS/ELINCS			
	Check with local municipal and state authorities and waste contractors for pertinent local	EINECS/ELINCS ENCS	Complies Complies		
	information regarding the proper disposal of chemicals.	IECSC	Complies		
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Product Code(s) 2168042 ssue Date 28-05-2020 /ersion 4	Product Name DEHA 2 Reagent Revision Date 24-Jan-2023 Page 13/15	Product Code(s) 2168042 Issue Date 28-05-2020 Version 4		Product Name DEHA 2 Reage Revision Date 24-Jan-2023 Page 14 / 15	nt
ECL - Existing substances	Complies				
ICCS CSI	Complies Complies	US State Regulations			
ICS IZIOC	Complies Complies	<u>California Proposition 65</u> This product does not contain any	Proposition 65 chemicals		
		IMERC: Not applicable	,		
	tory of Existing Chemical Substances/European List of Notified Chemical Substances				
ENCS - Japan Existing and New Ch ECSC - China Inventory of Existing	Chemical Substances	U.S. State Right-to-Know Regula			
KECL - Korean Existing and Evalua	ted Chemical Substances emicals and Chemical Substances	This product may contain substance	es regulated by state right-to-	know regulations.	
CSI - Taiwan Chemical Substance	s Inventory	Chemical name	New Jersey	Massachusetts	Pennsylvania
AICS - Australian Inventory of Chen VZIOC - New Zealand Inventory of (	nical Substances Chemicals	Nitric acid 7697-37-2	X	X	X
,		Ferric nitrate	х	Х	Х

Chemical name	New Jersey	Massachusetts	Pennsylvania
Nitric acid 7697-37-2	Х	х	Х
Ferric nitrate 10421-48-4	х	х	х

U.S. EPA Label Information

16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION Special Comments

Additional information

Global Automotive Declarable Substance List (GADSL)

Not applicable <u>NFPA and HMIS Classifications</u>

NFPA	Health hazards - 3	Flammability - 0	Instability - 0	Physical and chemical properties -
HMIS	Health hazards - 3	Flammability - 0	Physical hazards - 0	Personal protection -
		-	-	'x
				-1

Key or legend to abbreviations and acron	yms used in the safety data sheet

Key or legend to apprevi	ations and acronyms used in the safety data sneet
ACGIH	ACGIH (American Conference of Governmental Industrial Hygienists)
ATSDR	ATSDR (Agency for Toxic Substances and Disease Registry)
CCRIS	CCRIS (Chemical Carcinogenesis Research Information System)
CDC	CDC (Center for Disease Control)
CEPA	CEPA (Canadian Environmental Protection Agency)
CICAD	CICAD (Concise International Chemical Assessment Documents)
ECHA	ECHA (The European Chemicals Agency)
EEA	EEA (European Environment Agency)
EPA	EPA (Environmental Protection Agency)
ERMA	ERMA (New Zealands Environmental Risk Management Authority)
ECOSARS	Estimation through ECOSARS v1.11 part of the Estimation Programs Interface (EPI) Suite
FDA	FDA (Food & Drug Administration)
GESTIS	GESTIS (Information System on Hazardous Substances of the German Social Accident
	Insurance)
HSDB	HSDB (Hazardous Substances Data Bank)
INERIS	INERIS (The National Industrial Environment and Risks Institute)
IPCS INCHEM	IPCS INCHEM (International Programme on Chemical Safety)
IUCLID	IUCLID (The International Uniform Chemical Information Database)
NITE	Japan National Institute of Technology and Evaluation (NITE)
NIH	NIH (National Institutes of Health)
NIOSH	NIOSH (National Institute for Occupational Safety and Health)
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SARA 313 Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Yes Yes No No No

CWA (Clean Water Act) This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

CERCLA This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

U.S. - Department of Homeland Security - Chemical Facility Anti-Terrorism Standards (CFATS) - Security Issues

 Chemical name
 Hazardous Substances RQs
 CERCLA/SARA RQ
 Reportable Quantity (RQ)

 Nitric acid
 1000 lb
 1000 lb
 RQ 1000 lb
 RQ 4000 lb
 RQ 400 lb

CWA - Toxic Pollutants

SARA 313 - Threshold Values %

CWA - Priority Pollutants

U.S. - Department of Homeland Security - Chemical Facility Anti-Terrorism Standards (CFATS) - Security Issues Release - Toxic; Theft - Explosives/Improvised Explosive Device Precursors

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CWA - Hazardous Substances

RQ 1000 lb final RQ RQ 454 kg final RQ RQ 1000 lb final RQ

RQ 454 kg final RQ

EN / AGHS

US Federal Regulations

SARA 311/312 Hazard Categories Acute health hazard

Chemical name

Nitric acid 7697-37-2 Ferric nitrat

10421-48-4

Nitric acid 7697-37-2 Ferric nitrate 10421-48-4

Acute nealth nazard Chronic Health Hazard Fire hazard Sudden release of pressure hazard Reactive Hazard

Chemical name

Nitric acid (CAS #: 7697-37-2) Ferric nitrate (CAS #: 10421-48-4)

CWA - Reportable Quantities 1000 lb

1000 lb

Chemical name Nitric acid (10 - 20%) CAS#: 7697-37-2 1000 lb

Product Code(s) Issue Date 28-0 Version 4	) 2168042 05-2020		Product Name Revision Date Page 15 / 15	DEHA 2 Reagent 24-Jan-2023				
LOLI		I OI I (List of Lists - An	International Cherr	nical Regulatory Databa	se)			(HA
NDF NICNAS		no data Australia National Indu	ustrial Chemicals No	otification and Assessme		NICNAS)		
NIOSH IDLH OSHA PEEN RTECS		PEEN (Pan European RTECS (Registry of T	Safety and Health A Ecological Network oxic Effects of Cher	mical Substances)		of Labor)		Be R
SIDS SYKE USDA		The Finnish Environm USDA (United States	ent Institute (SYKE) Department of Agric	culture)	8			Issue Date 11-
USDC WHO		USDC (United States WHO (World Health C	Department of Com Organization)	imerce)				
		ONTROLS/PERSONAL						Product identifier Product Name
TWA	TWA (time-weight	• ,	STEL	STEL (Short Term I	Exposure Lim	it)		Other means of ic Product Code(s)
MAC X	Maximum Allowat	le Concentration	Ceiling Vacated	Ceiling Limit Value These values have	no official sta	tus. The only		Safety data sheet
~	2000		radatod	binding levels of co in the final OSHA P	ntaminants ar EL. These lis	e those listed ts are for	I	UN/ID no
				reference purposes some reference sta "liberated" exposure regulations.	only. Please te regulations	note that of these		<u>Recommended us</u> Recommended U Uses advised aga Restrictions on u
SKN*	Skin designation		SKN+	Skin sensitization				Details of the sup
RSP+ C M	Respiratory sensit Carcinogen mutagen	ization	R	Hazard Designation Reproductive toxica				Manufacturer Ado
Prepared By	maagen	Hach Product Complia	ance Department					Hach Company, P.
Issue Date		28-05-2020						Emergency telepl +1(303) 623-5716
Revision Date		24-Jan-2023						
Revision Note		None						Classification
Disclaimer								Regulatory Statue This chemical is co
				nation and incorporate idards and regulations		ial site		Corrosive to metal
WARRANTY IS E	ION CONTAINED H EXPRESSED OR IM M THE USE THERE	PLIED REGARDING TH	DATA CONSIDERE	D TO BE ACCURATE. THESE DATA OR THE	HOWEVER,	NO FO BE		Skin corrosion/irrit Serious eye dama Specific target org
HACH COMPAN	Y©2022							Hazards not other Not applicable
		End of S	afety Data Sheet					Label elements
								Signal word Danger
EN / AGHS					F	Page 15/15		EN / AGHS
Product Code(s) Issue Date 11-F Version 7.6			Product Name Revision Date Page 2 / 16	Molybdate 3 Reagent 08-Feb-2023	for Silica			Product Code(s) Issue Date 11-Fe Version 7.6
								Description of fire
L.S.								General advice
$\mathbf{X}$								Inhalation
								Eye contact
	orrosive to metals evere skin burns and							Skin contact
Precautionary st P280 - Wear prot	tatements ective gloves, protect	bugh prolonged or repea	tion, and face prote	ection				Ingestion
P303 + P361 + P P304 + P340 - IF	353 - IF ON SKIN (o INHALED: Remove 338 - IF IN EYES: R	victim to fresh air and ke	ff immediately all con eep at rest in a posi	ntaminated clothing. Rin ition comfortable for brea es. Remove contact lens	athing			Self-protection of
P310 - Immediate P363 - Wash con	ely call a POISON Cl taminated clothing b	ENTER or doctor/physic efore reuse	ian					Most important s
		to an approved waste o	disposal plant					Symptoms
P270 - Do not ea P234 - Keep only		en using this product						Indication of any Note to physician
Other Hazards K Toxic to aquatic li	(nown							
, oxic to aquatic li		OMPOSITION/INFO	RMATION ON				1	
Substance	3. 61		A REAL ON ON T	INGREDIENTS			1	Quitable F vice
Not applicable								Suitable Extingui
<u>Mixture</u>								Unsuitable Exting
Chemical Family Chemical nature	•	Mixture. Aqueous solution of in						Specific hazards chemical Hazardous combi
Percent ranges		fidential product infor	rmation is applicab		Dec		1	Special protective
		ical name		CAS No 7664-93-9	Percent Range 10 - 13%	HMRIC #		fire-fighters

 
 Percent

 Range

 10 - 13%

 10 - 13%

 <10%</td>
 Sulfuric acid Sulfuric acid, sodium salt (1:1) Molybdate (MoO42-), dihydrogen, (T-4)-7664-93-9 7681-38-1 7782-91-4 4. FIRST AID MEASURES

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# SAFETY DATA SHEET

# Right<sup>™</sup>

Issue Date 11-Feb-2021 Rev	vision Date 08-Feb-2023	Version 7.6	Page 1/16
Product identifier_	1. IDENTIFICATION		
Product Name	Molybdate 3 Reagent for Silica		
<u>Other means of identification</u> Product Code(s)	199549		
Safety data sheet number	M00187		
UN/ID no	UN3264		
Recommended use of the chemica Recommended Use Uses advised against Restrictions on use	Il and restrictions on use Laboratory reagent. Silica determinatior Consumer use. For Laboratory Use Only.	1.	
Details of the supplier of the safety			
Manufacturer Address	and, CO 80539, USA, +1(970) 669-3050		
Emergency telephone number	and, CO 80339, USA, + 1(970) 009-3030		
+1(303) 623-5716 - 24 Hour Service			
Classification_	2. HAZARDS IDENTIFICA	TION	
Regulatory Status	us by the 2012 OSHA Hazard Communica	tion Standard (29 CFR 1910	).1200)
Corrosive to metals		Category 1	
Skin corrosion/irritation Serious eye damage/eye irritation		Category 1 SL Category 1	ib-category A
Specific target organ toxicity (repeate Hazards not otherwise classified (I		Category 1	
Not applicable			
Label elements			
Signal word Danger			
EN / AGHS			Page 1/1
Product Code(s) 199549		ne Molybdate 3 Reagent fo	r Silica
Issue Date 11-Feb-2021		te 08-Feb-2023	r Silica
Issue Date 11-Feb-2021 Version 7.6	Revision Dat	te 08-Feb-2023	r Silica
Issue Date 11-Feb-2021 Version 7.6 Description of first aid measures	Revision Dat	te 08-Feb-2023	
Issue Date 11-Feb-2021 Version 7.6 Description of first aid measures General advice	Revision Dat Page 3 / 16 Show this safety data sheet to the doctor	te 08-Feb-2023 or in attendance. Immediate opped, give artificial respirati h-to-mouth method if victim i the aid of a pocket mask ei al device. If breathing is differ	medical attention is ion, Get medical ingested or inhaled the juipped with a one-way
Issue Date 11.Feb-2021 Version 7.6 Description of first aid measures General advice Inhalation	Revision Dat Page 3 / 10 Show this safety data sheet to the doctor required. Remove to fresh air. If breathing has st attention immediately. Do not use mout substance; give artificial respiration with valve or other proper respiratory medica- should) give oxygen. Delayed pulmonar	te 08-Feb-2023	medical attention is on. Get medical ingested or inhaled the uipped with a one-way util, (trained personnel mediate medical t least 15 minutes. Keep eye wide open
Product Code(s) 199549 Issue Date 11Feb-2021 Version 7.6 Description of first aid measures General advice Inhalation Eye contact Skin contact	Revision Dat Page 3 / 10 Show this safety data sheet to the doctor required. Remove to fresh air. If breathing has st attention immediately. Do not use mout substance; give artificial respiration with valve or other proper respiratory medica- should) give artificial respiration with valve or other proper respiratory medica- should give corgen. Delayed pulmonar advice/attention.	te 08-Feb-2023 or in attendance. Immediate ho-mouth method If victim the aid of a pocket mask ee id evice. If breathing is diffi- y defma may occur. Get im also under the eyelids, for a saasy to do. Continue rinsing et immediate medical advi nty of water while removing	medical attention is on. Get medical ingested or inhaled the uipped with a one-way util, (trained personnel mediate medical t least 15 minutes. Keep eye wide open ce/attention.
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Issue Date 11-Feb-2021 Version 7.6 Description of first aid measures General advice Inhalation Eye contact Skin contact Skin contact Ingestion Self-protection of the first aider Most important symptoms and effe Symptoms Indication of any immediate medic Note to physicians	Revision Dall Page 3 / 10 Page	te 08-Feb-2023 or in attendance. Immediate opped, give artificial respirati ho-mouth method f victim ho-mouth method f victim y edema may occur. Get in also under the eyelids, for a sasy to do. Continue rinsing Get immediate medical advi ny of water while removing cerattention. wards plenty of water. Never users of the eyelids, for a skin. Use barrier to give mo ed. pastric lavage or emesis is hogs should be investigate tat edema may occur. Mar thy sputum, and high pulse propriate to local circumstar ng fire may be inefficient. and mucous membranes. T	medical attention is ion. Get medical ingested or inhaled the jupped with a one-way ult, (trained personnel medicale medical t least 15 minutes. Keep eye wide open calatention. all contaminated clothe give anything by mouth medical nnel are aware of the yeart spread of outh-to-mouth contraindicated. d. Do not give sed decrease in blood pressure.
Issue Date 11.Feb-2021 Version 7.6 Description of first aid measures General advice Inhalation Eye contact Skin contact Ingestion Self-protection of the first aider <u>Most important symptoms and effi</u> Symptoms	Revision Dat Page 3 / 10 Page 3 / 10 Show this safety data sheet to the doct required. Remove to fresh air. If breathing has st attention immediately. Do not use mout substance; give atflidal respiration with valve or other proper respiratory medica- should give varificial respiration with valve or other proper respiratory medica- should give oxygen. Delayed pulmonar advice/attention. Rines immediately with plenty of water, Remove contaci lenses, if present and while rinsing. Do not rub affected area. I Wash of immediately with soap and ple and shoes. Get immediate medical advi Clean mouth with water and drink affere to an unconscious person. Do NOT indi- advice/attention. Avoid contact with skin, eyes or clothing material(s) involved, take perceations to contamination. Avoid direct contact with resuscitation. <b>Extended the state and delayed</b> Possible performation of stom prostient per	te 08-Feb-2023 or in attendance. Immediate opped, give artificial respirati ho-mouth method if victim the aid of a pocket mask ee di device. It breathing is diffic get immediate medical advi y edema may occur. Get im also under the eyelids, for a saay to do. Conthue rinsing Get immediate medical advi ny of water while removing certatention. Wards plenty of water. Never user while removing certatention. A structure while removing certatention. Wards plenty of water. Never skin. Use barrier to give mo ed gastric lavage or emesis is hagus should be investigate tat dema may occur. Mar thy sputum, and high pulse upropriate to local circumstan ng fire may be inefficient. and mucous membranes. T	medical attention is ion. Get medical ngested or inhaled the jupped with a one-way valit, (trained personnel medicate medical t least 15 minutes. Keep eye wide open celation. all contaminated clothe give anything by mouth medical give anything by mouth medical innel are aware of the vent spread of uth-to-mouth contraindicated. d. Do not give ved decrease in blood pressure.
Issue Date 11-Feb-2021 Version 7.6 Description of first aid measures General advice Inhalation Eye contact Skin contact Ingestion Self-protection of the first aider Most important symptoms and effor Symptoms Indication of any immediate medic Note to physicians Suitable Extinguishing Media Unsuitable Extinguishing Media Unsuitable Extinguishing Media Unsuitable Extinguishing Media Specific hazards arising from the chemical	Revision pall Page 3/16 Page 3/16 Show this safety data sheet to the doct required. Remove to fresh air. If breathing has da taterition inmediately. Do not use mout substance: give artificial respiration with value or other proper respiratory medic should) give oxygen. Delayed pulmonar advice/attention. Rinse immediately with plenty of water, Remove contact lenses, if present and o while rinsing. Do not rub affected area. I Wash off immediately with soap and ple and shoes. Get immediate medical advi- dation of the state of the state of the and shoes. Get immediate medical advi- dation and spectra and the state of the and shoes. Get immediate medical advi- dation and spectra and the state of the and shoes. Get immediate medical advi- dation and spectra and the state of the and shoes. A state and advised attention to contamination. Avoid direct contact with resuscitation. Avoid direct contact with resuscitation. Avoid direct contact with resuscitation. Avoid direct contact and the possible perforation of stomach or esop optimical antidotes. Apphysis from glot pressure may occur with moist raise, for <b>Direct contain</b> stores of the state of surrounding environment. Caution: Use of water spray when fightli The noduct causes burns of yess, shi can lead to release of imitating gases ar Suffur oxides. Sodium oxides. Friefighters should wear self-contained i Use personal protection equipment.	to 08-Feb-2023     in attendance. Immediate     apped, give artificial registry     also under the eyelids, for a     asasy to do. Continue rissing     also under the eyelids, for a     asasy to do. Continue rissing     also under the eyelids, for a     asasy to do. Continue rissing     also under the eyelids, for a     asasy to do. Continue rissing     also under the eyelids, for a     asasy to do. Continue rissing     also under the eyelids, for a     asasy to do. Continue rissing     avads plenty of water. Never     uce vomiting. Get immediate     prostect themselves and pre     skin. Use barrier to give mo     de     gastric lavage or emesis is     hagus should be investigat     the deem ang occur. Mar     thy sputum, and high pulse     IFRES     propriate to local circumstar     and mucous membranes. T     d vapors.	medical attention is ion. Get medical ngested or inhaled the jupped with a one-way valit, (trained personnel medicate medical t least 15 minutes. Keep eye wide open celation. all contaminated clothe give anything by mouth medical give anything by mouth medical innel are aware of the vent spread of uth-to-mouth contraindicated. d. Do not give ved decrease in blood pressure.
Issue Date 11-Feb-2021 Version 7.6 Description of first aid measures General advice Inhalation Eye contact Skin contact Skin contact Skin contact Ingestion Self-protection of the first aider Most important symptoms and effor Symptoms Indication of any immediate medic Note to physicians Suitable Extinguishing Media Unsuitable Extinguishing Media Unsuitable Extinguishing Media Unsuitable Extinguishing Media Specific hazards arising from the chemical	Revision Dat Page 3 / 10 Page 3 / 10 Show this safety data sheet to the doctor required. Remove to fresh air /f breathing has di- attention immediately. Do not use mouth value or other proper respiratory medica should) give oxygen. Delayed pulmonar advice/attention. Rinse immediately with plenty of water, Remove contact lenses, if present and - while rinsing. Do not rub affected area. I Wash off immediately with soap and ple and shoes. Get immediate medical advi Clean mouth with water and drink after to an unconscious person. Do NOT ind advice/attention. Avoid contact with skin, eyes or clothing resuscitation. Avoid direct contact with resuscitation. Avoid direct contact with resuscitation. Avoid direct contact with resuscitation. <b>Ext. both acute and delayed</b> . Burning sensation. <b>at Heroduct</b> is a corrosive material. Use of Possible perforation of stomach or esop chemical antidotes. Asphysia from glot pressure may occur with moist rales, for <b>Dessible perforation</b> for stomach or esop chemical antidotes. Asphysia from glot pressure may occur with moist rales, for <b>Dessible perforation</b> of stomach or esop chemical antidotes. Asphysia from glot pressure may occur with moist rales, for <b>Dessible perforation</b> of stomach or esop chemical antidotes. Asphysia from glot pressure may occur with moist rales, for <b>Dessible perforation</b> of stomach or esop chemical antidotes. Desphares that are ap surrounding environment. Statur oxides. Sofium oxides.	to 08-Feb-2023     or in attendance. Immediate     opped, give artificial respirati     to-e-mouth method of wickim     it-be-mouth method of wickim     also under the eyelids, for a     asay to do. Continue rinsing     celations of the without of the wicking     it-be-mouth method of wickim     also under the eyelids, for a     sasy to do. Continue rinsing     celations     also under the eyelids, for a     sasy to do. Continue rinsing     celations     it-be-mouth of wickim     ards plenty of water. Never     ce vomiting. Get immediate     actions     protect themselves and pre     skin. Use barrier to give me     de     gastric lavage or emesis is     hagus should be investigate     tal edema may occur. Mar     thy sputum, and high pulse     JREES     propriate to local circumstar     ng fire may be inefficient.     and mucous membranes. T     the vapors.     breathing apparatus and full     EASUREES     mod to an emergency involvin	medical attention is ion. Get medical ngested or inhaled the upped with a one-way all, (rither personal medical medical t least 15 minutes. Keep eye wide open celatention. all contaminated clothe give anything by mouth medical nnel are aware of the event spread of uth-to-mouth contraindicated. d. Do not give ked decrease in blood pressure. noes and the hermal decomposition firefighting turnout gea

Product Code(s) 199549 Issue Date 11-Feb-2021 Version 7.6	Rev	duct Name Molybdate 3 Read ision Date 08-Feb-2023 e 4 / 16	gent for Silica			
	guidelines/procedures. See Se of the US, only persons proper respond to a spill involving che	ly qualified according to state				
Personal precautions, protective e	quipment and emergency proc	edures				
Personal precautions	Avoid contact with skin, eyes of protective equipment as requir safe areas. Keep people away	ed. Attention! Corrosive mate				
Other Information	Refer to protective measures I	isted in Sections 7 and 8.				
Environmental precautions						
Environmental precautions	Prevent further leakage or spil environment. Do not allow to e					
Methods and material for containm	ent and cleaning up					
Methods for containment	Prevent further leakage or spil	lage if safe to do so.				
Methods for cleaning up	Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Take up mechanically, placing in appropriate containers for disposal.					
Prevention of secondary hazards	Clean contaminated objects and areas thoroughly observing environmental regulations.					
Reference to other sections	nce to other sections See section 8 for more information. See section 13 for more information.					
	7. HANDLING AND	STORAGE				
Precautions for safe handling						
Advice on safe handling	Handle in accordance with god skin, eyes or clothing. In case Handle product only in closed drink or smoke when using this reuse.	of insufficient ventilation, wear system or provide appropriate	suitable respiratory equipment exhaust ventilation. Do not eat			
Conditions for safe storage, includ	ing any incompatibilities					
Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from moisture. Store locked up. Keep out of the reach of children. Store away from other materials.						
Flammability class	nmability class Class IIIB					
8. EX	POSURE CONTROLS/PE	RSONAL PROTECTION				
Control parameters						
Exposure Guidelines						
Chemical name	ACGIH TLV	OSHA PEL	NIOSH			
Sulfuric acid CAS#: 7664-93-9	TWA: 0.2 mg/m <sup>3</sup> thoracic particulate matter	TWA: 1 mg/m <sup>3</sup> (vacated) TWA: 1 mg/m <sup>3</sup>	IDLH: 15 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup>			

Sulfuric acid	TWA: 0.2 mg/m3 thoracic	TWA: 1 mg/m <sup>3</sup>	IDLH: 15 mg/m <sup>3</sup>			
CAS#: 7664-93-9	particulate matter	(vacated) TWA: 1 mg/m <sup>3</sup>	TWA: 1 mg/m <sup>3</sup>			
Molybdate (MoO42-), dihydrogen,	TWA: 0.5 mg/m <sup>3</sup> Mo	TWA: 5 mg/m <sup>3</sup>	IDLH: 1000 mg/m <sup>3</sup> Mo			
(T-4)-	respirable particulate matter	(vacated) TWA: 5 mg/m <sup>3</sup>	-			
CAS#: 7782-91-4						
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Product Code(s) 199549 Issue Date 11-Feb-2021 Version 7.6			Product Name Mol Revision Date 08-F Page 6 / 16		agent for Silica
Autoignition temperature		No data availab	le		
Decomposition temperature		No data availab	le		
Dynamic viscosity		No data availab	le		
Kinematic viscosity		No data availab	le		
Solubility(ies)					
Water solubility					
Water solubility classificat	ion	Water s	olubility	Wat	er Solubility Temperature
Soluble		> 1000 mg/L		25 °C / 77 °F	
Solubility in other solvents					
	Chemical Name Solubility classifi		Solubility		Solubility Temperature
Acid Soluble		Soluble	> 1000 mg	L	25 °C / 77 °F
Other information					
Metal Corrosivity Classified as corrosive to metal a	ccording t	o GHS criteria			
Steel Corrosion Rate Aluminum Corrosion Rate	ooo, ang e		151.6 mm/yr / 5.97 No data available	in/yr	

Volatile Organic Compounds (VOC) Content

Chemical name	CAS No	Volatile organic compounds (VOC) content	CAA (Clean Air Act)
Sulfuric acid	7664-93-9	No data available	-
Sulfuric acid, sodium salt (1:1)	7681-38-1	No data available	-
Molybdate (MoO42-), dihydrogen, (T-4)-	7782-91-4	Not applicable	-

## Explosive properties

Upper explosion limit Lower explosion limit	No data available No data available
Flammable properties	
Flash point Method	> 100 °C / 212 °F CC (closed cup)
Flammability Limit in Air Upper flammability limit: Lower flammability limit:	No data available No data available
Oxidizing properties	Not classified according to GHS criteria.
Bulk density	No data available

10. STABILITY AND REACTIVITY

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Product Name Molybdate 3 Reagent for Silica Revision Date 08-Feb-2023 Page 5 / 16 Product Code(s) 199549 Issue Date 11-Feb-2021 Version 7.6 Appropriate engineering controls Engineering Controls Showers Eyewash stations Ventilation systems. Individual protection measures, such as personal protective equipment Respiratory protection No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required. Wear breathing apparatus if exposed to vapors/dusts/aerosols. Wear suitable gloves. Impervious gloves. Gloves must be inspected prior to use. The selected protective gloves have to satisfy the specifications of EU Directive 2016/425 and the standard EV 374 derived from it. Chemical resistant gloves made of butyl rubber or nitrile rubber category III according to EN 374-1:2016. Hand Protection Eye/face protection Face protection shield. Skin and body protection Wear suitable protective clothing. Long sleeved clothing. Chemical resistant apron. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Regular cleaning of equipment, work area and clothing is recommended. Avoid contact with skin, eyes or clothing. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Contaminated work clothing should not be allowed out of the workplace. Wash hands before breaks and immediately after handling the product. General Hygiene Considerations Local authorities should be advised if significant spillages cannot be contained. Do not allow into any sewer, on the ground or into any body of water. Environmental exposure controls None under normal processing. Thermal hazards

9. PHYSICAL AND CHEMICAL PROPERTIES						
Information on basic physical and chemical properties						
Physical state         Liquid           Appearance         clear           Odor         Odorless	Color         Colorless to light yellow           Odor threshold         Not applicable					
Property	Values Remarks • Method					
Molecular weight	Not applicable					
рН	< 2 @ 20 °C					
Melting point / freezing point	~ -13 °C / 8.6 °F					
Initial boiling point and boiling range	~ 100 °C / 212 °F					
Evaporation rate	1.17 (water = 1)					
Vapor pressure	22.127 mm Hg / 2.95 kPa at 25 °C / 77 °F					
Relative vapor density	0.62					
Specific Gravity	1.2					
Partition coefficient	Not applicable					
Soil Organic Carbon-Water Partition Coefficient	Not applicable					
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Product Code(s) 199549 Issue Date 11-Feb-2021 Version 7.6		me Molybdate 3 Reagent for Silica ate 08-Feb-2023 6			
Reactivity Corrosive on contact with water. Corr	osive to metal.				
<u>Chemical stability</u> Stable under normal conditions.					
Explosion data Sensitivity to Mechanical Impac Sensitivity to Static Discharge	t None. None.				
Possibility of hazardous reactions None under normal processing.					
Hazardous polymerization Hazardous polymerization does not or	cur.				
Conditions to avoid Exposure to air or moisture over prolo	nged periods.				
Incompatible materials_ Oxidizing agent. Acids. Bases.					
Hazardous decomposition products Thermal decomposition can lead to re	ease of irritating and toxic gases and va	ipors.			
	11. TOXICOLOGICAL INFO	RMATION			
Information on likely routes of expo	sure				
Product Information					
Inhalation	headache, dizziness, and weakness for tightness in the chest, shortness of bre	orrosive fumes/gases may cause coughing, choking, or several hours. Pulmonary edema may occur with eath, bluish skin, decreased blood pressure, and substances can lead to a toxic edema of the lungs.			
Eye contact	Causes burns. Corrosive to the eyes a Causes serious eye damage. May cau	nd may cause severe damage including blindness. se irreversible damage to eyes.			
Skin contact	Corrosive. Causes severe burns. Avoi	d contact with skin and clothing.			
Ingestion Causes burns. Ingestion causes burns of the upper digestive and respiratory tracts. May cause severe burning pain in the mouth and stomach with vomiling and diarrhea of dark blood. Blood pressure may decrease. Brownish or yellowish stains may be seen around th mouth. Swelling of the throat may cause shortness of breath and choking. May cause lung damage if swallowed. May be fait if swallowed and enters anivays.					
Symptoms	Redness. Burning. May cause blindne	ss. Coughing and/ or wheezing.			
Acute toxicity Based on available data, the classification	tion criteria are not met				
Mixture					
Test data reported below.					
Test data reported below. Oral Exposure Route					

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Endpoint type Rat LD50	Reported dose 7099 mg/kg	Exposure time None reported	Toxicological effects None reported	Key literature references and sources for data Outside testing
Ingredient Acute T	oxicity Data			
Test data reported I	below.			

## Oral Exposure Route

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Sulfuric acid, sodium salt (1:1) (10 - 13%) CAS#: 7681-38-1	Rat LD50	2490 mg/kg	None reported	None reported	IUCLID
Molybdate (MoO42-), dihydrogen, (T-4)- (<10%) CAS#: 7782-91-4	Rat LD50	2689 mg/kg	None reported	None reported	Vendor SDS

Dermal Exposure Route

Unknown Acute Toxicity 8.33% of the mixture consists of ingredient(s) of unknown toxicity.

## Acute Toxicity Estimations (ATE)

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)	No information available
ATEmix (dermal)	30,012.00 mg/kg
ATEmix (inhalation-dust/mist)	No information available
ATEmix (inhalation-vapor)	No information available
ATEmix (inhalation-gas)	No information available

# Skin corrosion/irritation

Mixture Test data reported below

Test method	Species	Reported dose	Exposure	Results	Key literature references and
United States	Rabbit	0.5 mL	time	Not corrosive	sources for data
Department of			4 hours	to skin	Internal Data
Transportation (DOT)					Outside testing
Skin Corrosion Test					, , , , , , , , , , , , , , , , , , ,

# Ingredient Skin Corrosion/Irritation Data Test data reported below.

Chemical name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Sulfuric acid (10 - 13%) CAS#: 7664-93-9	Existing human experience	Human	None reported	None reported	Corrosive to skin	HSDB
Sulfuric acid, sodium salt (1:1) (10 - 13%) CAS#: 7681-38-1	Standard Draize Test	Rabbit	500 mg	4 hours	Not corrosive or irritating to skin	ECHA
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(10 - 13%) CAS#: 7664-93-9	TCLo	Changes in teeth and supporting structures	

Carcinogenicity Based on available data, the classification criteria are not met.

# Mixture No data available.

# Ingredient Carcinogenicity Data No data available.

Chemical name	CAS No	ACGIH	IARC	NTP	OSHA
Sulfuric acid	7664-93-9	A2	Group 1	Known	Х
Sulfuric acid, sodium salt (1:1)	7681-38-1	-	-	-	-
Molybdate (MoO42-), dihydrogen, (T-4)-	7782-91-4	A3	-	-	-

## Leaend

ACGIH (American Conference of Governmental Industrial Hygienists)	A2 - Suspected Human Carcinogen A3 - Animal Carcinogen
IARC (International Agency for Research on Cancer)	Group 1 - Carcinogenic to Humans
NTP (National Toxicology Program)	Known - Known Carcinogen
OSHA	X - Present

Germ cell mutagenicity Based on available data, the classification criteria are not met.

Mixture invitro Data No data available.

Substance invitro Data Test data reported below

Chemical name	Test	Cell Strain	Reported dose	Exposure time	Results	Key literature references and sources for data
Sulfuric acid (10 - 13%) CAS#: 7664-93-9	Cytogenetic analysis	Hamster ovary	4 mmol/L	None reported	Positive test result for mutagenicity	No information available

# Mixture invivo Data No data available.

Substance invivo Data No data available.

<u>Reproductive toxicity</u> Based on available data, the classification criteria are not met.

# Mixture No data available.

Ingredient Reproductive Toxicity Data Test data reported below.

## Inhalation (Vapor) Exposure Route

Chemical name	Endpoint	Reported	Exposure	Toxicological effects	Key literature references and

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# Serious eye damage/irritation Classification based on data available for ingredients. Causes burns. Risk of serious damage to eyes.

Mixture No data available.

# Ingredient Eye Damage/Eye Irritation Data Test data reported below.

Chemical name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Sulfuric acid (10 - 13%) CAS#: 7664-93-9	Existing human experience	Human	None reported	None reported	Corrosive to eyes	HSDB
Sulfuric acid, sodium salt (1:1) (10 - 13%) CAS#: 7681-38-1	Standard Draize Test	Rabbit	100 mg	None reported	Eye irritant	ECHA

Respiratory or skin sensitization Based on available data, the classification criteria are not met.

Mixture No data available.

# Ingredient Sensitization Data No data available.

<u>STOT - single exposure</u> Based on available data, the classification criteria are not met.

# Mixture No data available.

Ingredient Specific Target Organ Toxicity Single Exposure Data Test data reported below.

## Inhalation (Vapor) Exposure Route

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Sulfuric acid (10 - 13%) CAS#: 7664-93-9	Human TD⊾	0.144 mg/L	5 minutes	Lungs, Thorax, or Respiration Dyspnea	RTECS

<u>STOT - repeated exposure</u> Causes damage to organs through prolonged or repeated exposure.

# Mixture No data available.

Ingredient Specific Target Organ Toxicity Repeat Exposure Data Test data reported below.

## Inhalation (Vapor) Exposure Route

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Sulfuric acid	Human	0.003 mg/L	168 days	Musculoskeletal	RTECS
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	type	dose	time		sources for data
Sulfuric acid	Rabbit	0.02 mg/L	7 hours	Specific Developmental	No information available
(10 - 13%)	TCLo	-		Abnormalities	
CAS#: 7664-93-9				Musculoskeletal system	

Aspiration hazard Based on available data, the classification criteria are not met.

	12. ECOLOGICAL INFORMATION			
Ecotoxicity	Based on available data, the classification criteria are not met.			

aquatic toxicity	8.33% of the mixture consists of components(s) of unknown hazards to the aquatic
	environment.

## <u>Mixture</u>

Aquatic Acute Toxicity No data available.

Aquatic Chronic Toxicity No data available.

Substance

Aquatic Acute Toxicity Test data reported below

## Crustacea

Chemical name	Exposure	Species	Endpoint	Reported dose	Key literature references and
	time		type		sources for data
Sulfuric acid, sodium salt (1:1) (10 - 13%) CAS#: 7681-38-1	48 Hours	Daphnia magna	EC <sub>50</sub>	190 mg/L	IUCLID
Aquatic Chronic Toxicity No data available.					

Persistence and degradability

Mixture No data available

Mixture

No data	available.				

Mobility

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Partition coefficient

Soil Organic Carbon-Water Partition Coefficient

Other adverse effects No information available

13. DISPOSAL CONSIDERATIONS			
Waste treatment methods			
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Not applicable

Not applicable

Unknown a



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Waste from residues/unused products	Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.
Contaminated packaging	Do not reuse empty containers.
US EPA Waste Number	D002
Special instructions for disposal	Dilute to 3 to 5 times the volume with cold water. Adjust to a pH between 6 and 9 with an alkali, such as soda ash or sodium bicarbonate. If permitted by regulation. Open cold water tap completely, slowly pour the reacted material to the drain. Allow cold water to run for 5 minutes to completely flush the system. Check with local municipal and state authorities an waste contractors for pertinent local information regarding the proper disposal of chemicals
	14. TRANSPORT INFORMATION
DOT UNID no Proper shipping name DOT Technical Name Transport hazard class(es) Packing Group Reportable Quantity (RQ) Description Emergency Response Guide Number	UN3264 Corrosive Liquid, Acidic, Inorganic, N.O.S. Sulfuric acid 8 III Sulfuric acid: RQ kg= 3588.42 UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Sulfuric acid), 8, III, RQ 154
TDG UN/ID no Proper shipping name TDG Technical Name Transport hazard class(es) Packing Group Description	UN3264 Corrosive Liquid, Acidic, Inorganic, N.O.S. Sulfuric acid 8 III UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Sulfuric acid), 8, III
IATA UN number or ID number Proper shipping name IATA Technical Name Transport Nazard class(es) Packing group ERG Code Special precautions for user UN number or ID number	UN3264 Corrosive liquid, acidic, inorganic, n.o.s. Suffuis acid 8 III 8L A3, A803 UN3264
IN Indition of the Indition Proper shipping name IMDG Technical Name Transport hazard class(es) Packing Group EmS-No Special precautions for user Marine pollutant	Crossive liquid, acidic, inorganic, n.o.s. Suffricacid 8 III F-A, S-B 223, 274 No

If the item is not in a reagent set or kit the classification given above applies. If the item is part of a reagent set or kit the classification given above applies.

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Sulfuric acid 7664-93-9	1000 lb	1000 lb	RQ 1000 lb final RQ RQ 454 kg final RQ
U.S DEA (Drug Enforcement Administration) List I & List II			

Chemical name	U.S DEA (Drug Enforcement Administration) - List I or Precursor Chemicals	U.S DEA (Drug Enforcement Administration) - List II or Essential Chemicals
Sulfuric acid	Not Listed	50 gallon Export Volume (exports,
(10 - 13%)		transshipments and international
CAS#: 7664-93-9		transactions to designated countries
		given in 1310.08(b))

## US State Regulations

<u>California Proposition 65</u> This product contains the following Proposition 65 chemicals

Chemical name	California Proposition 65
Sulfuric acid (CAS #: 7664-93-9)	Carcinogen

WARNING: This product can expose you to chemicals including Sulfuric acid, which is known to the State of California to cause cancer. For more information, go to <u>http://www.P65Warnings.ca.gov</u>

IMERC: Not applicable

## U.S. State Right-to-Know Regulations

This product may contain substances regulated by state right-to-know regulations.

Chemical name	New Jersey	Massachusetts	Pennsylvania
Sulfuric acid	Х	X	Х
7664-93-9			
IIS EPA Label Information			

EPA Label Information

Chemical name	FIFRA	FDA
Sulfuric acid	180.0910	21 CFR 184.1095
Sulfuric acid, sodium salt (1:1)	180.0920	-

16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION

# Special Comments None

## Additional information

# Global Automotive Declarable Substance List (GADSL) Not applicable

NFPA	Health hazards - 3	Flammability - 1	Instability - 0	Physical and chemical
		-	-	properties -
HMIS	Health hazards - 3			

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	15. RE	GULATORY INFORM	IATION	
National Inventories				
TSCA	Complies			
DSL/NDSL	Complies			
TSCA - United States Toxic Subs DSL/NDSL - Canadian Domestic			List	
International Inventories				
EINECS/ELINCS	Complies			
ENCS	Complies			
ECSC	Complies			
KECL - Existing substances	Complies			
PICCS	Complies			
TCSI	Complies Complies			
NZIOC	Complies			
AZIOC	Complies			
PICCS - Philippines Inventory of TCSI - Taiwan Chemical Substar AICS - Australian Inventory of Ch	nces Inventory nemical Substance	nemical Substances		
PICCS - Philippines Inventory of TCSI - Taiwan Chemical Substar AICS - Australian Inventory of Cf NZIoC - New Zealand Inventory of US Federal Regulations SARA 313 Section 313 of Title III of the Supe	Chemicals and Ch nees Inventory nemical Substance of Chemicals	nemical Substances	of 1986 (SARA). This pro	iduct contains a chemica
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PICCS - Philippines Inventory of TCSI - Taivan Chemical Substar AICS - Australian Inventory of U NZIOC - New Zealand Inventory of US Federal Regulations SARA 313 Section 313 of Title III of the Supe or chemicals which are subject to Chemica	Chemicals and Ch noes Inventory emical Substance of Chemicals rfund Amendment the reporting requi I name	nemical Substances	e 40 of the Code of Feder SARA 313 - Threshold	al Regulations, Part 372
PICCS - Philippines Inventory of TCSI - Taiwar Chemical Substant AICS - Australian Inventory of Cf NZIOC - New Zealand Inventory of USE Federal Regulations SARA 313 Section 313 of Title III of the Supe or chemicals which are subject to Chemica Sulfuric acid (CAS	Chemicals and Ch noes Inventory emical Substance of Chemicals rfund Amendment the reporting requi I name S #: 7664-93-9)	nemical Substances	e 40 of the Code of Feder	al Regulations, Part 372
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PICCS - Philippines Inventory of TCSI - Taiwar Chemical Subtant AICS - Australian Inventory of Ch NZIOC - New Zealand Inventory of US Federal Regulations SARA 313 Section 313 of Title III of the Supe or chemicals which are subject to <u>Chemica</u> Suffuric acid (CAX SARA 311/312 Hazard Categorie	Chemicals and Ch noes Inventory emical Substance of Chemicals rfund Amendment the reporting requi I name S #: 7664-93-9)	emical Substances	e 40 of the Code of Feder SARA 313 - Threshold	al Regulations, Part 372
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CERCLA This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
EN / AGHS			Page 13 / 16

Key or legend to abbreviations and acconyms used in the safety data sheet           ACCIH         ACCIH (American Conference of Governmental Industrial Hygienists) ATSDR           ATSDR         ATSDR (Agency for Toxic Substances and Disease Registry) CCRIS           CCRIS         CCRIS (Chemical Carcinogenesis Research Information System) CCR           CCRA         CEPA (Canadian Environmental Protection Agency) CCRD           CEPA         CEPA (Canadian Environmental Protection Agency) ECAA           ECHA         ECHA (The European Environmental Arotection Agency) EFA           ECAA         EEA (European Environmental Arotection Agency) EFA           EAA         EAX (European Environmental Arotection Agency) EFA           EAA         EAX (European Environmental Arotection Agency)           EFA         Estimation through ECOSARS v1.11 part of the Estimation Programs Inter FDA           EGOSARS         Estimation through ECOSARS v1.11 part of the Estimation Programs Inter FDA           EGSTIS         GESTIS           GESTIS         Information System on Hazardous Substances of the German S Insurance)           INCERS         INERIS (The National Institute of Technology and Evaluation (NTE)           INCENS         INERIS (The National Institute of Technology and Evaluation (NTE)           NITE         Japan National Institute for Occupational Safety and Health)           NICLID         UCLID (The Internati	lica						Product Code( Issue Date 11 Version 7.6	
ACGIH ACGIH (American Conference of Governmental Industrial Hygienists) ATSDR ACGIH Commical Carcinogenesis Research Information System) CCRIS CCRIS CCRIS (Chemical Carcinogenesis Research Information System) CCR CDC (Center for Disease Control) CCPA (CEPA (Canadian Environmental Protection Agency) CICAD (CICAD (Concise International Chemical Assessment Documents) ECHA ECHA (The European Environmental Protection Agency) ECHA ECHA (The Store) Agency Pick Management Authority) ECOSARS Estimation through ECOSARS (11) part of the Estimation Programs Inter FDA (FOA B) (The Automation System on Hazardous Substances of the German S Insurance) HSDB HSDB (HSDB (Hazardous Substances Data Bank) INERIS (Information System on Hazardous Substances) INERIS INFERS (Information Programme on Chemical Safety) IUCLID UCLID (INCEIN (The International Programme on Chemical Safety) IUCLID ULCLID (INCENCHEM (International Programme on Chemical Safety) NICAS Australia National Institute of Technology and Evaluation (NTE) NITE Japan National Institute of Technology and Evaluation (NTE) NITH NICHA NICOSH (National Institute of Technology and Evaluation (NTE) NICHAS Australia National Institute of Technology and Evaluation (NTE) NICHAS Australia National Institute of the Hath) NICOSH DIAL OSHA (Courapional Safety and Health) AUCLID (Intel States Department A Grinistration of the US Department PETECS TECK The Finnis Environment Institute (SYKE) USDA USDA (United States Department A Grinistration of the US Department PETECS The Finnish Environment Institute (SYKE) SUSC (United States Department A Grinistration of the	sonal protection - X - I	0 Persona	sical hazards - I	ability - 1 F	Flamm	-*		
ATSDR     ATSDR     ATSDR       ATSDR     ATSDR     ATSDR       ATSDR     CRIS     CCRIS       CCRIS     CCRIS     CCRIS       CCRIS     CCRIS     CCRIS       CCRA     CDPA     CDPA       CEPA     CEPA (Canadian Environmental Protection Agency)       CICAD     CICAD (Concise International Chemical Assessment Documents)       ECHA     ECHA (The European Environmental Protection Agency)       EPA     EAA (European Environmental Protection Agency)       ERA     Estmation through ECOSARS v1.11 part of the Estimation Programs Inter       EOSARS     Estimation through ECOSARS v1.11 part of the Estimation Programs Inter       EOSARS     Estimation through ECOSARS v1.11 part of the Estimation Programs Inter       EOSARS     Estimation Substances Data Bank)       INERIS     INFERIS       INERIS     INFERIS       INERIS     INFERIS       INERIS     INFERIS       INERIS     INFERIS       INTE     Japan National Institute of Technology and Evaluation (NTE)       NIH     NICAH       NICAH     NICSH (National Institute of Technology and Aseessment Schen       NICA     Australia National Institute of Technology and Evaluation (NTE)       NIH     NICAH       NICA     Australia National Institute of Technology and Asest				fety data sheet	sed in the s	tions and acronyms us	end to abbrevia	Key or legend
ECHA         ECHA (The European Chemicals Agency)           EEA         EEA (Environment Agency)           EPA         EPA (Environment Agency)           ERMA         EPA (Environment Protection Agency)           ERMA         EPA (Environment Protection Agency)           ECOSARS         Estamation through ECOSARS (11 part of the Estimation Programs Inter FDA (Environmental Protection Agency)           ECOSARS         Estamation through ECOSARS (11 part of the Estimation Programs Inter FDA (Environmental Risk Management Authority)           GESTIS         GESTIS (Information System on Hazardous Substances of the German S Insurance)           HSDB         HSDB (Hazardous Substances Data Bank)           INERIS (Information System on Hazardous Substances)         Insurance)           INCALS         INERTIS (The International Programme on Chemical Safety)           IUCLID         IUCLID (International Institute of Technology and Evaluation (NTE)           NITE         Japan National Institute of Technology and Evaluation (NTE)           NICANS         NulCH (National Institute of Cocupational Agency on Hazardous)           NICH         NICOSH (Unational Institute of Cocupational Agency on Hazardous)           NICANS         Australia National Institute of Cocupational Agency on Hazardous on		m)	isease Registry) Information System gency)	c Substances and ogenesis Resear Control) mental Protectio	ency for Tox emical Carcin er for Disease adian Enviro	ATSDR (Age CCRIS (Che CDC (Center CEPA (Cana		ATSDR CCRIS CDC CEPA
FDA         FDA (Food & Drug Administration)           GESTIS         GESTIS           GESTIS         GESTIS           Second & Drug Administration)         Substances of the German S Insurance)           HSDB         HSDE (Information System on Hazardous Substances of the German S Insurance)           HSDE         HSDE (Information System on Hazardous Substances of the German S Insurance)           INERIS         INERIS (The National Industrial Environment and Risks Institute)           IPCS INCHEM         IPCS INCHEM (International Programme on Chemical Safety)           IUUCLID (The International Institute of Technology and Evaluation (NTE)           NITE         Japan National Institute for Occupational Safety and Health)           NIOSH         NIOSH (Mational Institute for Occupational Safety and Health)           NICAL         LOLI (List of List - An International Chemicals Notification and Assessment Schen NICASS           NICSH         UNCSH IDLH           UISSH (DILH         Immediately Dangerous to Life or Health           SIDS         SIDS (Scenening Information Dataset) for High Volume Chemicals SIDS           SIDS         SIDS (Cocupational Safety and Health Administration of the US Department PEEN (Partering High Volume Chemicals Sottances)           SIDS         SIDS (Scenening Information Dataset) for High Volume Chemicals SYKE           USDA         UISDA (United States Department of Agr		*		nemicals Agency) nent Agency) rection Agency)	European C ean Environ onmental Pro	ECHA (The E EEA (Europe EPA (Enviror		ECHA EEA EPA ERMA
INERIS INERIS (The National Industrial Environment and Risks Institute) IPCS INCHEM   IPCS INCHEM (International Programme on Chemical Safety) IUCLID (The International Uniform Chemical Information Database) NITE Japan National Institute of Technology and Evaluation (NITE) NIH NITE Japan National Institute of Technology and Evaluation (NITE) NIH NIGSH IUCLID (The International Uniform Chemical Information Database) NITE Japan National Institute of Technology and Evaluation (NITE) NIH NIGSH IUCLID (List of Lists - An International Chemical Regulatory Database) NIGSH IUCLI (List of Lists - An International Chemical Regulatory Database) NIGSH NICSH OLL (List of Lists - An International Chemical Safety and Health) LOLI LOLI (List of Lists - An International Chemical Softification and Assessment Schen NICSH SA Australia National Industrial Chemicals Notification and Assessment Schen NICSH IUCLI International Safety and Health Administration of the US Departm PEEN (Pace European Ecological Network) RTECS RTECS (Registry of Toxic Effects of Chemical Substances) SIDS (Stroening Information Dataset) for High Volume Chemicals SYKE The Finnish Environment Institute (SYKE) USDA USDA (United States Department of Agriculture) USDA USDA (United States Department of Agriculture) USDA USDA (United States Department of Agriculture) WHO WHO (WHO (World Health Organization) TMA TWA (Ime-weighted average) STEL STEL (Short Term Exposure MAC Maximum Allowable Concentration Ceiling Ceiling Limit Value X Listed Vacated These values have no officic binding levels of contaminan in the final OSHA PEL. These reference proposes only. Phy some reference state regulat "Ilberated" ecosposure limits in regulations. SKN* Skin designation ** Hazard Designation	. ,	•		nistration) rstem on Hazardo	& Drug Admi nformation S	FDA (Food 8 GESTIS (In Insurance)	5	FDA GESTIS
LOLI VILIE LOLI (List of Lists - An International Chemical Regulatory Database) NDF no data NICNAS Australia National Industrial Chemicals Notification and Assessment Schen NICSH IDL Immediately Dangerous to Life or Health OSHA Occupational Safety and Health Administration of the US Departm PEEN PEEN PEEN (Pane European Ecological Network) RTECS RTECS (Registry of Toxic Effects of Chemical Substances) SIDS SUBS (Screening Information Dataset) for High Volume Chemicals SYKE The Finnish Environment Institute (SYKE) USDA USDA (United States Department of Agriculture) USDA USDA (United States Department of Agriculture) USDA USDA (United States Department of Agriculture) WHO WHO (World Health Organization) TMA TWA (time-weighted average) STEL STEL (Short Term Exposure MAC Maximum Allowable Concentration Ceiling Ceiling Limit Value X Listed Vacated These values have no officit binding levels of contamina in the final OSHA PLE. There reference purposes only. Ph some reference state regula "liberated" exposure limits in regulations. SKN* Skin designation SKN+ Skin sensitization ** Nature Maximum Allowable Concentration ***		,	Chemical Safety) Information Datab valuation (NITE)	dustrial Environme onal Programme I Uniform Chemic of Technology and f Health)	e National In EM (Internati e Internation nal Institute al Institutes	INERIS (The IPCS INCHE IUCLID (The Japan Natior NIH (Nationa	IEM	INERIS IPCS INCHEM IUCLID NITE NIH
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TWA         TWA (time-weighted average)         STEL         STEL (Short Term Exposure           MAC         Maximum Allowable Concentration         Ceiling         Ceiling Limit Value           X         Listed         Vacated         These values have no official binding levels of contaminant bind	,		Il Substances) h Volume Chemic ure)	cological Network c Effects of Cherr tion Dataset) for Institute (SYKE) partment of Agric partment of Com	European E gistry of Tox ening Informa Environmen ed States De ed States De	PEEN (Pan B RTECS (Reg SIDS (Scree The Finnish USDA (Unite USDC (Unite		RTECS SIDS SYKE USDA USDC
MAC Maximum Allowable Concentration Ceiling Ceiling Limit Value X Listed Vacated These values have no offici binding levels of contaminan in the final OSHA PEL. Thes reference purposes only. Physical Sector Pellow Biberated Texpolar Tiberated Texpolar Biberated Texpolar Biberate				ROTECTION	RSONAL P	SURE CONTROLS/PE	Section 8: EXP	Legend - Secti
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RSP+ Respiratory sensitization ** Hazard Designation	nants are those liste hese lists are for . Please note that gulations of these	contaminants A PEL. These ses only. Plea state regulati	binding levels of in the final OSHA reference purpos some reference s "liberated" expos	Vacated			Listed	x
				SKN+				
M mutagen				R		gen	Carcino	С
Prepared By Hach Product Compliance Department				e Department	ct Complian	Hach Produc	Ву	Prepared By

# Product Code(s) 199549 Issue Date 11-Feb-2021 Version 7.6

Product Name Molybdate 3 Reagent for Silica Revision Date 08-Feb-2023 Page 16 / 16

11-Feb-2021
08-Feb-2023
None

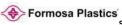
Disclaimer

USER RESPONSIBILITY: Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations.

THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED TO BE ACCURATE. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.

HACH COMPANY@2022

End of Safety Data Sheet



Safety Data Sheet according to OSHA HCS, NOM 018-STPS-2015, HPR Schedule 1 on 10

according to	03HA 1103, NOW 010-31F 3-2013, HF1	K Scheude 1
Date Printed: 11/01/2022	Version 10	Revision Date: 08/16/2022
1 Identification of the Subst	tance/Mixture and of the Compa	ny/Undertaking
Product Identifier: Liquid Caus	tic Soda 50% Membrane Grade	
Sodium Hydroxide 5	0%	
• Product Application: Strong chemical base in the man	ufacture of pulp and paper, textiles, drinki	ing water, soaps and detergents.
• Manufacturer/Supplier: Formosa Plastics Corporation, Ar 201 Formosa Drive Point Comfort, TX 77978 USA +1 (361) 987-7000 E-Mail: MSDS@fpcusa.com	nericas	
Business Division: Chlor-Alkali		
	: , contact CHEMTREC (24 hrs) at: s, Canada, Puerto Rico, Virgin Islands)	
2 Hazards Identification		
Classification of the Substance Skin Corrosion 1A H314 Causes Eye Damage 1 H318 Causes	severe skin burns and eye damage.	

 H314 Causes severe skin burns and eye damage.

 Precautionary Statements:

 P260
 Do not breathe dusts or mists.

 P280
 Do not breathe dusts or mists.

 P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

 P303+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

 P304+P330
 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

 P305+P331+P338 IF IN EVES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Confinue rinsing.

 P309+P311
 IF exposed or if you feel unwell: Call a POISON CENTER or doctor/physician.

 P305
 Store locked up.

 P405
 Store locked up.

 P501
 Dispose of contents/container in accordance with local regulations.

 (Contd. on Page 2)
 (Contd. on Page 2)

Hazards Not Otherwise Classified: May be harmful if swallowed.

 Hazard Statements:

 H318 Causes serious eye damage.

 H314 Causes serious eye damage.

Hazard Pictograms: GHS05

Signal Word: DANGER

EN / AGHS
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		ige 2/11
	Safety Data Sheet according to OSHA HCS, NOM 018-STPS-2015, HPR Schedule 1	
ate Printed: 11/01/2022	•	16/2022
oduct Identifier: L	Liquid Caustic Soda 50% Membrane Grade	
	(Contd. from	Page 1)
Additional Preca	autionary Statements: Wash contaminated clothing before reuse.	
NFPA Ratings (s	scale 0 - 4):	
Fire	alth = 3 = 0 activity = 1	
	mation: lerstand the hazards or safety precautions described in this data sheet, contact your ety administrator before handling this product.	
3 Composition/	/Information on Ingredients	
	acterization: Mixtures	
<ul> <li>CAS No. Desc 1310-73-2 sodium</li> </ul>		50%
🔶 Ski	in Corrosion 1A, H314; () Acute Toxicity - Oral 4, H302 mation: For the wording of the listed hazard phrases refer to section 16.	
4 First Aid Mea		_
General informa		ated
General information Rescue personne areas.	ation: el must wear appropriate protective equipment during removal of victims from contamina	ated
General information	ation: el must wear appropriate protective equipment during removal of victims from contamina	ated
General informa Rescue personne areas.     After Inhalation: Remove victim to Administer oxygei	ation: el must wear appropriate protective equipment during removal of victims from contamina <u>:</u> 5 fresh air. n if breathing is difficult.	ated
General informa Rescue personne areas.     After Inhalation: Remove victim to Administer oxyge Administer artifica Onset of sympton	ation: el must wear appropriate protective equipment during removal of victims from contamina <u>;</u> f resh air. an i f breathing is difficult. al respiration if breathing has stopped. ms may be delaved up to 48 hours.	ated
General informa Rescue personne areas.     After Inhalation: Remove victim to Administer oxyge Administer artifica Onset of sympton Get immediate mo	ation: el must wear appropriate protective equipment during removal of victims from contamina 5 fresh air. an i fbreathing is difficult. al respiration if breathing has stopped. ms may be delayed up to 48 hours. hedical attention.	ated
General informa Rescue personne areas.     After Inhalation: Remove victim to Administer oxyge Administer artifica Onset of sympton Get immediate m     After Skin Conta Remove contamii Use caution to av	ation:         ef must wear appropriate protective equipment during removal of victims from contamina <u>j</u> fresh air.         ni fbreathing is difficult.         al respiration if breathing has stopped.         ms may be delayed up to 48 hours.         redical attention.         act:         inated clothing and shoes. Wash affected area with soap and water.         void spreading contamination while washing.         mage is possible if product is not completely washed off.	ated
General Informa Rescue personne areas. <u>After Inhalation:</u> Remove victim to Administer oxyge Administer oxyge Get immediate m <u>After Skin Conta</u> Remove contamii Use caution to av Delayed skin dam Get immediate m <u>After Expe Conta</u>	ation:         ef must wear appropriate protective equipment during removal of victims from contamina         :         of resh air.         an if breathing is difficult.         al respiration if breathing has stopped.         ms may be delayed up to 48 hours.         redical attention.         act:         inated clothing and shoes. Wash affected area with soap and water.         woid spreading contamination while washing.         mage is possible if product is not completely washed off.         redical attention.         ct:	ated
General informa Rescue personne areas.     After Inhalation: Remove victim to Administer avgge Administer avgg	ation:         ef must wear appropriate protective equipment during removal of victims from contamina         j         fresh air.         an if breathing is difficult.         al respiration if breathing has stopped.         ms may be delayed up to 48 hours.         redical attention.         actionated cithing and shoes. Wash affected area with soap and water.         void spreading contamination while washing.         mage is possible if product is not completely washed off.         redical attention.         ctimate contact, immediately flush eyes with water.         nota contact, immediately flush eyes to do. Continue rinsing.	ated
General informa Rescue personne areas.     After Inhalation: Remove victim to Administer oxyge Administer oxyge Administer artifica Onset of sympton Get immediate m Atter Skin Conta Remove contarli Use caution to av Cet immediate m Atter Syec Contar In case of accider Note y Contar Nater Eye Contar In case of accider Hold eyelids open Remove contact I Get immediate m	ation:         el must wear appropriate protective equipment during removal of victims from contamina         2         o fresh air.         an if breathing is difficult.         al respiration if breathing has stopped.         ms may be delayed up to 48 hours.         edical attention.         action         made is possible if product is not completely washed off.         redical attention.         tendal contact, immediately flush eyes with water.         notare adequate flushing.         notare adequate flushing.	ated
General Informa Rescue personne areas.     After Inhalation: Remove victim to Administer avyge Administer avyge Administer avge administer avge catution to av Pelayed skin dam Get immediate m After Eye Contaxi In case of accider Hold eyelids open Remove contaxi In case of accider Hold eyelids open Remove contaxi Get immediate m After Svallowing Rinse mouth.	ation:         el must wear appropriate protective equipment during removal of victims from contamina         2         o fresh air.         an if breathing is difficult.         al respiration if breathing has stopped.         ms may be delayed up to 48 hours.         edical attention.         action         made is possible if product is not completely washed off.         redical attention.         tendal contact, immediately flush eyes with water.         notare adequate flushing.         notare adequate flushing.	ated
General Informa Rescue personne areas.     After Inhalation: Remove victim to Administer oxyge Administer artifica Conset of sympton Get immediate m.     After Skin Conta Remove contami Use caution to av Delayed skin dam Get immediate m.     After Eve Contaa In case of accider Hold eyelids open Remove contact I Get immediate m.     After Swallowing Rinse mouth. Administer 1-2 gi Do NOT induce v	ation:         ef must wear appropriate protective equipment during removal of victims from contamina         2         of resh air.         an if breathing is difficult.         all respiration if breathing has stopped.         mem may be delayed up to 48 hours.         hedical attention.         act:         made is possible if product is not completely washed off.         nedical attention.         act:         mage is possible if product is not completely washed off.         redical attention.         ctil         neadical ettention.         get         medical attention.         get         medical attention.         get is possible if product is not completely washed off.         redical attention.         get         inals contact, immediately flush eyes with water.         n to ensure adequate flushing.         lenses, if present and easy to do. Continue rinsing.         redical attention.         get         lasses of water to dilute ingested material.         vomiling.	ated
Ceneral Informa Rescue personne areas.     After Inhalation: Remove vicim to Administer oxyge Administer artifica conset of sympton Get immediate m.     After Skin Conta Remove contami Use caution to av Delayed skin dam Get immediate m.     After Evyc Contac In case of accider Hold eyelds open Remove contact I Get immediate m.     After Svallowing Rinse mouth.     Administer 1-2 gi Do NOT induce v	ation:         ef must wear appropriate protective equipment during removal of victims from contamina <u>i</u> of fresh air.         en if breathing is difficult.         al respiration if breathing has stopped.         ms may be delayed up to 48 hours.         redical attention.         act:         inated clothing and shoes. Wash affected area with soap and water.         void spreading contamination while washing.         mage is possible if product is not completely washed off.         redical attention.         dti         enditions.         intert         in to ensure adequate flushing.         lenses, if present and easy to do. Continue rinsing.         redical attention.         g:         atsess of water to dilute ingested material.         vomiling.         ing by mouth to an unconscious person.	

Page 3/11
Safety Data Sheet according to OSHA HCS, NOM 018-STPS-2015, HPR Schedule 1
Date Printed: 11/01/2022 Version 10 Revision Date: 08/16/2022
Product Identifier: Liquid Caustic Soda 50% Membrane Grade
(Contd. from Page 2
• Most Important Symptoms and Effects: No further relevant information available.
* 5 Firefighting Measures
<ul> <li><u>Suitable Extinguishing Agents:</u> CO2, extinguishing powder or water spray. Fight larger fires with water spray.</li> </ul>
Unsuitable Extinguishing Agents: None.
Special Firefighting Hazards: No special firefighting hazards expected.
<ul> <li><u>Protective Equipment:</u> In the event of a fire, wear a NIOSH (USA) or CEN (EU) approved self-contained breathing apparatus (SCBA) and full protective clothing.</li> </ul>
Additional Information: Evacuate all non-essential personnel from the danger area.
6 Accidental Release Measures
Personal Precautions, Protective Equipment and Emergency Procedures: In case of a spill or other accidenta release of this material, contact your supervisor, safety administrator, or emergency response team immediately. Restrict access to keep out unauthorized or unprotected personnel. Stay upwind of spilled material. Wear appropriate personal protective equipment during all clean-up activities. See Section 8 for more information. Avoid inhalation and direct contact. All clean-up personnel must be properly trained.
<ul> <li><u>Environmental Precautions:</u> Keep spilled material out of sewage/drainage systems and waterways. This product contains a U.S. EPA Reportable Quantity (RQ) substance. If amounts exceeding the Reportable Quantity are released, notification of the National Response Center +1 (800) 424-8802 is required. See Section 15 for more information.</li> </ul>
• <u>Methods for Containment and Clean-Up:</u> Secure the source of the leak if conditions are safe. Use neutralizing agent. Collect using an appropriate absorbent material such as clay or sand. Place waste in an appropriate container for disposal. Use care during clean-up to avoid exposure to the material and injury from broken containers.
Reference to Other Sections: See Section 7 for information on safe handling. See Section 8 for information on personal protective equipment. See Section 13 for disposal information.
7 Handling and Storage
Precautions for Safe Handling:
When diluting, always slif the product into water, not water to product. Do not mix with water without dilution and agitation to prevent potentially violent reaction. Avoid inhalidion and direct contact.

(Contd. on Page 2)

Safety	Data	Sheet	
ouncity	Dutu	Oneer	

Date Printed: 11/01/2022

Product Identifier: Liquid Caustic Soda 50% Membrane Grade (Contd. from Page 3) Wear appropriate personal protective equipment. Do not mix with acids, ammonia, alcohol, ethers or hydrocarbons. Protection Against Fires and Explosions: Contact with metals may form hydrogen gas. Conditions for Safe Storage, Including Any Incompatibilities: Store in closed, properly labeled containers. Protect containers from heat, physical damage, ignition sources and incompatible materials. Have emergency equipment for fires and spills readily available. Absorbs carbon dioxide. Keep container closed. There is no specific limit on shelf-life if material is stored in a closed container.

Additional Information: If you do not understand the hazards or safety precautions described in this data sheet, contact your supervisor or safety administrator before handling this product.

## 8 Exposure Controls/Personal Protection

## Occupational Exposure Limits

1310-73-2 sodium hydroxide EL (Canada) Ceiling Limit Value: 2 mg/m<sup>3</sup> EV (Canada) Ceiling Limit Value: 2 mg/m<sup>3</sup> VLE (Mexico) Ceiling Limit Value: 2 mg/m<sup>3</sup> PEL (USA) Eight-Hour Value: 2 mg/m<sup>3</sup> REL (USA) Ceiling Limit Value: 2 mg/m<sup>3</sup> TLV (USA) Ceiling Limit Value: 2 mg/m<sup>3</sup> Exposure Controls: Ensure emergency eyewash and shower facilities are available. Personal Protective Equipment: General Protective and Hygienic Measures: Wash thoroughly after handling. Follow all safety precautions, posted signs and warnings. Do not inhale gases / fumes / aerosols. Avoid contact with the eyes and skin. Respiratory Protection:
 An industrial hygiene risk assessment is required to determine appropriate respiratory protection.
 An air-purifying respirator may be appropriate under limited exposure conditions.
 Perform a respirator fit/seal check after donning.
 Protection provided by air-purifying respirators is limited.
 Wear a self-contained breathing apparatus (SCBA) if there is a potential for uncontrolled release, exposure
 levels are not known, or in other circumstances where air-purifying respirators may not provide adequate
 morderion protection. Hand Protection:



Viscosity: Other Information: \*10 Stability and Reactivity

Chemical resistant gloves

Work gloves may be worn over chemical resistant gloves. Wear a second pair of chemical resistant gloves for added protection. Tape gloves to coveralls or suit, if worn.

(Contd. on Page 5)

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ntd. on Page 6)

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	Safaty Data Sheat	Page 5/11
	Safety Data Sheet HCS, NOM 018-STPS-2015, HPR Schedule	1
Date Printed: 11/01/2022	Version 10	Revision Date: 08/16/2022
Product Identifier: Liquid Caustic Soda 5	0% Membrane Grade	
Use caution when removing gloves to a	oid exposure to hazardous chemicals	(Contd. from Page 4)
Eye/Face Protection:	ord exposure to nazardous chemicals.	
Safety glasses with side shield	is.	
Splash goggles/mono-goggles recomme	ended during tasks with high potential for expos	ure.
Body Protection:		
Lab coat recommended for small scale on Tasks with a high probability for splashir		
Chemical resistant coveralls or apron.		
Heavy duty chemical resistant boots.		
<ul> <li>Additional Information: If unusual exposures are expected, an ir</li> </ul>	ndustrial hygiene review of work practices, engi	neering controls and
personal protective equipment is recomm	nended.	
* 9 Physical/Chemical Properties		
Information on Basic Physical and Ch	emical Properties	
Appearance: Physical State:	Liquid	
Color:	Colorless	
· Odor:	Odorless	
Odor Threshold:	Not determined.	
pH at 20 °C (68 °F):	13.7	
Melting Point/Freezing Point:	5-12 °C (41-53.6 °F) (Freezing Point)	
Boiling Point:	105-147.8 °C (221-298 °F)	
Flash Point:	Not applicable.	
Flammability (solid, gaseous):	Not applicable.	
Autoignition Temperature:	Not determined.	
Decomposition Temperature:	Not determined.	
Auto-Ignition Temperature:	Not determined.	
Explosion Limits:		
Lower Explosive Limit (LEL):	Not determined.	
Upper Explosive Limit (UEL):	Not determined.	
Vapor Pressure:	Not determined.	
Density at 20 °C (68 °F):	1.52 g/cm3 (12.68 lbs/gal)	
Vapor Density:	Not determined.	
Evaporation Rate:	Not determined.	(Contd. on Page 6)

	Safety Data Sheet according to OSHA HCS, NOM 018-STPS-2015, HPR	Page 6/11 Schedule 1		Safety Data Sheet according to OSHA HCS, NOM 018-STPS-2015,
Date Printed: 11/01/2022	Version 10	Revision Date: 08/16/2022	Date Printed: 11/01/2022	Version 10
Product Identifier: L	iquid Caustic Soda 50% Membrane Grade		Product Identifier:	Liquid Caustic Soda 50% Membrane Grade
		(Contd. from Page 5)		
Solubility: Water:	Soluble.			upting Properties: s not contain substances with endocrine disrupting pr
Partition Coeffici	ient (n-octanol/water): Not determined.		*13 Disposal Cor	aciderations
Viscosity:	Not determined.		•	
Other Informatio	n: No further relevant information av	ailable.	Disposal Instrue Keen spilled mat	ctions: terial out of sewage/drainage systems and waterways
40.04 - 1-11			Maximize produc	t recovery for reuse or recycling. may be hazardous due to the pH/corrosivity.
10 Stability and F	Reactivity			e in accordance with applicable laws and regulations.
Chemical Stabilit	rther relevant information available. ty: Stable if used and stored according to the specification	s listed below.		Packaging: bilty of the product user to determine at the time of dis product should be classified as hazardous waste.
Keep away from in	iold: lieat, sparks and open flames. ncompatible materials. ioxide. Keep container closed.			mation: bility of the product user to determine at the time of di product should be classified as hazardous waste.
	zardous Reactions/Incompatible Materials:			
Keep away from s Keep away from h	strong oxidizers. nalogenated compounds.		*14 Transport Inf	ormation
Do not mix with a	cids, ammonia, alcohol, ethers or hydrocarbons. Ils may form hydrogen gas.		· UN Number:	
	mposition Products: No data available.		DOT, ADR, IMD	<u>G, IATA</u> UN1824
			UN Proper Ship	ping Name:
11 Toxicological	Information		DOT:	Sodium hydroxide soluti
			ADR:	1824 SODIUM HYDRO
	Aay be harmful if swallowed.		<u>IMDG, IATA</u>	SODIUM HYDROXIDE
Relevant LD/LC5 1310-73-2 sodium			Transport Haza	rd Class(es):
Oral LD50 2,000 r			· <u>DOT:</u>	
Respiratory Irrita	tion: Corrosive to the respiratory tract.		E 34	
Respiratory or SI	kin Sensitization: No data available.		CORROSVE	
Information on C	ther Hazards:		*	
Endocrine Disr	upting Properties:		Class:	8 Corrosive substances
None of the ingree	dients is listed.		Label:	8
			ADR, IMDG, IAT	A
12 Ecological Inf	ormation		E.S.	
Aquatic Toxicity:	No data available.			
Persistence and	Degradability: No data available.		~	
Bioaccumulative	Potential: No data available.		Class:	8 Corrosive substances
Mobility in Soil:	No data available.		· Label:	8
		(Contd. on Page 7)		

ate Printed: 11/01/2022	Version 10	Revision Date: 08/16/202
roduct Identifier: Liquid Caustic Sod	a 50% Membrane Grade	
		(Contd. from Page 6
Endocrine Disrupting Properties:		
The product does not contain substar	nces with endocrine disrupting properties.	
3 Disposal Considerations		
Disposal Instructions:		
Keep spilled material out of sewage/d		
Maximize product recovery for reuse Waste materials may be hazardous d		
Dispose of waste in accordance with		
Contaminated Packaging:		
It is the responsibility of the product us derived from this product should be c	ser to determine at the time of disposal who lassified as bazardous waste.	ether a material containing or
Additional Information:		
It is the responsibility of the product us	ser to determine at the time of disposal who	ether a material containing or
derived from this product should be c	lassified as hazardous waste.	
4 Transport Information		
· UN Number:		
ON NUMBER.		
DOT, ADR, IMDG, IATA	UN1824	
	UN1824	
DOT, ADR, IMDG, IATA	UN1824 Sodium hydroxide solution	
DOT, ADR, IMDG, IATA		UTION
· DOT. ADR. IMDG. IATA · UN Proper Shipping Name: · DOT:	Sodium hydroxide solution	
· DDT. ADR. IMDG. IATA · UN Proper Shipping Name: · DOT: · ADR:	Sodium hydroxide solution 1824 SODIUM HYDROXIDE SOL	
DDT, ADR, IMDG, IATA UN Proper Shipping Name: DDT: ADR: IMDG, IATA	Sodium hydroxide solution 1824 SODIUM HYDROXIDE SOL	
DOT, ADR, IMDG, IATA UN Proper Shipping Name: DOT: ADR: IMDG, IATA Transport Hazard Class(es);	Sodium hydroxide solution 1824 SODIUM HYDROXIDE SOL	
DOT. ADR. IMDG. IATA UN Proper Shipping Name: DOT: ADR: IMDG. IATA Transport Hazard Class(es);	Sodium hydroxide solution 1824 SODIUM HYDROXIDE SOL	
DOT, ADR, IMDG, IATA UN Proper Shipping Name: DOT: ADR: IMDG, IATA Transport Hazard Class(es);	Sodium hydroxide solution 1824 SODIUM HYDROXIDE SOL	
DOT, ADR, IMDG, IATA UN Proper Shipping Name: DOT: ADR: IMDG, IATA Transport Hazard Class(es);	Sodium hydroxide solution 1824 SODIUM HYDROXIDE SOL	
DOT, ADR, IMDG, IATA UN Proper Shipping Name: DOT: ADR: IMDG, IATA Transport Hazard Class(es): DOT: DOT:	Sodium hydroxide solution 1824 SODIUM HYDROXIDE SOL SODIUM HYDROXIDE SOLUTIO	
DOT, ADR, IMDG, IATA     UN Proper Shipping Name:     DOT:     ADR:     IMDG, IATA     Transport Hazard Class(es):     DOT:     Class:     Label:	Sodium hydroxide solution 1824 SODIUM HYDROXIDE SOL SODIUM HYDROXIDE SOLUTION 8 Corrosive substances	
DOT. ADR. IMDG. IATA     UN Proper Shipping Name:     DOT:     ADR:     IMDG, IATA     Transport Hazard Class(es):     DOT:     ODT:     ODT:	Sodium hydroxide solution 1824 SODIUM HYDROXIDE SOL SODIUM HYDROXIDE SOLUTION 8 Corrosive substances	

(Contd. on Page 8)

Page 8/11 Safety Data Sheet according to OSHA HCS, NOM 018-STPS-2015, HPR Schedule 1 Date Printed: 11/01/2022 Version 10 Revision Date: 08/16/2022 Product Identifier: Liquid Caustic Soda 50% Membrane Grade (Contd. from Page 7) Packing Group: DOT, ADR, IMDG, IATA п Environmental Hazards: Not applicable. Marine Pollutant: No Special Precautions: Warning: Corrosive substances Danger Code (Kemler): 80 F-A,S-B EMS Number: (SGG18) Alkalis Segregation Groups: Stowage Category SG35 Stow "separated from" SGG1-acids Segregation Code: Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code: Not applicable. Shippers must consult transportation regulations for packaging instructions, quantity limitations and other regulatory information applicable to the desired mode of transport. Additional Information: DOT: Quantity Limitations: On passenger aircraft/rail: 1 L On cargo aircraft only: 30 L This product contains a U.S. EPA Reportable Quantity (RQ) Remarks: substance. If amounts exceeding the Reportable Quantity are released, notification of the National Response Center +1 (800) 424-8802 is required. See Section 15 for more information. . Shippers must consult transportation regulations for packaging instructions, quantity limitations and other regulatory information applicable to the desired mode of transport. ADR: Excepted Quantities (EQ): ode: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml Tunnel Restriction Code: IMDG: Limited Quantities (LQ): Excepted Quantities (EQ): 1L Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml

UN 1824 SODIUM HYDROXIDE SOLUTION, 8, II

(Contd. on Page 9

Page 9/11 Safety Data Sheet according to OSHA HCS, NOM 018-STPS-2015, HPR Schedule 1 Date Printed: 11/01/2022 Version 10 Revision Date: 08/16/2022 Product Identifier: Liquid Caustic Soda 50% Membrane Grade (Contd. from Page 8) 15 Regulatory Information Safety, health and environmental regulations/legislation specific for the substance or mixture U.S. Superfund Amendments & Reauthorization Act (SARA) 355 (Extremely Hazardous Substances): None of the ingredients is listed U.S. Superfund Amendments & Reauthorization Act (SARA) 313 (Specific Toxic Chemical Listings): None of the ingredients is listed. U.S. Environmental Protection Agency Reportable Quantity: 1310-73-2 sodium hydroxide: 1,000 lbs. U.S. Toxic Substances Control Act (TSCA): Hazardous Air Pollutants None of the ingredients is listed California Proposition 65: California Proposition 65 Carcinogens: Materials used in the manufacturing process may result in contamination with trace quantities (<0.0001%) of various metals listed under Proposition 65. Contact Formosa Plastics Corporation, U.S.A. for more informatic None of the ingredients is listed. New Jersey Right-to-Know List 1310-73-2 sodium hydroxide New Jersey Special Hazardous Substance List: 1310-73-2 sodium hydroxide: CO, R1 Pennsylvania Right-to-Know List: 1310-73-2 sodium hydroxide Pennsylvania Special Hazardous Substance List: 1310-73-2 sodium hydroxide: E Canadian Substance Listings: Canadian Domestic Substances List (DSL): All ingredients are listed Canadian Non-Domestic Substances List (NDSL) None of the ingredients is listed Canadian Ingredient Disclosure List (limit 0.1%) None of the ingredients is listed Canadian Ingredient Disclosure List (limit 1%): 1310-73-2 sodium hydroxide GHS Label Elements: The product is classified and labeled according to the Globally Harmonized System (GHS). (Contd. on Page 10)

according	Safety Data Sheet to OSHA HCS, NOM 018-STPS-2015, HPR	Page 10/11 Schedule 1
te Printed: 11/01/2022	Version 10	Revision Date: 08/16/2022
roduct Identifier: Liquid Caust	c Soda 50% Membrane Grade	
		(Contd. from Page 9
Hazard Pictograms:		
GHS05		
Hazard Statements: H318 Causes serious eye dam H314 Causes severe skin burr		
· Other Hazards: May be harm	ul if swallowed.	
P280 Wear prote P301+P330+P331 IF SWALLO	the dusts or mists. ctive gloves/protective clothing/eye protection. WED: Rinse mouth. Do NOT induce vomiting ( or hair): Take off immediately all contamina	g. '

110111 000000000	oro oran barro ana oyo damago.		
Other Hazards: May be harmful if swallowed.			
Precautionary St	atements:		
P260	Do not breathe dusts or mists.		
P280	Wear protective gloves/protective clothing/eye protection/face protection.		
P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.		
P303+P361+P353	BIF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/		
	shower.		
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.		
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if		
	present and easy to do. Continue rinsing.		
P309+P311	IF exposed or if you feel unwell: Call a POISON CENTER or doctor/physician.		
P363	Wash contaminated clothing before reuse.		
P405	Store locked up.		
P501	Dispose of contents/container in accordance with local regulations.		

Additional Precautionary Statements: See Section 2.

Chemical Safety Assessment: A Chemical Safety Assessment has not been carried out.

## 16 Other Information

UN "Model Regulation":

Uther Information This information is furnished without warranty, expressed or implied, except that it is accurate to the best knowledge of Formosa Plastics Corporation, U.S.A. at the time it was prepared. Formosa Plastics Corporation, U.S.A. does not assume any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, Formosa Plastics Corporation, U.S.A. and its subsidiaries cannot guarantee that these are the only hazards that exist. Formosa Plastics Corporation, U.S.A. assumes no legal responsibility of this sole, damage or expense arising out of, or in any way connected with, the handling, storage, use or disposal of this product. Department Issuing Safety Data Sheet: Corporate Environment, Health & Safety

Department result is safety Data Sitevic Collocitate Environment, Readit & Safety
Abbreviations & Acronyms:
ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the
International Carriage of Dangerous Goods by Roud)
IMDC: International Martime Code for Dangerous Goods
IMDC: Substances
INCS: European Ilset of Notified Chemical Substances
CAS: Chemical Abstrates Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
ICSO: Letuba Concentration, 50 percent
(Contel or International Martime International Martime)
(Contel or International Martime)

(Contd. on Page 11)

Page 11/11 Safety Data Sheet according to OSHA HCS, NOM 018-STPS-2015, HPR Schedule 1 Date Printed: 11/01/2022 Version 10 Revision Date: 08/16/2022 Product Identifier: Liquid Caustic Soda 50% Membrane Grade (Contd. from Page 10) LD50: Lethal dose, 50 percent TLV: Threshold Limit Value PEL: Permisble Exposure Limit REL: Recommended Exposure Limit Acute Toxidry - Oral 4: Acute toxidry - Category 4 Acute Toxidry - Oral 4: Acute toxidry - Category 1A Eye Damage 1: Serious eye damageleye initiation - Category 1A

Sources & References: \* - Indicates that data has been updated from the previous version









ChemTreat CN220

# SAFETY DATA SHEET

Section 1. Chemical F		DATA SHEET		Response:	P301 + P312 IF SWALLOWED: CENTER or doctor/physician if y P301 + 330 + 331 IF SWALLOW Do NOT induce vomiting. P303 + P351 + P353 IF ON SKII Remove/take of immediately all	ou feel unwell ED: Rinse mouth. V (or hair):
Product Name: Product Use: Supplier's Name: Emergency Telephon Address (Corporate I- Telephone Number fo Date of SDS: Revision Date: Revision Number: Section 2. Hazard(s) I	e Number: leadquarters): or Information:	ChemTreat CN220 Cleaner ChemTreat, Inc. (800)424-9300 (Toll Free) 5640 Cox Road Glen Allen, VA 23060 (800)648-4579 February 7, 2019 February 7, 2019 19020701AN		Storage: Disposal: System of Classification Used:	Rinse skin with water/shower P304 + P340 IF INHALED: Rem air and keep comfortable for bree P305 + P331 + P338 IF IN EYES cautiously with water for several lenses, if present and easy to do P310 Immediately call a POISON P363 Wash contaminated clothir P405 Store locked up. P501 Dispose of contents and co with applicable local, regional, ne international regulations. Classification under 2012 OSHA Hazard	ove person to fresh athing : Rinse : Continue rinsing. d CentTER/doctor. g before reuse.
Signal Word:	DANGER			Hazards Not Otherwise	(29 CFR 1910.1200). None	
GHS Classification(s):	Eye damage/irr Acute Toxicity I Acute Toxicity I	rritation – Category 1b itation – Category 1 Þermal – Category 4 nhalation – Category 4 Dral – Category 4		Classified:		
Hazard Statement(s):		evere skin burns and eye damage.		Component	CAS Registry #	Wt.%
		erious eye damage.		Silicic acid, disodium salt	6834-92-0	1 - 5
	H312 Harmful i H332 Harmful i	n contact with skin.		Ethylene diamine tetraacetic acid, tetrasodium		1 - 5
	H302 Harmful i			1-Methoxy-2-propanol	107-98-2	1 - 5
Precautionary Statement(s):				Comments	If chemical identity and/or exact percents withheld, this information is considered t	
Prevention:	P264 W P270 D P271 U P280 W	o not breathe dust/fume/gas/mist/vapc ash thoroughly after handling. o not eat, drink, or smoke when using se only outdoors or in a well-ventilate 'ear protective gloves/protective clothi on/face protection.	this product. d area.			
19620701AN 02/07/19	Pi	age 1 of 10	ChemTreat CN220	19020701AN 02/07/19	Page 2 of 10	ChemTreat C





## Section 4. First Aid Measures

Inhalation:	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a poison center or doctor/physician.
Eyes:	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor/physician.
Skin:	Immediately remove/take off all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before re-use. Immediately call a poison center or doctor/physician.
Ingestion:	DO NOT INDUCE VOMITING. Rinse mouth. Call a POISON CENTER or doctor/physician.
Most Important Symptoms:	N/D
Indication of Immediate Medical Attention and Special Treatment Needed, If Necessary:	N/A

# Section 5. Fire Fighting Measures

Flammability of the Product:	Not flammable.
Suitable Extinguishing Media:	Use extinguishing media suitable to surrounding fire.
Specific Hazards Arising from the Chemical:	Use water spray to keep containers cool.
Protective Equipment:	If product is involved in a fire, wear full protective clothing including a positive-pressure, NIOSH approved, self-contained breathing apparatus.

Section 6. Accidental R	elease Measures
Personal Precautions:	Use appropriate Personal Protective Equipment (PPE).
Environmental Precautions:	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains, and sewers.
Methods for Cleaning up:	Contain and recover liquid when possible. Flush spill area with water spray.
Other Statements:	None.
Section 7. Handling and	l Storage
Handling:	Wear appropriate Personal Protective Equipment (PPE) when handling this product. Do not get in eyes, or on skin and clothing.

	nandling this product. Do not get in eyes, or on skin and clothing. Wash thoroughly after handling. Do not ingest. Avoid breathing vapors, mist or dust.
Storage:	Store away from incompatible materials (see Section 10). Store at ambient temperatures. Keep container securely closed when not in use. Label precatutions also apply to empty container. Recondition or dispose of empty containers in accordance with government regulations. For Industrial use only. Store above Freeze Point.

## Section 8. Exposure Controls/Personal Protection

# Exposure Limits

Chem<u>Treat</u>

Component	Source	Exposure Limits
Silicic acid, disodium salt	N/E	N/E
Ethylene diamine tetraacetic acid, tetrasodium salt	N/E	N/E
1-Methoxy-2-propanol	N/E	N/E
		uate ventilation. The use of local ventilation is

Use only with adequate ventilation. The use of local ventilation is recommended to control emission near the source.

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## Personal Protection

Eyes:	Wear chemical splash goggles or safety glasses with full-face shield. Maintain eyewash fountain in work area.
Skin:	Maintain quick-drench facilities in work area. Wear butyl rubber or neoprene gloves. Wash them after each use and replace as necessary. If conditions warrant, wear protective clothing such as boots, aprons, and coveralls to prevent skin contact.
Respiratory:	If misting occurs, use NIOSH approved organic vapor/acid gas dual cartridge respirator with a dust/mist prefilter in accordance with 29 CFR 1910.134.

## Section 9. Physical and Chemical Properties

Physical State and Appearance:	Liquid, Colorless, Slightly Hazy
Specific Gravity:	1.049 @ 20°C
pH:	13.0 @ 20°C, 100.0%
Freezing Point:	32°F
Flash Point:	N/D
Odor:	Mild
Melting Point:	N/A
Initial Boiling Point and Boiling Range:	212°F
Solubility in Water:	Complete
Evaporation Rate:	N/A
Vapor Density:	N/D
Molecular Weight:	N/D
Viscosity:	<100 CPS @ 20°C
Flammability (solid, gas):	N/D
Flammable Limits:	N/A
Autoignition Temperature:	N/A
Density:	8.75 LB/GA N/D
Vapor Pressure: % VOC:	N/D N/D
% VOC: Odor Threshold	N/D N/D
	N/D N/D
n-octanol Partition Coefficient	N/D N/D
Decomposition Temperature	N/D

## Section 10. Stability and Reactivity

Chemical Stability:	Stable at normal temperatures and pressures.
Incompatibility with Various Substances:	Strong oxidizers, Acids.
Hazardous Decomposition Products:	Oxides of carbon.
Possibility of Hazardous Reactions:	None known.
Reactivity:	N/D
Conditions To Avoid:	N/D

## Section 11. Toxicological Information

Acute Toxicity	
/ touto / onlong	

Chemical Name	Exposure	Type of Effect	Concentration	Species
Silicic acid, disodium salt	Oral	LD50	800 MG/KG	Rat
Ethylene diamine tetraacetic acid, tetrasodium salt	Oral	LD50	3030 MG/KG	Rat
	Dermal	LD50	>5000 MG/KG	Rabbit

## Carcinogenicity Category

Component	Source	Code	Brief Description
Silicic acid, disodium salt	N/E	N/E	N/E
Ethylene diamine tetraacetic acid, tetrasodium salt	N/E	N/E	N/E
1-Methoxy-2-propanol	N/E	N/E	N/E

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Likely Routes of Exposure: N/D

Symptoms			
Inhalation:	N/D		
Eye Contact:	N/D		
Skin Contact:	N/D		
Ingestion:	N/D		

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ChemTreat CN220



Skin Corrosion/Irritation:

Serious Eye Damage/Eye Irritation:

Germ Cell Mutagenicity:

Aspiration Hazard: Comments:

Ecotoxicity Species

Persistence and Biodegradability:

Mobility In Soil:

Comments:

Bioaccumulative Potential:

Other Adverse Effects:

Reproductive/Developmental Toxicity:

Specific Target Organ Toxicity Single Exposure:

Repeated Exposure:

Section 12. Ecological Information

Sensitization:

N/D N/D

N/D

N/D

N/D

N/D

None.

N/D

N/D

N/D

N/D

Not tested.

N/D N/D





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# SDS

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## Section 13. Disposal Considerations

Dispose of in accordance with local, state and federal regulations. EPA corrosivity characteristic hazardous waste D002 when disposed of in the original product form.

## Section 14. Transport Information

Controlling Regulation	UN/NA#:	Proper Shipping Name:	Technical Name:	Hazard Class:	Packing Group:
DOT		CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S.	(DISODIUM METASILICATE)	8	PGIII
Note:		N/A			

## Section 15. Regulatory Information

	tates (TSCA): DSL/NDSL):	All ingredients listed. All ingredients listed.
ederal Regulations		
SARA Title III Ru	ules	
Sections Classes	311/312 Hazard	
	Fire Hazard:	No
	Reactive Hazard:	No
	Release of Pressure:	No
	Acute Health Hazard:	Yes
	Chronic Health Hazard:	No

Other Sections

	Section 313	Section 302 EHS	
Component	Toxic Chemical	TPQ	CERCLA RQ
Silicic acid, disodium salt	N/A	N/A	N/A
Ethylene diamine tetraacetic acid, tetrasodium salt	N/A	N/A	N/A
1-Methoxy-2-propanol	N/A	N/A	N/A

Duration

Type of Effect

Test Results

N/D







Comments: None.

## Section 16. Other Information

SAFETY DATA SHEET

HMIS Hazard Rating		
Health: Flammability: Physical Hazard: PPE:	3 0 1 X	
Notes:	The PPE rating depends on circumstan Section 8 for recommended PPE. The Hazardous Material Information Sy voluntary, subjective alpha-numeric sy recommending hazard risk and persons information. It is a subjective rating syst evaluator's understanding of the chemin The end-user must determine if the coor their use.	stem (HMIS) is a mbolic system for al protection equipment iem based on the cal associated risks.
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ZEP-O-CLEAN_12CSQTS								
Version 2.0	Version 2.0 Revision Date 05/06/2018 Print Date 03/24/20							
SECTION 1. PRODUCT AND COMPANY IDENTIFICATION								
Material name	:	ZEP-O-CLEAN_12CS QTS						
Material number	:	00000000000138901						
Manufacturer or supplier's d	leta	ils						
Company	:							
Address	:	350 Joe Frank Harris Parkway, SE Emerson, GA 30137						
Telephone	:	404-352-1680						
Emergency telephone numbers								
For SDS Information	-	: Compliance Services 1-877-428-9937						
For a Medical Emergency		: 877-541-2016 Toll Free - All Calls Rec						
For a Transportation		: CHEMTREC: 800-424-9300 - All Calls						
Emergency		In the District of Columbia 202-483-7616						

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Recommended use of the chemical and restrictions on use Recommended use : Bathroom Care Maintenance

SECTION 2. HAZARDS IDENTIFICATION

## Emergency Overview Appearance liquid Colour Odour opaque pungen GHS Classification Skin corrosion Serious eye damage Specific target organ toxicity -single exposure Category 1 Category 1 Category 3 (Respiratory system) GHS label elements Hazard pictograms Signal word Dange H314 Causes severe skin burns and eye damage. H335 May cause respiratory irritation. Hazard statements Prevention: P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray. P264 Wash skin thoroughly after handling. P271 Use only outdoors or in a well-ventilated area. Precautionary statements

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## Abbreviations

Abbreviation	Definition	
<	Less Than	
>	Greater Than	
ACGIH	American Conference of Governmental Industrial Hygienists	
EHS	Environmental Health and Safety Dept	
N/A	Not Applicable	
N/D	Not Determined	
N/E	Not Established	
OSHA	Occupational Health and Safety Dept	
PEL	Personal Exposure Limit	
STEL	Short Term Exposure Limit	
TLV	Threshold Limit Value	
TWA	Time Weight Average	
UNK	Unknown	
Prepared by:	Product Compliance Department; ProductCompliance@chemtreat.com	
Revision Date:	February 7, 2019	

## Disclaimer

Although the information and recommendations set forth herein (hereinafter "information") are presented in good faith and believed to be correct as of the date hereo(. ChemTreat, Inc. makes no representations as to the completeness or accuracy thereol. Information is supplied upon the condition that the persons necesitiva and will make their own determination as to its suitability for their jurgoes prior to use. In no event will ChemTreat, the representations are of any and the resonance of any analter whatsoever resulting from the use or relations upon information. No representation or warrantes, either expressed or implied, or interchantability, fitness for a particular jurgoes, or of any other nechantability, fitness for a particular jurgoes, or of any other nechantability.

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SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous components

SE

Chemical name		CAS-No.	Concentration [%]
hydrochloric acid		7647-01-0	>= 20 - < 30
The exact percentages of disclosed substances are withheid as trade secrets.			
TION 4. FIRST AID ME	ASURES		

	Do not leave the victim unattended.
If inhaled	: If unconscious, place in recovery position and seek medical advice. If symptoms persist, call a physician.
In case of skin contact	Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty. Wash off immediately with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash contaminated clothing before re-use. If skin imitation persists, call a physician.

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EP-O-CLEAN_12CS Q	TS		ZEP-O-CLEAN_12CS Q	TS	
ersion 2.0	Revision Date 05/06/2018	Print Date 03/24/2023	Version 2.0	Revision Date 05/06/2018	Print Date 03/24/20
In case of eye contact	: Small amounts splashed into eyes tissue damage and blindness.	s can cause irreversible			
	Rinse immediately with plenty of v for at least 15 minutes.	vater, also under the eyelids,	SECTION 6. ACCIDENTAL RELEA		
	Continue rinsing eyes during trans Remove contact lenses. Protect unharmed eye.	sport to hospital.	Personal precautions, protective equipment and emergency procedures	: Use personal protective equipment Ensure adequate ventilation. Refer to protective measures lister	
	Keep eye wide open while rinsing		• , ,		
If swallowed	If eye irritation persists, consult a : Keep respiratory tract clear.	specialist.	Environmental precautions	<ul> <li>Prevent product from entering dra Prevent further leakage or spillag If the product contaminates rivers</li> </ul>	e if safe to do so.
ii swalloweu	DO NOT induce vomiting unless of physician or poison control center			respective authorities.	
	Never give anything by mouth to a Take victim immediately to hospita	an unconscious person.	Methods and materials for containment and cleaning up	: Soak up with inert absorbent mat acid binder, universal binder, saw	dust).
Most important symptoms	: Effects are dependent on exposur contact time).	e (dose, concentration,		Sweep up or vacuum up spillage container for disposal.	and collect in suitable
and effects, both acute and delayed	Effects are immediate and delaye				
	Symptoms may include blistering, Symptoms may include shortness irritation of the nose, eyes, lips, m	of breath, dry cough, and	SECTION 7. HANDLING AND STO	DRAGE	
	Causes severe skin burns and ey May cause respiratory irritation. Review section 2 of SDS to see a	e damage.	Advice on safe handling	: Avoid formation of aerosol. Do not breathe vapours/dust. Avoid exposure - obtain special ir	structions before use
Notes to physician	: Treat symptomatically. Symptom	s may be delayed.		Avoid contact with skin and eyes. For personal protection see secti Smoking, eating and drinking sho application area.	on 8.
CTION 5. FIREFIGHTING MEAS				Provide sufficient air exchange ar To avoid spills during handling ke Dispose of rinse water in accorda regulations.	ep bottle on a metal tray.
Suitable extinguishing media	: Use water spray, alcohol-resistant carbon dioxide.	toam, dry chemical or	Conditions for safe storage	: Keep container tightly closed in a	dry and well-ventilated
Unsuitable extinguishing media	: High volume water jet			place. Containers which are opened mu kept upright to prevent leakage.	st be carefully resealed a
Specific hazards during firefighting	: Do not allow run-off from fire fighti courses.	ing to enter drains or water		Observe label precautions. Electrical installations / working n the technological safety standards	
Hazardous combustion products	: Carbon dioxide (CO2) Carbon monoxide		Materials to avoid	: Oxidizing agents Store and keep away from bases	and alkalies.
Specific extinguishing	Chlorine compounds : Use extinguishing measures that				
methods	circumstances and the surroundin	g environment.	SECTION 8. EXPOSURE CONTRO	LS/PERSONAL PROTECTION	

SAFETY DATA SHEET

## Components with workplace control parameters Components CAS-No. Value type Control Basis

	exposure)	Permissible concentration	
7647-01-0	С	2 ppm	ACGIH
	С	5 ppm	NIOSH REL
		5 ppm	NIUS
	7647-01-0	exposure)	7647-01-0 C 2 ppm

## SAFETY DATA SHEET

Further information

Special protective equipment for firefighters

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Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. Standard procedure for chemical fires.

Wear self-contained breathing apparatus for firefighting if necessary.

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ZEP-O-CLEAN_12CS QTS					
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	1	7 mg/m3	1		
	С	5 ppm 7 mg/m3	OSHA Z-1		
	С	5 ppm 7 mg/m3	OSHA P0		
	PEL	0.3 ppm 0.45 mg/m3	CAL PEL		
	С	2 ppm	CAL PEL		

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Engineering measures : effective ventilation in all processing areas

## Personal protective equipment

Respiratory protection	<ul> <li>Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines.</li> </ul>
Hand protection Material Remarks	: Protective gloves : The suitability for a specific workplace should be discussed with the producers of the protective gloves.
Eye protection	: Access to clean water to rinse eyes must be available, options include: eye wash stations or showers, or eye wash bottles with pure water. Tightly fitting safety goggles Wear face-shield and protective suit for abnormal processing problems.
Skin and body protection	: Impervious clothing Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Hygiene measures	: When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

 TION S. THISICAL AND SHE		AL TROPERIED
Appearance	:	liquid
Colour	:	opaque
Odour	:	pungent
Odour Threshold	:	No data available
pH	:	< 2
Boiling point	:	107.2 °C
Flash point	:	does not flash
Evaporation rate	:	No data available

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		Lepine
EP-O-CLEAN_12CS	QTS	
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Upper explosion limit	: No data available	
Lower explosion limit	: No data available	
Vapour pressure	: No data available	
Relative vapour density	: No data available	
Density	: 1.115 g/cm3	
Solubility(ies)		
Water solubility	: soluble	
Partition coefficient: n- octanol/water	: No data available	
Auto-ignition temperature	: not determined	
Thermal decomposition	: No data available	
Viscosity		
Viscosity, kinematic	: No data available	
ECTION 10. STABILITY AND I	REACTIVITY	
Reactivity	: Stable	
Chemical stability	: Stable under normal conditions.	
Possibility of hazardous reactions	: No decomposition if stored and ap	plied as directed.
Conditions to avoid	: No data available	

Incompatible materials	: Oxidizing agents Bases

Hazardous decomposition products : Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke).

## SECTION 11. TOXICOLOGICAL INFORMATION

## Potential Health Effects

Aggravated Medical Condition	: None known.
Symptoms of Overexposure	: Effects are dependent on exposure (dose, concentration, contact time). Effects are immediate and delayed. Symptoms may include bilotering, initiation, burns, and pain. Symptoms may include shortness of breath, dry cough, and imitation of the nose, eyes, lips, mouth, and throat.

## SAFETY DATA SHEET

Ver

Acute toxicity

No data available

Product:

Product:

Skin corrosion/irritation

Serious eye damage/eye irritation

Respiratory or skin sensitisation No data available

Germ cell mutagenicity No data available

Carcinogenicity

No data available Reproductive toxicity

No data available STOT - single exposure

No data available

No data available

Further information Product:

STOT - repeated exposure No data available Aspiration toxicity

Remarks: No data available

Remarks: Extremely corrosive and destructive to tissue

Remarks: May cause irreversible eye damage.

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rsion 2.0	Revision Date 05/06/2018	Print Date 03/24/2023
Carcinogenicity:		
IARC	No component of this product present equal to 0.1% is identified as probable human carcinogen by IARC.	
ACGIH	No component of this product present equal to 0.1% is identified as a carcin carcinogen by ACGIH.	
OSHA	No component of this product present equal to 0.1% is on OSHA's list of rec	
NTP	No component of this product present equal to 0.1% is identified as a known by NTP.	t at levels greater than or

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SAFETY DATA SHEET Zepinc ZEP-O-CLEAN\_12CS QTS Version 2.0 Revision Date 05/06/2018 Print Date 03/24/2023 SECTION 12. ECOLOGICAL INFORMATION Ecotoxicity No data available Persistence and degradability No data available Bioaccumulative potential Product: Partition coefficient: n-: Remarks: No data available octanol/wate Mobility in soil No data available Other adverse effects No data available Product: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Regulation Substances This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Remarks Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B) Additional ecological : No data available information SECTION 13 DISPOSAL CONSIDERATIONS Disposal methods Waste from residue

Waste from residues	<ul> <li>The product should not be allowed to enter drains, water courses or the soil.</li> <li>Do not contaminate ponds, waterways or ditches with chemical or used container.</li> <li>Dispose of in accordance with local regulations.</li> </ul>
Contaminated packaging	: Empty remaining contents. Dispose of as unused product. Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

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## SAFETY DATA SHEET

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Transportation Regulation: 49 CFR (USA):
UN3264, Corrosive liquid, acidic, inorganic, n.o.s., (HYDROCHLORIC ACID), 8, II - Limited quantity
Transportation Regulation: IMDG (Vessel): UN3264, CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S., (HYDROCHLORIC ACID), 8, II -
Limited quantity
Transportation Regulation: IATA (Cargo Air):
UN3264, Corrosive liquid, acidic, inorganic, n.o.s., (HYDROCHLORIC ACID), 8, II

Transportation Regulation: IATA (Passenger Air) UN3264, Corrosive liquid, acidic, inorganic, n.o.s., (HYDROCHLORIC ACID), 8, II

Transportation Regulation: TDG (Canada): UN3264, CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S., (HYDROCHLORIC ACID), 8, II -Limited quantity

The product as delivered to the customer conforms to packaging requirements for shipment by road under US Department of Transportation (DOT) regulations. Additional transportation classifications noted above are for reference only, and not a certification or warranty of the suitability of the packaging for shipment under these alternative transport regulations.

## SECTION 15. REGULATORY INFORMATION

TSCA list	o substances are subject to a Significant N	New Use Rule.
	o substances are subject to TSCA 12(b) e quirements.	xport notification

EPCRA - Emergency Planning and Community Right-to-Know Act

## CERCLA Reportable Quantity

\_\_\_\_

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)	
hydrochloric acid	7647-01-0	5000	*	
*: Calculated RQ exceeds rea	asonably attainable upp	er limit.		
SARA 304 Extremely Hazar	dous Substances Rep	ortable Quantity		
This material does not contain	n any components with	a section 304 EHS	RQ.	
SARA 311/312 Hazards	: Skin corrosion or in Serious eye damag Specific target orga		repeated exposure)	
SARA 302	: No chemicals in this requirements of SA	s material are subject RA Title III, Section		
SARA 313	known CAS numbe	This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.		
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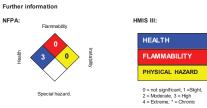
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TSCA (USA), DSL (Canada), NDSL (Canada)

## SECTION 16. OTHER INFORMATION

Hazard pictograms

Signal w ord Hazard statements Precautionary state



OSHA - GHS Label Information

Danger: Causes severe skin burns and eye damage. May cause respiratory irritation. Prevention: Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray. Wash skin thoroughly after handling. Use only outdoors or in a well-ventilated area. Wear

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## ZEP-O-CLEAN\_12CS QTS Version 2.0

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protective gloves/ protective clothing/eye protection/face protection. **Response:** FSWALLOWED: Rinse mouth: Do NOT induce vomiting. IF ON SKN (or hist): Take of Imrediately al contaminated cohting, Rinse skin with waterishower. IF NP4/LED: Remove person to fresh air and keep comfortable for foreathing, immediately all a POSION CENTREVIDENCE. IN PEPS: Rinse calculosity with wateri for several minutes. Remove contactioness, if present and easy to do. Continue rinsing. Immediately acid a POSION CENTREVIDector: Wash contaminated cohting. References reuse. Storage: Store in a w ell-ventilated place. Keep container tightly closed. Disposal: Dispose of contents/container in accordance with local regula tion

Version:	2.0
Revision Date:	05/06/2018
Print Date:	03/24/2023

We believe the statements, technical information and recommendations contained herein are We beneve the statements, technical mioritation and recommendations contained herein are reliable, but by are given without warranty or guarantee of any kind. The information in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. Users should make their own investigations to determine the suitability and applicability of the information for their particular purposes. This SDS has been prepared by the Compliance Services organization supporting this manufacturer, supplier or distributor.

Zep Inc. markets products under well recognized and established brand names such as Zep®, Zep Commercial®,Zep Professional®, Enforcer®, National Chemical™, Selig™, Misty®, Next Dimension™, Petro®, I-Chem®, TimeMist®, TimeWick™, MicrobeMax®, Country Vet®, Kont®, Original Bike Spirite, Blac Koralgie, Rain-X®, Nagara National™, FC Forward Chemicals®,Rexodan®, Mykal™, and a number of private labeled brands.

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Product Name Citric Acid Revision Date 27-May-2022 Page 2 / 12



# SAFETY DATA SHEET

## Issue Date 23-05-2019 Revision Date 27-May-2022 Version 4 Page 1 / 12 1. IDENTIFICATION Product identifier Product Name Citric Acid Other means of identification Product Code(s) 1454899 Safety data sheet number M00072 Recommended use of the chemical and restrictions on use Recommended Use Uses advised against Restrictions on use Laboratory reagent. Consumer use. For Laboratory Use Only. Details of the supplier of the safety data sheet Manufacturer Address Hach Company, P.O.Box 389, Loveland, CO 80539, USA, +1(970) 669-3050

Emergency telephone number +1(303) 623-5716 - 24 Hour Service

2. HAZARDS IDENTIFICATION Classification

Regulatory Status This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A
Specific target organ toxicity (single exposure)	Category 3

Hazards not otherwise classified (HNOC)

Label elements

Signal word Warning

EN / AGHS

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Product Code(s) 1454899 Issue Date 23-05-2019 Version 4



Hazard statements H315 - Causes skin irritation H319 - Causes serious eye irritation H335 - May cause respiratory irritation

H335 - May cause respiratory irritation
Procentionary statements
P302 + P302 + P303 - IF ON SKIN: Wash with plenty of soap and water
P302 + P303 - If skin irritation occurs. Get medical attention
P304 - P304 for contaminated obthing and wash before reuse
P280 - Wase protective gloves, protective clothing, eye protection, and face protection
P280 - Wase protective gloves, protective clothing, eye protective, and face protection
P280 - Wase protective gloves, protective clothing, eye protective quarks for several minutes. Remove contact lenses, if present and easy to
d304 - P304 - P303 - IF INE-PSE. Risc exclusionsy with water for several minutes. Remove contact lenses, if present and easy to
d304 - P304 - P304 - IF INIALED: Remove persons to resh air and keep comfortable for breathing
P314 - Call a POISON CENTER or doctor if you feel urwell
P403 - P303 - Store in a vell-ventilated pace. Keep container tightly closed
P405 - Store locked up
P501 - Dispose of contents/ container to an approved waste disposal plant

# Other Hazards Known May be harmful if swallowed

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance	
Chemical Name	Citric Acid
Chemical Family	Organic Acid.
Formula	C6H8O7
CAS No	77-92-9
Alternate CAS Number	5949-29-1 - Monohydrate
Chemical nature	Organic Compound.

Percent ranges are used where confidential product information is applicable

	Chemical name	CAS No	Percent Range	HMRIC #
	Citric acid	77-92-9	100%	-
	4. FIRST AID MEASUR	FS		
	4.11101 AID IIIEA001			
Description of first aid me	easures			
General advice	Show this safety data sheet to the doct	or in attendance.		
Inhalation	Remove to fresh air. IF exposed or con attention immediately if symptoms occu		lvice/attention. C	et medical
Eye contact	Rinse immediately with plenty of water, eye wide open while rinsing. Remove of			
EN / AGHS				
EN / AGHS				Page 2/1

Product Code(s) 1454899 Issue Date 23-05-2019 Version 4	Product Name Citric Acid Revision Date 27-May-2022 Page 3 / 12
	rinsing. Get medical attention if irritation develops and persists. Do not rub affected area.
Skin contact	Wash off immediately with soap and plenty of water for at least 15 minutes. Get medical attention if irritation develops and persists.
Ingestion	Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Call a physician.
Self-protection of the first aider	Avoid contact with skin, eyes or clothing.
Most important symptoms and effe	cts, both acute and delayed
Symptoms	Burning sensation.
Indication of any immediate medica	al attention and special treatment needed
Note to physicians	Treat symptomatically.
	5. FIRE-FIGHTING MEASURES
Suitable Extinguishing Media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable Extinguishing Media	Caution: Use of water spray when fighting fire may be inefficient.
Specific hazards arising from the chemical	No information available.
Hazardous combustion products	Carbon monoxide. Carbon dioxide (CO2).
Special protective equipment for fire-fighters	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.
	6. ACCIDENTAL RELEASE MEASURES
U.S. Notice	Only persons properly qualified to respond to an emergency involving hazardous substances may respond to a spill according to federal regulations (OSHA 29 CFR 1910.1203(4)) and per your company's emergency response plan and guidelines/procedures. See Section 13. Special Instructions for disposal assistance. Outside of the US, only persons properly qualified according to state or local regulations should respond to a spill involving chemicals.
Personal precautions, protective e	uipment and emergency procedures
Personal precautions	Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Avoid contact with skin, eyes or clothing.
Other Information	Refer to protective measures listed in Sections 7 and 8.
Environmental precautions	
Environmental precautions	Prevent further leakage or spillage if safe to do so.
Methods and material for containm	ent and cleaning up
Methods for containment	Prevent further leakage or spillage if safe to do so.
Methods for cleaning up	Take up mechanically, placing in appropriate containers for disposal.
EN / AGHS	Page 3 / 12

revention of secondary hazards deference to other sections	
eference to other sections	Clean contaminated objects and areas thoroughly observing environmental regulations.
	See section 8 for more information. See section 13 for more information.
	7. HANDLING AND STORAGE
recautions for safe handling	
dvice on safe handling	Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse. Ensure adequate ventilation. Avoid breathing vapors or mists. In case of insufficient ventilation, wear suitable respiratory equipment.
onditions for safe storage, includ	ing any incompatibilities
torage Conditions	Keep containers tightly closed in a dry, cool and well-ventilated place.
lammability class	Not applicable
8. EX	POSURE CONTROLS/PERSONAL PROTECTION
control parameters	
xposure Guidelines	This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies
ppropriate engineering controls ngineering Controls	Showers Eyewash stations Ventilation systems.
ndividual protection measures, su Respiratory protection	ch as personal protective equipment. No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.
land Protection	Wear suitable gloves. Impervious gloves. Barrier creams may help to protect the exposed areas of skin. Gloves must be inspected prior to use. The selected protective gloves have to satisfy the specifications of EU Directive 2016/425 and the standard EN 374 derived from it. Chemical resistant gloves made of butyl rubber or nitrile rubber category III according to EN 374-12016.
ye/face protection	If splashes are likely to occur, wear safety glasses with side-shields.
kin and body protection	Wear suitable protective clothing. Long sleeved clothing. Avoid contact with eyes, skin and clothing.
eneral Hygiene Considerations	Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Avoid contact with skin, eyes or clothing.
nvironmental exposure controls	Local authorities should be advised if significant spillages cannot be contained. Do not allow into any sewer, on the ground or into any body of water.
hermal hazards	None under normal processing.
(	9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance Odor	crystalline Odorless	Solid	Color Odor threshold	white Not applicable	8	
Property		Values		!	Remarks • Method	
Molecular weight		192.12 g/mole				
pH		2.1			D.1 M	
Melting point/free	zing point	153 °C / 307	.4 °F			
Boiling point / boiling range		No data availab	le			
Evaporation rate		Not applicable				
Vapor pressure		Not applicable				
Relative vapor de	nsity	No data availat	ble			
Specific gravity (	water = 1 / air = 1)	1.67				
Partition Coefficie	ent (n-octanol/water)	log Kow = -1.72				
	oon-Water Partition	log Koc = -1.16				
Coefficient Autoignition temp	perature	1010 °C / 18	50 °F			
Decomposition te	emperature	175 °C / 347	۴			
Dynamic viscosit	у	Not applicable				
Kinematic viscos	ity	Not applicable				
Solubility(ies)						
		14/-1	-1.1.111.	10/-4	- C-lubility T	
Water solut	bility classification	<u>Water s</u> 75000	olubility 0 mg/L	Wate	er Solubility Temperature 25 °C / 77 °F	
Water solut Compl Solubility in other	etely soluble r solvents	75000	0 mg/L		25 °C / 77 °F	
Water solut Compl Solubility in other Chemical Acids	r solvents NameSolution	75000	0 mg/L Solubi	lity	25 °C / 77 °F <u>Solubility Temperature</u> 25 °C / 77 °F	
Water solut Compl Solubility in other Chemical Acids Ethyl alc	r solvents Name Sc s ohol	75000i Dlubility classification Soluble Soluble	0 mg/L Solubi > 1000 I > 1000 I	lity ng/L	25 °C / 77 °F Solubility Temperature 25 °C / 77 °F 25 °C / 77 °F	
Water solut Compl Solubility in other Chemical Acids Ethyl alc Methar	r solvents       Name     Sc       s     Sc       ohol     Inol	750001 Soluble Soluble Soluble	0 mg/L Solubi > 1000   > 1000   > 1000   > 1000	lity ng/L ng/L	25 °C / 77 °F Solubility Temperature 25 °C / 77 °F 25 °C / 77 °F 25 °C / 77 °F	
Water solut Compl Solubility in other Chemical Acids Ethyl alc	Name         Sc           s	75000 Soluble Soluble Soluble Insoluble	0 mg/L Solubi > 1000 i > 1000 i > 1000 i < 0.1 m	lity ng/L ng/L ng/L	25 °C / 77 °F Solubility Temperature 25 °C / 77 °F 25 °C / 77 °F	
Water solul Compl Solubility in other Chemical Ethyl alc Ethyl alc Methan Benze Chiorofi Other Information Metal Corrosivity Steel Corrosivity	Name         Sc           s         -           ohol         -           nol         -           norm         -           0         -	750001 Soluble Soluble Soluble	0 mg/L Solubi > 1000   > 1000   > 1000   > 1000   < 0.1 m < 0.1 m Not applicable	lity ng/L ng/L ng/L	25 °C / 77 °F Solubility Temperature 25 °C / 77 °F 25 °C / 77 °F 25 °C / 77 °F 25 °C / 77 °F	
Compl Solubility in other Chemical Ethyl alc Methan Benze Chlorofr Other information Metal Corrosivity Steel Corrosivity Steel Corrosivity	Name         Sc           s         -           ohol         -           nol         -           norm         -           0         -	75000 olubility classification Soluble Soluble Insoluble Insoluble	D mg/L Solubi > 1000 > 1000 < 0.1 m < 0.1 m	lity ng/L ng/L ng/L	25 °C / 77 °F Solubility Temperature 25 °C / 77 °F 25 °C / 77 °F 25 °C / 77 °F 25 °C / 77 °F	

Product Name Citric Acid Revision Date 27-May-2022 Page 5 / 12

Product Code(s) 1454899 Issue Date 23-05-2019 Version 4	Product Name Citric Acid Revision Date 27-May-2022 Page 7 / 12
Inhalation	May cause irritation of respiratory tract.
Eye contact	Irritating to eyes. Causes serious eye irritation.
Skin contact	Causes skin irritation.
Ingestion	Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.
Symptoms	Redness. May cause redness and tearing of the eyes.
Acute toxicity	

Based on available data, the classification criteria are not met

Product Acute Toxicity Data If available, see ingredient data below.

Product Code(s) 1454899 Issue Date 23-05-2019 Version 4

Information on basic physical and chemical properties

Ingredient Acute Toxicity Data Test data reported below.

## Oral Exposure Route

(Clean Air Act)

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	Chemical name	Endpoint	Reported	Exposure	Toxicological effects	Key literature references and	L
		type	dose	time		sources for data	
1	Citric acid	Rat	3000 mg/kg	None reported	None reported	IUCLID (The International	L
	(100%)	LD50				Uniform Chemical Information	L
	CAS#: 77-92-9					Database)	L
					-		

Unknown Acute Toxicity 0% of the mixture consists of ingredient(s) of unknown toxicity.

## Acute Toxicity Estimations (ATE)

Not applicable The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)	No information available
ATEmix (dermal)	No information available
ATEmix (inhalation-dust/mist)	No information available
ATEmix (inhalation-vapor)	No information available
ATEmix (inhalation-gas)	No information available

Skin corrosion/irritation Classification based on data available for ingredients. Irritating to skin.

Product Skin Corrosion/Irritation Data If available, see ingredient data below.

Ingredient Skin Corrosion/Irritation Data Test data reported below.

## Key literature references and sources for data RTECS (Registry of Toxic Effects of Chemical Substances Chemical name Test method Reported dose Species Exposure time Results Citric acid (100%) CAS#: 77-92-9 Standard Draize Test 500 mg Rabbi 24 hours Mild ski

# <u>Serious eye damage/irritation</u> Classification based on data available for ingredients. Irritating to eyes.

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Product Code(s) 1454899 Issue Date 23-05-2019 Version 4		Product Name Citric Acid Revision Date 27-May-2022 Page 6 / 12	
This Product is by Weight 100% an Ind	ividual Pure Chemical Sub	stance	
This Product is by Weight 100% an Ind Chemical name	ividual Pure Chemical Sub	Volatile organic compounds (VOC) content	CAA

Explosive properties Upper explosion limit Lower explosion limit 64% 18% Flammable properties Flash point Not applicable Flammability Limit in Air Upper flammability limit: Lower flammability limit: No data available No data available No data available. Oxidizing properties Bulk density 560 kg/m<sup>3</sup>

## 10. STABILITY AND REACTIVITY

Reactivity Not applicable.

Chemical stability Stable under normal conditions.

Explosion data Sensitivity to Mechanical Impact None. Sensitivity to Static Discharge None.

Possibility of hazardous reactions None under normal processing.

Hazardous polymerization Hazardous polymerization does not occur.

Conditions to avoid None known based on information supplied.

# Incompatible materials\_\_\_\_\_\_ Strong acids. Strong bases. Strong oxidizing agents.

Hazardous decomposition products\_ Carbon monoxide. Carbon dioxide (CO2). Thermal decomposition can lead to release of irritating and toxic gases and vapors. 11. TOXICOLOGICAL INFORMATION

# 

Information on likely routes of exposure Product Information

Product Name Citric Acid Revision Date 27-May-2022 Page 8/12

Product Serious Eye Damage/Eye Irritation Data If available, see ingredient data below.

# Ingredient Eye Damage/Eye Irritation Data Test data reported below.

Chemical name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Citric acid (100%)	Standard Draize Test	Rabbit	0.750 mg	24 hours	Eye irritant	RTECS (Registry of Toxic Effects of
CAS#: 77-92-9						Chemical Substances)

Respiratory or skin sensitization Based on available data, the classification criteria are not met.

Product Sensitization Data If available, see ingredient data below.

Ingredient Sensitization Data

STOT - single exposure May cause respiratory irritation.

Product Specific Target Organ Toxicity Single Exposure Data If available, see ingredient data below.

Ingredient Specific Target Organ Toxicity Single Exposure Data No data available.

STOT - repeated exposure Based on available data, the classification criteria are not met.

Product Specific Target Organ Toxicity Repeat Dose Data If available, see ingredient data below.

Ingredient Specific Target Organ Toxicity Repeat Exposure Data Test data reported below.

Inhalation (Dust/Mist) Exposure Route

Carcinogenicity Based on available data, the classification criteria are not met.

Product Carcinogenicity Data If available, see ingredient data below.

# Ingredient Carcinogenicity Data No data available.

Chemical name	CAS No	ACGIH	IARC	NTP	OSHA
Citric acid	77-92-9	-	-	-	-
Legend					

ACGIH (American Conference of Governmental Industrial Hygienists)	Does not apply		
IARC (International Agency for Research on Cancer)	Does not apply		
NTP (National Toxicology Program)	Does not apply		
EN / AGHS		Page	8/12

Product Code(s) 1454899 Issue Date 23-05-2019 Version 4	Product Name Citric Acid Revision Date 27-May-2022 Page 10 / 12
No data available.	
Partition Coefficient (n-octanol/water)	log Kow = -1.72
Mobility	
Soil Organic Carbon-Water Partition Coefficient	log K <sub>oc</sub> = -1.16
Other adverse effects No information available	

# 13. DISPOSAL CONSIDERATIONS

Waste treatment methods	
Waste from residues/unused products	Dispose of waste in accordance with environmental legislation. Dispose of in accordance with local regulations.
Contaminated packaging	Do not reuse empty containers.
US EPA Waste Number	Not applicable

14. TRANSPORT INFORMATION DOT Not regulated TDG Not regulated IATA Not regulated IMDG Not regulated

Additional information There is a possibility that this product could be contained in a reagent set or kit composed of various compatible dangerous goods. If the item is not in a reagent set or kit, the classification given above applies. If the item is part of a reagent set or kit the classification would change to the following: UN3316 Chemical Kit, Hazard Class 9, Packing Group II or III. If the item is not regulated, the Chemical Kit classification does not apply.

15. REGULATORY INFORMATION ational Inventories

TSCA	Complies	
DSL/NDSL	Complies	
	xic Substances Control Act Section 8(b) Invent	
DOLINDOL - Calladiali L	omestic Substances Eistrijon-Domestic Substa	ances List
International Inventories	_	
EINECS/ELINCS	Complies	
ENCS	Complies	
IECSC	Complies	
<b>KECL</b> - Existing substan	ces Complies	
PICCS	Complies	
TCSI	Complies	
AICS	Complies	

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Product Code(s) 1454899 Issue Date 23-05-2019 Version 4	F	Product Name Citric A Revision Date 27-May Page 9 / 12	Acid /-2022	
OSHA (Occupational Safety and Hea Labor)	alth Administration of the I	US Department of	Does not apply	
Germ cell mutagenicity Based on available data, the classificat	tion criteria are not met.			
Product Germ Cell Mutagenicity invi If available, see ingredient data below.	<i>itro</i> Data			
Ingredient Germ Cell Mutagenicity in No data available.	<i>nvitro</i> Data			
Product Germ Cell Mutagenicity invi- If available, see ingredient data below.	<i>ivo</i> Data			
Ingredient Germ Cell Mutagenicity in No data available.	<i>nvivo</i> Data			
Reproductive toxicity Based on available data, the classificat	tion criteria are not met.			
Product Reproductive Toxicity Data No data available.				
Ingredient Reproductive Toxicity Da No data available.	ata			
Aspiration hazard Based on available data, the classificat	tion criteria are not met.			
	12. ECOLOGICAL	INFORMATION		
Ecotoxicity	Based on available data, th	e classification criteria	are not met.	
Unknown aquatic toxicity	0% of the mixture consists environment.	of components(s) of un	known hazards to the aquatic	
Product Ecological Data				
Aquatic Acute Toxicity If available, see ingredient data below.				
Aquatic Chronic Toxicity If available, see ingredient data below.				
Ingredient Ecological Data				
Aquatic Acute Toxicity No data available.				
Aquatic Chronic Toxicity No data available.				
Persistence and degradability				
Product Biodegradability Data No data available.				
Bioaccumulation MATERIAL DOES NOT BIOACCUMUI Product Bioaccumulation Data	LATE			
EN / AGHS			Page	9 / 12
Product Code(s) 1454899 Issue Date 23-05-2019 Version 4	F	Product Name Citric A Revision Date 27-May Page 11 / 12	\cid /-2022	
NZIOC	Complies			
EINECS/ELINCS - European Inventor EINCS - Japan Existing and New Che IECSC - China Inventory of Existing Q KECL - Korean Existing and Evaluate PICCS - Philippines Inventory of Chemi AICS - Australian Inventory of Chemi NZIoC - New Zealand Inventory of Ch	mical Substances Chemical Substances ed Chemical Substances micals and Chemical Substa Inventory cal Substances		of Notified Chemical Substances	

## US Federal Regulations

SARA 313 Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1996 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Yes Yes No No No

SARA 311/312 Hazard Categories	
Acute health hazard	
Chronic Health Hazard	
Fire hazard	
Sudden release of pressure hazard	
Peactive Hazard	

CWA (Clean Water Act) This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 The product of the Clean Water Act (40 CFR 122.21 and 40 CFR 122.

CERCLA This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

## US State Regulations

California Proposition 65 This product does not contain any Proposition 65 chemicals

IMERC: Not applicable

U.S. State Right-to-Know Regulations

This product does not contain any substances regulated by state right-to-know regulations.

## U.S. EPA Label Information

Chemical name	FIFRA	FDA
Citric acid	180.0950	21 CFR 184.1033

16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION

Special Comments None

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Product Name Citric Acid Revision Date 27-May-202 -2022 Page 12/12

## Additional information

Global Automotive Declarable Substance List (GADSL)

## NFPA and HMIS Classifications

NFPA	Health hazards - 2	Flammability - 0	Instability - 0	Physical and chemical properties -
HMIS	Health hazards - 2	Flammability - 0	Physical hazards - 0	Personal protection - I

## Key or legend to abbreviations and acronyms used in the safety data sheet

None

NIOSH IDLH	Immediately Dangerous to Life or Health
ACGIH	ACGIH (American Conference of Governmental Industrial Hygienists)
NDF	no data
Legend - Section 8: EXPO	SURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weigh	ted average)	STEL	STEL (Short Term Exposure Limit)
MAC	Maximum Allowa	ble Concentration	Ceiling	Ceiling Limit Value
Х	Listed		Vacated	These values have no official status. The only binding levels of contaminate are those listed in the final OSHA PEL. These lists are for reference purposes only. Please note that some reference state regulations of these "liberated" exposure limits in their state regulations.
SKN* RSP+ C M	Skin designation Respiratory sens Carcinogen mutagen	itization	SKN+ ** R	Skin sensitization Hazard Designation Reproductive toxicant
Prepared By		Hach Product Complian	ce Department	
Issue Date		23-05-2019		
Revision Date		27-May-2022		

# Revision Note

Disclaimer USER RESPONSIBILITY: Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations. THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED TO BE ACCURATE. HOWEVER, NO WARRANT IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF, HACH COMPANY@2022

## End of Safety Data Sheet

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Page 2 Date Printed 11/13/09 MSDS No: M00135

World Headguarters Askland Specialty Chemical Co. Drew Division One Drew Plazo, ... Boonton, NJ USA 07003 Sofiam Chrate C45 No.: 68-04-2 TSCA C45 Nomber: 08-141-2 Percent Range: 1.0-10.0 Percent Range Utds: weight / weight LD59: Non expond LC59: Non expond TLP: Not established PEL: Not established Heard: May cause instation. Colina Metholicullie
CAS Nut: 7681-574
FCC4 CAS Nutribut 7681-574
Percent Range: 2003-300
Percent Range: 2003-300
Percent Range: 2004-300
CAS Nutribut 1098

## 3. HAZARDS IDENTIFICATION

Emergency Overvlew:		
Appearance: White to I	ight yellow crystals	
Odor: Sulfur-like		
MAY CAUSE EYE A!	ND RESPIRATORY TRACT IRRITATION	N N
MAY CAUSE ALLER	GIC RESPIRATORY REACTION IF SV	ALLOWED OR INHALED
HMIS: Beakter 2		

Health: 2 Flummability: 0 Reactivity: 1 Protective Equipment: X - See protective equipment, Section 8. NFPA: Realth: 2

- Health: 2 Flammability: 0

- Health: 2 Flammability: 0 Reachiby: 1 Symbol: No applicable Symbol: No applicable Detential Health Effects Eye Canister: Not effects are anticipated Skin Absorption: None reported Target Organs: None reported Target Organs: None reported May cause: allergic respiratory reaction gastrointastinal iritiation circulasory disturbances central nervous system depression. Very large denset may cause: alconical pain diarches vomiling depression Target Organs: None reported Inhelation: May cause:: allergic respiratory reaction allergic respiratory reaction difficult breaking dupression Target Organs: None reported Inhelation: May cause:: allergic respiratory traction ensuing flaving hites Target Organs: None reported Medical Couldings Aggravated: Suffits are strong sensitizers. Inhelation and ingestion tang cause allergic respiratory reactions in solumatics. Forems with respiratory conditions should lake special cave when working with products that contains solities.

trajanting vocation in administry. From with regimency commons should not product that contain solites. Chronic Effects: Chronic overexposure may cause allergic respiratory reactions Cancer / Reproductive Toxicity Information: This predict does NOT contain any OSIA listed carcinogens.

World Headquarters Ashland Specialty Chemical Co. Drew Division One Drew Plaza.... Boonton, NJ USA 07005

MATERIAL SAFETY DATA SHEET 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION Product Name: FerroVerto (25 mL) Iron Reagent Foil Packs Catalog Number: \$4060 Emergency Telephone Numbers: (Medical and Transportation) (303) 623-5716 24 Hoar Service (\$15) 232-2533 8an - 4pm CSF Ashland Specialty Chemical Co. Drew Division One Drew Plaza, .... Boonton, NI USA 07005 MSDS Number: M00135 Chemical Name: Net applicable CAS Not, Not applicable Chemical Formula: Net applicable Chemical Formula: Net applicable Chemical Formula: Net applicable Hurardt: May cause allergic reaction. May cause invitation. Date of MSDS Preparation: Day: 15 Manth: October Sum 2000 Fear: 2009 2. COMPOSITION / INFORMATION ON INGREDIENTS Solium Thiosuifete C4S No.: 10102-17-7 C48 No.: 10102-17-7 TSCA C45 Number: 7772-98-7 Percent Range: 45.0 - 55.0 Percent Range: Libit: weight: weight LD50; Orai mt LD50 - 8 gm/kg LC50; None reported TLF: Not established PEL: Not established Hurarit: Mag cause infration.

I.D.Pisonautherittan-p-tolucneraifonic Acid Sah Cat Nue: 92798-16-8 TSCA CAS Samber: 92298-16-8 Percent Range 1:0:5:0 Percent Range Units: weight / weight LD59: Non ereported IC59: Non ereported IC59: Non ereported TLF: Not established PEL: Not established

Suthing H-strongflike C45 Nov. 7775-14-6 Precost Renge: 15.0-2750 Precost Renge Dirks: weight LD56: Orai ent D500-5480 mg/kg LC59: Nore exported C459: Nore exported 71.1/2: Nort established PLEL: Nort established Hazard: Allergers Causes moderate eye irritorion, Planmable solid.

# World Headquarters Sectally Chemical Co. Ashland Speci Drew Division One Drew Plaza, ... Booman, NJ USA 57065

Page 3 Date Printed 11/13/09 MSDS No: M00133

An ingredient of this mixture is: IARC Group 3: Non-classifiable Metablishiftes This product does NOT contain any N'IP listed chemicals.

Additional Concer / Reproductive Toxicity Information: Contains: an experimental mutagen. Toxicologically Synergistic Products: None reported

## 4. FIRST AD

Epe Contact: Immediately flush oyes with water for 15 minutes. Call physician. Skie Contact (First Ail): Wash skin with scap and phyny of wster. Ingestion (First Ail): Give 12 gasses of water. In one induce vomitting. Call physicism instructiately. Inhulation: Give artificial respiration if necessary. Remove to fresh site. Call physician.

## 5. FIRE FIGHTING MEASURES

 Planmable Properties: Can burn in fire, releasing toxic vapors.
 Plant Point: Nor applicable
 Method: Nor applicable
 Explosion Limits: Nor applicable
 Upper Explosion Limits: Nor applicable
 Upper Explosion Limits: Nor applicable
 Autoinglian Temperature: Nor determined
 Hazardour Combustion Products: Toxic funces of: sulfur oxides: sodium monoxide carbon monoxide, carbon
 dixxide; International commutation commutation of the second structure of the second 6. ACCIDENTAL RELEASE MEASURES Spill Response Notice:

Spill Response Andrez: Only presents importing qualified to respond to an emergency involving hazardous submasses may respond to a spill exceeding to following explanations (USEA 20 CFR 1910 12D)(30)) and use your company's emergency response plan and guidelines/greechores. See Section 13. Special Instructions for displayable also sistence. Consumment Techniques: Non-public insterial from being released to the environment. Cover spilled solid material with send or observations for section and spin-tial solutions of the solution of the solution of the solution of the spill value of a spilled response of the spin section of the spill value of the spin section of the spill value is only obtained. *Environment Techniques*: Evacuate local area; (15 foot reduce or as directed by your facility's energency response plan) when, any quantity is spilled. Troublismon warmani, increase the wise of the evacuation. *Special Instructions (for accidental relares)*: Not upplicable DAJ EMES RUG CFR 2533. In Not spilleding DAJ EMES RUG CFR 2533. In Not spilleding

## 7. HANDLING / STORAGE

Handling: Avoid costact with eyes skin clothing Do not breathe dust. Wash thoroughly after handling. Maintain general industrial brginne practices when using this product. Storage: Store between 01% and 25%. Protect from: heat moisture light Keep away from: acids/ acid fumes. combustlike materials. organic material visibures.

# World Headquarters Ashland Specialty Chemical Co. Drew Division One Drew Plaza, ... Boonton, NJ USA 07005

## 8. EXPOSURE CONTROLS / PROTECTIVE EQUIPMENT

Page 4 Date Printed 11/13/09 MSDS No: M09133

Engineering Controle. Have an expectation station nearby. Use general vestillation to minimize exposure to mist, vapor or dos. Montion general industries Hoylere practices when using this product. Personal Protections: adiny glasses with top and skin skitckla. Skin Protections: disposable lates glasses with top and skin skitckla. Endustrian Protections: adjugashbe lates glasses skin and for dust/mist mask Presentioners? Measures: Avoid contast with: eyes skin clothing. Do not breather: dost Wash thoroughly after-honding. Use with adjugate ventiliation. Protect from: heat. Keep uses from: and/weid fames. organic materials comburtible material oxidizers water *IVI*: Not established *PEL*: Not established

## 9. PHYSICAL / CHEMICAL PROPERTIES

HYSICAL / CHEMICAL PROPERTIES Appearance: While to ligh yellow crystals Physical State: Solid Molecular Weight: Net applicable Galor: Sulfar: Market applicable Subort: Sulfar: Solid Physical State: Solid Physical State: Solid Physical State: Solid Relifiq: Point: Not applicable Relifiq: Point: Not applicable Relifiq: Point: Not applicable Physical Components Content: Not determined Partialine Conference in Proton applicable Partialine Conference in Proton applicable Maren: Soluble Acting: Soluble Acting: Soluble Acting: Soluble Acting: Soluble Maren: Soluble Mare Steel: 0.106 in/yr Aluminum: 0.003 in/yr

## 10. STABILITY / REACTIVITY

Chemical Stability: Stable when stored surfar proper conditions. Conditions to Avoid: Exposure to light. Excess mosture lifetene temperaturess Reactively: Discongutability: Compatible with: combatible anterials organic materials oxidizers aluminara acids soliton initia: sublan chiorite Hearings: Decomposition: Hearing to decomposition releases toxic and/or concoive funces of: sulfar toxides carbon monoxide carbon disside Hearings: Decomposition: Will not occur.

## 11. TOXICOLOGICAL INFORMATION

Product Taxicological Data: LD59: None reported LC59: None reported Dermal Toxicity Data: None reported Skin and Eyo Fination Data: Explacent at 3 minutes, 1 hours, 4 hours, 24 hours, 48 hours, 72 hours = 0. Edema at 3 minutes, 1 hour, 4 hours, 24 hours, 48 hours, 72 hours = 0. Manation Data: Sodian Metabiadfilte: oprogenetic analysis hanster owary 180 µg-1; sister chronatid exchange on hanster ovary @ 200 µg-1.

World Hendquarters Ashlond Specialty Chemical Cu-Drew Division One Drew Plaza, ... Boonton, NJ USA 07005

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E.P.A. P.A.: S.A.R.A. Title III Section 311/312 Categorization (40 CPR 370): Immediate (Acute) Health Hazard Delayed (Chronic) Health Haard S.A.B.A. Take III Socian 313 (40 CFR 372): This product does NOT countain any cheroical subject to the reporting requirements of Socian 313 of Tile III of SARA.

## 16. OTHER INFORMATION

Intended Use: Into deterministion Reference: CCINFO MSDS-FTSS: Canadian Contro for Occupational Hochis and Sufery. Humilton, Ontario Canada: Reference: CCINFO MSDS-FTSS: Canadian Contro for Occupational Hochis and Sufery. Humilton, Ontario Canada: Bealis and Roman Services, April 1987: Outside Testing, Vender Information, Gosselin, R. E. et al., Chaical Toxicology of Cannocrial Produces, Suffaid, Bahanore: The Williams and William Co., 1984. Sax, N. Irving, Dangerous Properties of Industrial Produces, Suffaid, Bahanore: The Williams and William Co., 1984. Sax, N. Irving, Dangerous Properties of Industrial Materials, Phis New York: New Norman Relational Co., 1989. The Protection Guide on Haratedous Materials, 1984. Al. New York: New Norman Relational Co., 1984. The Protection Materials, 1084. Curricy, MA: National Time Protection Proceedings Information, Lobeane information. TLVN Timebold Limit Values and Biological Exposure Induces for 1982-1993. Amorican Conference of Governmental Industrial Applications, 1992. At Charlaman Langestor, No. 12. Thursday, January JA 1989. pp. 2332-2983. Revision Summany: Update: In Section(s) 14.

Legend: NA - Not Applicable ND - Not Determined NV - Not Available w/w - weight/weight w/v - weight/volume v/v - volume/volume

USER RESPONSIBILITY: Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations.

THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED TO BE ACCURATE. HOWEVER, NO WARKANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF TUPSE DATA OR THE RESULTS TO BE UBTAINED FROM THE USE THEREOF.

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Reproductive Effects Data: Sodium Metablaufise: oral rat TDLo = 26 g/kg - effects on newborn - stillbirth; oral rat TDLo = 40 g/kg - effects on newborn - weaking or lacation index. Ingeniter Tracticalogical Data: Sodium Hydrosulfite Oral rat LD50 > 500 reg/kg; Sodium Thiosulface Oral rat LD50 > 8 g/kg. Sodium Citrate Oral rat LD50 > 8 g/kg

# 12. ECOLOGICAL INFORMATION

## 13. DISPOSAL CONSIDERATIONS

EP4 Waste ID Numbers Not upplicable Special Instructions (Disposal): Dibut to 3 to 5 times the volume with cold water. Adjust to a pH between 6 and 9 with an altalit, atta is sold as the available indiversity. Open cold water tap completely, slowly pour the reacted material to the drain. Allow cold water to run for 5 minastes to completely fluck the system. Empty Containers: Rines three times with an appropriate solvers. Dispose of empty container as normal trash. NOTICE (Uppersult): Three domai guidents and solvers to based on federal regulators for more information.

## 14. TRANSPORT INFORMATION

D.O.T.: D.O.T. Proper Shipping Name: Not Currently Regulated

DOT Harard Class: NA DOT Subsidiary Risk: NA DOT ID Number: NA DOT Packing Group: NA

LCA.O.: LCA.O. Proper Shipping Name: Not Currently Regulated

ICAO Hugard Class: NA ICAO Subsidiary Risk: NA ICAO ID Number: NA ICAO Packing Group: NA

L.M.O. Proper Shipping Name: Not Currently Regulated

I.M.O. Hatard Class: NA I.M.O. Datability: Risk: NA I.M.O. D.Yanhor: NA I.M.O. Draking Group: NA Additional following: NA

## 15. REGULATORY INFORMATION

E.S. Federal Regulations: O.S.H.A.: This produce meets the criteria for a huardious substance as defined in the Hazard Communication Standard, (20 CTR 1910.1200)

HACH	HACH L Safety Data Sheet	ANGE GmbH
Be Right"	according to Regulation (EC) No 1907/2006	
	2301-49 FerroZine Iron Reagent	
Revision date: 18.01.2021	Product code: 230149	Page 1 of
SECTION 1: Identification of 1	he substance/mixture and of the company/undertaking	
1.1. Product identifier	Descent	
2301-49 FerroZine Iron	MMC1-2ATQ-P003-Y9WV	
	he substance or mixture and uses advised against	
Use of the substance/mixture		
Water analysis		
1.3. Details of the supplier of the	asfatu data abaat	
Company name:	HACH LANGE GmbH	
Street	Willstätterstr 11	
Place:	D-40549 Düsseldorf	
Telephone:	+49 (0)211 5288-383	
e-mail:	+49 (0)211 5268-363 SDS@hach.com	
e-mail: Internet:	susagnach.com	
	HACH LANGE Ltd.	
Responsible Department:		
	5, Pacific Way Salford Manchester M50 1DL - United Kingdom	
	Tel. +44 (0) 161 872 1487 * Fax +44 (0) 161 848 7324	
	e-Mail: info-uk@hach.com	
	HACH LANGE Ltd	
	Unit 1. Chestnut Road Western Industrial Estate	
	IRL-Dublin 12	
	Tel. +353 (0)1 4602522	
	e-Mail: info-ie@hach.com	
1.4. Emergency telephone	Poison Control Center Mainz: Tel: +49 (0) 6131 19240 - 24 hour emergency	
number:	service -	
SECTION 2: Hazards identific	ation	
2.1. Classification of the substar	ace or mixture	
Regulation (EC) No. 1272/2008		
Hazard categories:		
Acute toxicity: Acute Tox. 3		
Acute toxicity: Acute Tox. 4 Skin corrosion/irritation: Sk		
Serious eye damage/eye in Respiratory or skin sensitis		

	Acute toxicity: Acute Tox. 4
	Skin corrosion/irritation: Skin Corr. 1B
	Serious eye damage/eye irritation: Eye Dam. 1
	Respiratory or skin sensitisation: Skin Sens. 1
	Respiratory or skin sensitisation: Resp. Sens. 1B
	Hazardous to the aquatic environment: Aquatic Chronic 3
	Hazard Statements:
	Toxic if swallowed.
	Harmful if inhaled.
	Causes severe skin burns and eye damage.
	Causes serious eye damage.
	May cause an allergic skin reaction.
	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
	Harmful to aquatic life with long lasting effects.
2.2	Label elements

## Regulation (EC) No. 1272/2008

HACH LANGE GmbH HACH Safety Data Sheet Be Right according to Regulation (EC) No 1907/2006 2301-49 FerroZine Iron Reagent Revision date: 18.01.2021 Product code: 230149 Page 2 of 10 Hazard components for labelling Ammonium thioglycolate thioglycolic acid Danger Signal word: Pictograms: Hazard statements H301 Toxic if swallowed H314 Causes severe skin burns and eve damage H317 May cause an allergic skin react H332 Harmful if inhaled. H334 H412 May cause allergy or asthma symptoms or breathing difficulties if inhaled. Harmful to aquatic life with long lasting effects. Precautionary stateme P301+P330+P331 IS UP SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER/doctor. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P305+P351+P338 present and easy to ob. continue mining. If SWALLOVE: Immediately call a POISON CENTER/doctor. IF INHALED: Remove parson to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTER/doctor. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water P301+P310 P304+P340 P342+P311 P303+P361+P353 or shower Additional advice on labelling The product is classified as dangerous in accordance with Regulation (EC) No. 1272/2008 2.3. Other hazards no data available SECTION 3: Composition/information on ingredients 3.2. Mixtures

HACH LANGE GmbH (HACH) Safety Data Sheet Be Right" according to Regulation (EC) No 1907/2006 2301-49 FerroZine Iron Reagent Revision date: 18.01.2021 Product code: 230149 5.2. Special hazards arising from the substance or mixture Fire may liberate hazardous vapours. The following may develop in event of fire: sulfur oxides., Carbon Fire may liberate nazardous vapou monoxide, Carbon dioxide (CO2) 5.3. Advice for firefighters In the case of respirable dust and/or fumes, use self-contained breathing apparatus and dust impervious In the case of respi protective suit. Additional information Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. SECTION 6: Accidental release measures 6.1. Personal precautions. protective equipment and emergency procedures Use personal protective equipment. 6.2. Environmental precautions Do not flush into surface water or sanitary sewer system. 6.3. Methods and material for containment and cleaning up Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Sweep up or vacuum up spillage and collect in suitable container for disposal. 6.4. Reference to other sections 13. Disposal considerations SECTION 7: Handling and storage 7.1. Precautions for safe handling Advice on safe handling Avoid contact with skin and eyes. Advice on protection against fire and explosion See also section 5 Further information on handling Avoid contact with skin, eyes and clothing. 7.2. Conditions for safe storage, including any incompatibilities Requirements for storage rooms and vessels Keep container tightly closed in a dry and well-ventilated place Hints on joint storage Incompatible with acids. 7.3. Specific end use(s) Reagent for analysis

SECTION 8: Exposure controls/personal protection 8.1. Control parameters

Exposure limits (EH40)						
CAS No	Substance	ppm	mg/m <sup>3</sup>	fibres/ml	Category	Origin
68-11-1	Mercaptoacetic acid	1	3.8		TWA (8 h)	WEL
Additional advice on limit values						
None k	nown.					

## 8.2. Exposure controls



## Safety Data Sheet

HACH LANGE GmbH

Be Right

according to Regulation (EC) No 1907/2006 2301-49 FerroZine Iron Reagent Revision date: 18.01.2021 Product code: 230149 Page 3 of 10 Hazardous components 

CAS NO	Cnemical name			Quantity
	EC No	Index No	REACH No	
	GHS Classification			
5421-46-5	Ammonium thioglycolate			35,0-45,0 %
	226-540-9			
	Skin Irrit. 2, Eye Irrit. 2, Resp. Ser H412	s. 1B, Skin Sens. 1, Aquatic Chron	c 3; H315 H319 H334 H317	
7732-18-5	Water			20-30 %
	231-791-2			
68-11-1	thioglycolic acid			25,0-35,0 %
	200-677-4	607-090-00-6		
	Acute Tox. 3, Acute Tox. 3, Acute	Tox. 3, Skin Corr. 1B; H331 H311 H	301 H314	
69898-45-9	Ferrozine			<1 %
		•		
-				

Full text of H and EUH statements: see section 16.

## SECTION 4: First aid measures

## 4.1. Description of first aid measures

General information Take off contaminated clothing and shoes immediately

- Show this safety data sheet to the doctor in attendance

Move to fresh air in case of accidental inhalation of dust or fumes from overheating or combustion. Consult a physician for severe cases.

- Wash off immediately with plenty of water. If skin irritation persists, call a physician.
- After contact with eyes Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes Consult a physician.
- After ingestion
- Clean mouth with water and drink afterwards plenty of water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Call a physician

## immediately.

4.2. Most important symptoms and effects, both acute and delayed

## 4.3. Indication of any immediate medical attention and special treatment needed Treat sympt

SECTION 5: Firefighting measures

## 5.1. Extinguishing media

Suitable extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

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насн)	Safety Data Sheet	HACH LANGE Gm
Be Right™	according to Regulation (EC) No 1907/2006	
	2301-49 FerroZine Iron Reagent	
vision date: 18.01.2021	Product code: 230149	Page 5
Appropriate engineering controls Handle in accordance with good in	dustrial hygiene and safety practice.	
	nust be selected according to the concentration and amount of ic workplace. Wash hands before breaks and at the end of work	
Eye/face protection Safety glasses with side-shields		
Hand protection	ed protective gloves have to satisfy the specifications of EU Dir 374 derived from it.	ective
Skin protection Avoid contact with skin, eyes and c Respiratory protection	dothing.	
	ation use respirator with an approved filter. ilter	
Environmental exposure controls		
Do not flush into surface water or s	anitary sewer system.	
ECTION 9: Physical and chemical p	properties	
I. Information on basic physical and c	hemical properties	
Physical state:	liquid	
Colour:	yellow	
Odour:	strong, unpleasant	
pH-Value (at 20 °C):	3,5	
Changes in the physical state		
Melting point:	not applicable	
Initial boiling point and boiling range:	no data available	
Sublimation point:	not applicable	
Softening point:	not applicable	
Pour point:	no data available	
:	no data available	
Flash point:	not applicable	
Flammability		
Solid:	no data available	
Gas:	no data available	
Explosive properties not applicable		
	not applicable	
Lower explosion limits:		
Lower explosion limits: Upper explosion limits:	not applicable	
Upper explosion limits:	not applicable no data available	
Upper explosion limits: Ignition temperature: Auto-Ignition temperature	no data available	
Upper explosion limits: Ignition temperature: Auto-ignition temperature Solid:	no data available no data available	
Upper explosion limits: Ignition temperature: Auto-Ignition temperature Solid: Gas:	no data available	
Upper explosion limits: Ignition temperature: Auto-ignition temperature Solid:	no data available no data available no data available	

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Bornow         according to Regulation (EC) No 1907/2006           2301-49 FerroZine Iron Reagent           vision date: 18.01.2021         Product code: 230149         Page 6 of 10           Vapour pressure:         no data available         Page 6 of 10           Vapour pressure:         no data available         Page 6 of 10           Density (at 20 °C):         1,310 g/cm <sup>2</sup> Page 6 of 10           Buik density:         no data available         Page 6 of 10           Vapour pressure:         no data available         Page 6 of 10           Density (at 20 °C):         1,310 g/cm <sup>2</sup> Page 6 of 10           Solubility in other solvents           no data available         Page 6 of 10           Vapour pressure:         no data available         Page 6 of 10           Vapour density:         no data available         Page 6 of 10           Vapour density:         no data available         Page 6 of 10           Vapour density:         no data available         Page 6 of 10           Solvent content:         no data available         Page 6 of 10           Solvent content:         no data available         Page 6 of 10           Solvent content:         no data available         Page 6 of 10           Sold content: </th <th>HACH</th> <th>Safety Data Sheet</th> <th>HACH LANGE GmbH</th>	HACH	Safety Data Sheet	HACH LANGE GmbH
2301-49 FeroZine Iron Reagent         evision data: 18.01.2021       Product code: 230149       Page 6 of 11         Vapour pressure:       no data available       Density (at 20 °C):       1,310 g/cm <sup>2</sup> Bulk density:       no data available       miscible         Subulity:       no data available       Miscible         Vater solubility:       miscible       miscible         Yater solubility:       no data available       Miscible         Vater solubility:       no data available       Miscible         Vater solubility:       no data available       Miscible         Vascosity / kinematic:       no data available       Viscosity / available         Viscosity / kinematic:       no data available       Viscosity / available         Vapour density:       no data available       Viscosity / available         Evaporation rate:       no data available       Solvent content:       no data available         Solvent content:       no data available       Solvent content:       no data available         ECTION 10: Stability and reactivity       Stable under recommended storage conditions.       Solvent content:       Solvent content:         2. Other information       Stable under recommended storage conditions.       Solvent content:       Solvent content: </td <td></td> <td>according to Regulation (EC) No 1907/2006</td> <td></td>		according to Regulation (EC) No 1907/2006	
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2.4. Conditions to avoid Extremes of temperature and direct sunlight. 5. Incompatible materials Strong acids and oxidizing agents 9. Hazardous decomposition products To avoid thermal decomposition, do not overheat. Heating can release hazardous gases. Ammonia, Sulphur oxides ECTION 11: Toxicological information 1.1.Information on toxicological effects Acute toxicity LD50/oral/rat = 190mg/kg AtEmix calculated	0.3. Possibility of hazardous reactions		
Extremes of temperature and direct sunlight. 0.5. Incompatible materials Strong addis and oxidizing agents 0.5. Hazardous decomposition products To avoid thermai decomposition, do not overheat. Heating can release hazardous gases. Ammonia, Sulphur oxides ECTION 11: Toxicological information 1.1. Information on toxicological effects Acute toxicity LD50/oral/rat = 190mg/kg ATEmix calculated	Reacts with the following substance	es: Oxidizing agents, Strong acids	
Strong acids and oxidizing agents         0.6. Hazardous decomposition products         To avoid thermal decomposition, do not overheat. Heating can release hazardous gases. Ammonia, Sulphur oxides         ECTION 11: Toxicological information         11: Information on toxicological effects         Acute toxicity         LDSOloral/rat = 190mg/kg         Afterix calculated	0.4. Conditions to avoid Extremes of temperature and direc	t sunlight.	
0.6. Hazardous decomposition products To avoid thermal decomposition, do not overheat. Heating can release hazardous gases. Ammonia, Subplur oxides ECTION 11: Toxicological information 1.1. Information on toxicological effects Acute toxicity LDS0/oral/rat = 190mg/kg AtEmic calculated	10.5. Incompatible materials Strong acids and oxidizing agents		
To avoid thermal decomposition, do not overheat. Heating can release hazardous gases. Ammonia, Sulphur oxides ECTION 11: Toxicological information 1.1.Information on toxicological effects Acute toxicity LD50/orai/rat = 190mg/kg ATEmix calculated		e .	
1.1. Information on toxicological effects Acute toxicity LD50/orai/rat = 190mg/kg AfEmix calculated	To avoid thermal decomposition, de		
Acute toxicity LD50/oral/rat = 190mg/kg ATEmix calculated	SECTION 11: Toxicological informati	ion	
LD50/oral/rat = 190mg/kg ATEmix calculated	11.1. Information on toxicological effects	<u>s</u>	
		ation vapour) 10,15 mg/l; ATE (inhalation aerosol) 1,691 mg	y/I

GB - EN

Print date: 08.02.2021

HACH

# Safety Data Sheet

HACH LANGE GmbH

				erroZine Iron			
Revision da	te: 18.01.2021		Pn	oduct code: 2301	49		Page 7 of 1
CAS No	Chemical name						
	Exposure route	Dose		Species	Source	Method	
5421-46-5	Ammonium thioglycola	te					
	dermal	LD50 mg/kg	7900	rabbit			
68-11-1	thioglycolic acid	1					
	oral	LD50	73 mg/kg	rat	RTECS		
	dermal	LD50 mg/kg	848	rat			
	inhalation vapour	ATE	3 mg/l				
	inhalation aerosol	ATE	0,5 mg/l				
Aspirati No a Specific No to Addition	substance or mixture is spiration toxicity classifi effects in experiment oxicology information is al information on tests k known. L experience oservations k known.	cation on an anim available.		target organ toxi	cant, repeated exposu	e.	
None Further info Hand	lle in accordance with g		al hygiene a	nd safety practice	a.		
None Further info Hand SECTION	tle in accordance with g		al hygiene a	nd safety practice	ð.		
None Further info Hand SECTION 12.1. Toxici No d 12.2. Persis No d	tle in accordance with g 12: Ecological inform <u>tv</u> ata is available on the p tence and degradabilit ata is available on the p	nation product itself		nd safety practice	ð.		_
None Further info Hand SECTION 12.1. Toxici No d 12.2. Persis No d 12.3. Bioac	tle in accordance with g 12: Ecological inform ty ata is available on the p tence and degradabili	nation product itself		nd safety practice	ð.		
None Further info Hand SECTION 12.1. Toxici No d 12.2. Persis No d 12.3. Bioac no d 12.4. Mobili	Ile in accordance with g 12: Ecological inform ty ata is available on the p tence and degradabilit ata is available on the p <u>cumulative potential</u> ata available	nation product itself		nd safety practice			
None Further info Hand SECTION 12.1. Toxici No d 12.2. Persis No d 12.3. Bioac no d 12.4. Mobili no d 12.4. Mobili 12.5. Result	tle in accordance with g 12: Ecological inform 12: A solution of the p tence and degradabilit ata is available on the p cumulative potential ta available ty in soll	nation product itself ty product itself		nd safety practice			

HAC	H	Safety Data Sheet	HACH LANGE GmbH	F
Be Rigi	ht	according to Regulation (EC) No 1907/2006		B
		2301-49 FerroZine Iron Reagent		
Revision date: 18	.01.2021	Product code: 230149	Page 8 of 10	Revisio
SECTION 13: D	isposal consideration	S		
13.1. Waste treat	ment methods			Mar
Disposal reco In accorda	mmendations nce with local and nation	al regulations.		Spe
	s Code - residues/unuse			Em
160506	discarded chemicals; la	WISE SPECIFIED IN THE LIST; gases in pressure contain boratory chemicals, consisting of or containing hazardous s boratory chemicals; hazardous waste		Oth
List of Wastes	s Code - used product			Air tran
160506	discarded chemicals; la	WISE SPECIFIED IN THE LIST; gases in pressure contain boratory chemicals, consisting of or containing hazardous s boratory chemicals; hazardous waste		<u>14.1</u> 14.2
List of Wastes	s Code - contaminated p			14.3
160506	WASTES NOT OTHER	WISE SPECIFIED IN THE LIST; gases in pressure contained		14.4
		boratory chemicals, consisting of or containing hazardous s boratory chemicals; hazardous waste	substances,	Haz
SECTION 14: Tr	ransport information			
Land transport (A				Spe
14.1. UN num		UN 2922		Lim
14.2. UN prop	er shipping name:	CORROSIVE LIQUID, TOXIC, N.O.S. (Thioglycolic ad thioglycolate)	id/ammonium	IATA IATA
14.3. Transpo	rt hazard class(es);	8		IATA
14.4. Packing	group:	Ш		IATA
Hazard label:		8+6.1		Oth
		A		
				14.5. E
Classification		CT1		EN
Special Provis		274		14.6. S
Limited quantit		1 L		
Excepted quar Transport cate		E2 2		<u>14.7.</u> T
Hazard No:		86		1
Tunnel restrict	ion code:	E		Other a
	ble information (land tra Quantities: E2	insport)		SECTI
Inland waterways				
Not tested	ble information (inland )	waterways transport)		<u>15.1. S</u> EU
Marine transport				Res
14.1. UN numl		UN 2922		1
	er shipping name:	CORROSIVE LIQUID, TOXIC, N.O.S. (Thioglycolic ac thioglycolate solution)	id/ammonium	Nat Emp
		8		
14.3. Transpo	rt hazard class(es):			
		II 8+6.1		

HACH	Safety Data Sheet	HACH LANGE GmbH
Be Right <sup>™</sup>	according to Regulation (EC) No 1907/2006	
Revision date: 18.01.2021	2301-49 FerroZine Iron Reagent Product code: 230149	Page 9 of 10
Marine pollutant: Special Provisions: Limited quantity:	- 274 1 L	
EmS: Other applicable information (marine tran	F-A, S-B	
Excepted Quantities: E2 Air transport (ICAO-TI/IATA-DGR)		
14.1. UN number:	UN 2922	
14.1. UN number: 14.2. UN proper shipping name:	CORROSIVE LIQUID, TOXIC, N.O.S. (Thioglycolic acid thioglycolate solution)	l/ammonium
14.3. Transport hazard class(es):	8	
14.4. Packing group:	Ш	
Hazard label:	8+6.1	
	<b>\$</b>	
Special Provisions:	A3 A803 0.51	
Limited quantity Passenger: IATA-packing instructions - Passenger:	0.5 L 851	
IATA-packing instructions - Lassenger:	1L	
IATA-packing instructions - Cargo: IATA-max. quantity - Cargo:	855 30 L	
Other applicable information (air transport Excepted Quantities: E2 Passenger-LQ: Y840	rt)	
14.5. Environmental hazards		
ENVIRONMENTALLY HAZARDOUS:	No	
14.6. Special precautions for user Use personal protective equipment.		
14.7. Transport in bulk according to Annex I not applicable	I of Marpol and the IBC Code	
Other applicable information		
not applicable		
SECTION 15: Regulatory information		
15.1. Safety, health and environmental regul	ations/legislation specific for the substance or mixture	
EU regulatory information Restrictions on use (REACH, annex XVII): Entry 3		
National regulatory information		
Employment restrictions:	Observe restrictions to employment for juveniles accord work protection guideline' (94/33/EC). Observe employm under the Maternity Protection Directive (92/85/EEC) for available and the set of the s	nent restrictions
Water hazard class (D):	nursing mothers. 2 - obviously hazardous to water	

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Revision No: 2,5

HACH LANGE GmbH

HACH	Safety Data Sheet	HACH LANGE GMBH
Be Right"	according to Regulation (EC) No 1907/2006	
	• • · · /	
	2301-49 FerroZine Iron Reagent	
Revision date: 18.01.2021	Product code: 230149	Page 10 of 10
15.2. Chemical safety as:	sessment	
Chemical safety as	sessments for substances in this mixture were not carried out.	
SECTION 16: Other inf	ormation	
Changes		
Revision: 18.01.20	21	
Safety datasheet s Revision: 7.05.201	ections which have been updated: 7 8	
	ections which have been updated: 2, 11	
Revision: 27.04.20		
Safety datasheet s	ections which have been updated: 2	
Revision: 21.05.20		
	ections which have been updated: 2, 4, 11	
Revision: 17.12.20	13 ections which have been updated: 9, 14	
,	res and used evaluation method according to Regulation (EC) No.	1272/2008 [CL B]
Classification		1272/2008 [CLF]
	Classification procedure	
Acute Tox. 3; H301	Calculation method	
Acute Tox. 4; H332	Calculation method	
Skin Corr. 1B; H314	Calculation method	
Eye Dam. 1; H318	Calculation method	
Skin Sens. 1; H317	Calculation method	
Resp. Sens. 1B; H334	Calculation method	
Aquatic Chronic 3; H412	Calculation method	
Relevant H and EUH	statements (number and full text)	
H301	Toxic if swallowed.	
H311	Toxic in contact with skin.	
H314	Causes severe skin burns and eye damage.	
H315	Causes skin irritation.	
H317 H318	May cause an allergic skin reaction. Causes serious eye damage.	
H319	Causes serious eye damage. Causes serious eve irritation.	
H331	Toxic if inhaled	
H332	Harmful if inhaled.	
H334	May cause allergy or asthma symptoms or breathing difficulties if	inholed
H412	Harmful to aquatic life with long lasting effects.	initialed.
Further Information	, 3	
	based on the present level of our knowledge. It does not, however, giv	ve assurance of
	and establishes no contract legal rights.	
(The data for the	hazardous ingredients were taken respectively from the last version of data sheet.)	of the sub-contractor's safety

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Product Code(s) 2589549 Issue Date 12-Jun-2019 Version 2.7 Product Name Chlorophosphonazo Indicator Solution Revision Date 26-Jan-2023 Page 2/13 Hazard statements H302 - Harmful if swallowed H312 - Harmful in contact with skin H315 - Causes skin irritation H319 - Causes skni irritation H317 - May cause an allergic skin reaction H319 - Causes serious eye irritation H370 - Causes damage to organs H372 - Causes damage to organs through prolonged or repeated exposure H372 - Causes damage to organs through prolonged or repeated exposure
Precautionary statements
Precautionary statements
P370 - Do not eat, drink or smoke when using this product
P301 + P312 - HF SWALLOWED. Call a POISON CENTER or doctor/physician if you feel unwell
P301 + P312 - HF SWALLOWED. Call a POISON CENTER or doctor/physician if you feel unwell
P302 + P302 - HF SWALLOWED. Call a POISON CENTER or doctor/physician if you feel unwell
P303 + P303 + F303 + F1 K P503 + F1 K P503 + F303 + F1 K P503 + F303 + Other Hazards Known None 3. COMPOSITION/INFORMATION ON INGREDIENTS Substance Not applicable Mixture Chemical Family Chemical nature Mixture. Aqueous alkaline solution. Percent ranges are used where confidential product information is applicable Chemical name CAS No Percent HMRIC # Ethanesulfonic acid, 2-[bis(2-hydroxyethyl)amino]-Methanaminium, N,N,N-trimethyl-, hydroxide, pentahydrate 10191-18-1 10424-65-4 1 - 5% 4. FIRST AID MEASURES Description of first aid measures



## Issue Date 12-Jun-2019 Revision Date 26-Jan-2023 Version 2.7 Page 1 / 13 1. IDENTIFICATION Product identifier Product Name Chlorophosphonazo Indicator Solution Other means of identification Product Code(s) 2589549 Safety data sheet number M00491 Recommended use of the chemical and restrictions on use Recommended Use Laboratory reagent. Uses advised against Consumer use. Restrictions on use For Laboratory Use Only. Details of the supplier of the safety data sheet Manufacturer Address Hach Company, P.O.Box 389, Loveland, CO 80539, USA, +1(970) 669-3050 Emergency telephone number +1(303) 623-5716 - 24 Hour Service 2. HAZARDS IDENTIFICATION Classification Regulatory Status This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200) Acute toxicity - Oral Acute toxicity - Dermal Skin corrosion/irritation Serious eye damage/eye irritation Skin sensitization Category 4 Category 4 Category 2 Category 2A Category 1 Category 1 Category 1 Specific target organ toxicity (single exposure) Specific target organ toxicity (repeated exposure) Hazards not otherwise classified (HNOC) Label elements Signal word Danger

SAFETY DATA SHEET

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Product Code(s) 2589549 Issue Date 12-Jun-2019 Version 2.7	Product Name Chlorophosphonazo Indicator Solution Revision Date 26-Jan-2023 Page 3 / 13				
General advice	Show this safety data sheet to the doctor in attendance.				
Inhalation	Remove to fresh air. IF exposed or concerned: Get medical advice/attention. Get medical attention immediately if symptoms occur.				
Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If symptoms persist, call a physician. Keep eye wide open while rinsing. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists. Do not thus affected area.				
Skin contact	May cause an allergic skin reaction. If symptoms persist, call a physician. Wash off immediately with soap and plenty of water for at least 15 minutes.				
Ingestion	Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Call a physician.				
Self-protection of the first aider	Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid contact with skin, eyes or clothing.				
Most important symptoms and effe	ects, both acute and delayed				
Symptoms	Itching. Rashes. Hives. Burning sensation.				
Indication of any immediate medica	al attention and special treatment needed				
Note to physicians	May cause sensitization in susceptible persons. Treat symptomatically.				
	5. FIRE-FIGHTING MEASURES				
	5. FIRE-FIGHTING WEASURES				
Suitable Extinguishing Media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.				
Suitable Extinguishing Media Unsuitable Extinguishing Media	Use extinguishing measures that are appropriate to local circumstances and the				
	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.				
Unsuitable Extinguishing Media Specific hazards arising from the	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Caution: Use of water spray when fighting fire may be inefficient.				
Unsuitable Extinguishing Media Specific hazards arising from the chemical	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Caution: Use of water spray when fighting fire may be inefficient. Product is or contains a sensitizer. May cause sensitization by skin contact.				
Unsuitable Extinguishing Media Specific hazards arising from the chemical Hazardous combustion products Special protective equipment for	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Caution: Use of water spray when fighting fire may be inefficient. Product is or contains a sensitizer. May cause sensitization by skin contact. This material will not burn. Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear.				
Unsuitable Extinguishing Media Specific hazards arising from the chemical Hazardous combustion products Special protective equipment for	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Caution: Use of water spray when fighting fire may be inefficient. Product is or contains a sensitizer. May cause sensitization by skin contact. This material will not burn. Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.				
Unsuitable Extinguishing Media Specific hazards arising from the chemical Hazardous combustion products Special protective equipment for fire-fighters U.S. Notice	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Caution: Use of water spray when fighting fire may be inefficient. Product is or contains a sensitizer. May cause sensitization by skin contact. This material will not burn. Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment. 6. ACCIDENTAL RELEASE MEASURES Only persons properly qualified to respond to an emergency involving hazardous substances may respond to a spill according to federal regulations (OSHA 29 CFR 1910-120(4))) and per your company's emergency response plan and guidelines/procedures. See Section 13, Special Instructions for disposal assistance. Outside of the US, only persons should				
Unsuitable Extinguishing Media Specific hazards arising from the chemical Hazardous combustion products Special protective equipment for fire-fighters U.S. Notice	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Caution: Use of water spray when fighting fire may be inefficient. Product is or contains a sensitizer. May cause sensitization by skin contact. This material will not burn. Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment. 6. ACCIDENTAL RELEASE MEASURES Only persons properly qualified to respond to an emergency involving hazardous substances may respond to a spill according to federal regulations (OSHA 29 CFR 1910.120(a))) and per your company's emergency response plan and guidelines/procedures. See Section 13, Special Instructions for disposal assistance. Outside of the US, only persons properly qualified according to state or local regulations should respond to a spill involving chemicals.				

Product Code(s) 2589549 Issue Date 12-Jun-2019 Version 2.7	Product Name Chlorophosphonazo Indicator Solution Revision Date 26-Jan-2023 Page 4 / 13					
Other Information	Refer to protective measures listed in Sections 7 and 8.					
Environmental precautions						
Environmental precautions	Prevent further leakage or spillage if safe to do so.					
Methods and material for containm	ent and cleaning up					
Methods for containment	Prevent further leakage or spillage if safe to do so.					
Methods for cleaning up	Pick up and transfer to properly labeled containers.					
Prevention of secondary hazards	Clean contaminated objects and areas thoroughly observing environmental regulations.					
Reference to other sections	See section 8 for more information. See section 13 for more information.					
	7. HANDLING AND STORAGE					
Precautions for safe handling						
Advice on safe handling	Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation, in case of insufficient ventilation, wear suitable respiratory equipment. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse.					
Conditions for safe storage, includ	ing any incompatibilities					
Storage Conditions	Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Store locked up.					
Flammability class	Not applicable					
0 54	POSURE CONTROLS/PERSONAL PROTECTION					
-	POSURE CONTROLS/FERSONAL PROTECTION					
Control parameters						
Exposure Guidelines	This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies					
Appropriate engineering controls Engineering Controls	Showers Eyewash stations Ventilation systems.					
	ch as personal protective equipment					
Respiratory protection	No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.					
Hand Protection	exceeded or irritation is experienced, verification and evacuation may be required. Wear suitable glows. Imperious glows. Bare-inter creams may help to protect the exposed areas of skin. Glowse must be inspected prior to use. The selected protective glows have to satisfy the specifications of EU Directive 2016/425 and the standard to 374 derived from it. Chemical resistant glows made of butyl rubber or nitrile nubber category III according to EN 374-12016.					
Eye/face protection	Wear safety glasses with side shields (or goggles). If splashes are likely to occur, wear safety glasses with side-shields.					
Skin and body protection	Wear suitable protective clothing. Long sleeved clothing.					
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General Hygiene Co	onsiderations		ontact with skin, ey drink or smoke wh			ves and eye/face protection.	Do
Environmental expo	osure controls		thorities should be sewer, on the grou			annot be contained. Do not a	allow
Thermal hazards		None ur	ider normal proces	ising.			
	9	. PHYS	ICAL AND CHI	EMICAL PROF	PERTIES		
Information on basi	ic physical and c	hemical	properties				
	queous solution Odorless	Liquid		Color Odor threshold	dark violet Not applicab	le	
Property			Values			Remarks • Method	
Molecular weight			Not applicable				
pН			7.26			@ 20 °C	
Melting point / freez	zing point		~ -1 °C / 30.	2 °F			
Initial boiling point	and boiling rang	e	98 °C / 208.4	°F			
Evaporation rate			1.03 (water = 1)				
Vapor pressure			23.627 mm Hg	/ 3.15 kPa at 2	5°C / 77°F		
Relative vapor dens	sity		0.62				
Specific Gravity			1.06				
Partition coefficient	t		No data available	в			
Soil Organic Carbo Coefficient	n-Water Partitior	ı	No data available	e			
Autoignition tempe	rature		No data available	в			
Decomposition tem	iperature		No data available	e			
Dynamic viscosity			~ 1.06 cP (mPa	s) at 20 °C / 6	8 °F		
Kinematic viscosity	1		~ 1 cSt (mm <sup>2</sup> /s)	at 20 °C / 68 °	F		
Solubility(ies)							
Water solubility							
	ty classification		Water so		Wat	er Solubility Temperature	
Solubility in other s	luble olvents		> 1000	mg/L		25 °C / 77 °F	
Chemical Na	ame		classification	Solubi		Solubility Temperature	_
Acid Other information		S	bluble	> 1000 r	mg/L	25 °C / 77 °F	
EN / AGHS						Page 5	/ 13

Product Name Chlorophosphonazo Indicator Solution Revision Date 26-Jan-2023 Page 5 / 13

Product Code(s) 2589549 Issue Date 12-Jun-2019 Version 2.7	Product Name Chlorophosphonazo Indicator Solution Revision Date 26-Jan-2023 Page 7 / 13
Hazardous decomposition produce Carbon dioxide. Carbon monoxide. I	s trogen oxides. Sulfur oxides. Ammonia.
	11. TOXICOLOGICAL INFORMATION
Information on likely routes of ex	DSUTE
Product Information	
Inhalation	May cause irritation of respiratory tract.
Eye contact	Irritating to eyes. Causes serious eye irritation.
Skin contact	May cause sensitization by skin contact. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons. Causes skin irritation.
Ingestion	Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Harmful if swallowed.
Symptoms	Itching. Rashes. Hives. Redness. May cause redness and tearing of the eyes.

Acute toxicity Harmful if swallowed Harmful in contact with skin

Mixture No data available.

Ingredient Acute Toxicity Data Test data reported below.

Product Code(s) 2589549 Issue Date 12-Jun-2019 Version 2.7

Oral Exposure Route

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Methanaminium,	Rat	34 mg/kg	None reported	None reported	NITE
N,N,N-trimethyl-,	LD50				
hydroxide,					
pentahydrate					
(1 - 5%)					
CAS#: 10424-65-4					

## Dermal Exposure Route

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Methanaminium, N,N,N-trimethyl-, hydroxide, pentahydrate (1 - 5%) CAS#: 10424-65-4	Rat LD50	25 mg/kg	None reported	None reported	ECHA

Unknown Acute Toxicity 7E-06% of the mixture consists of ingredient(s) of unknown toxicity.

## Acute Toxicity Estimations (ATE)

The following values are calculated based on chapter 3.1 of the GHS document

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Conditions to avoid None known based on information supplied.

# Incompatible materials\_ Strong acids. Strong bases. Strong oxidizing agents.

Reactivity Not applicable.

Product Name Chlorophosphonazo Indicator Solution Revision Date 26-Jan-2023 Page 6 / 13

# Steel Corrosion Rate Aluminum Corrosion Rate Volatile Organic Compounds (VOC) Content

Product Code(s) 2589549 Issue Date 12-Jun-2019 Version 2.7

Metal Corrosivity

## Chemical name CAS No CAA (Clean Air Act) Volatile organic compounds (VOC) content Ethanesulfonic acid, 2-[bis(2-hydroxyethyl)amino]-Methanaminium, N,N,N-trimethyl-, hydroxide, pentahydrate 10191-18-1 No data available 10424-65-4 No data available

No data available No data available

Explosive properties Upper explosion limit Lower explosion limit Not applicable Not applicable Flammable properties Flash point No data available

Flammability Limit in Air Upper flammability limit: Lower flammability limit: No data available No data available Oxidizing properties No data available Bulk density Not applicable

# 10. STABILITY AND REACTIVITY

Chemical stability\_ Stable under normal conditions. Explosion data Sensitivity to Mechanical Impact None. Sensitivity to Static Discharge None. Possibility of hazardous reactions None under normal processing.

# Hazardous polymerization Hazardous polymerization does not occur.

 anaoi	nonnai	processing.	

Product Name Chlorophosphonazo Indicator Solution Revision Date 26-Jan-2023 Page 8 / 13

ATEmix (oral)	1,824.80 mg/kg
ATEmix (dermal)	1,341.80 mg/kg
ATEmix (inhalation-dust/mist)	No information available
ATEmix (inhalation-vapor)	No information available
ATEmix (inhalation-gas)	No information available

Skin corrosion/irritation Classification based on data available for ingredients. Irritating to skin.

Mixture No data available.

Ingredient Skin Corrosion/Irritation Data Test data reported below.

Chemical name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Methanaminium, N,N,N-trimethyl-, hydroxide, pentahydrate (1 - 5%) CAS#: 10424-65-4	Standard Draize Test	Guinea pig	25 mg	24 hours	Corrosive to skin	NITE

Serious eye damage/irritation Classification based on data available for ingredients. Irritating to eyes.

Mixture No data available.

Ingredient Eye Damage/Eye Irritation Data No data available.

# Respiratory or skin sensitization May cause sensitization by skin contact.

Mixture No data available.

Ingredient Sensitization Data

<u>STOT - single exposure</u> Based on the classification criteria of the Globally Harmonized System as adopted in the country or region with which this safety data sheet compiles, this product has been determined to cause systemic target organ toxicity from acute exposure. (STOT SE). Causes damage to organs if swallowed. Causes damage to organs in contact with skin.

# Mixture No data available.

Ingredient Specific Target Organ Toxicity Single Exposure Data

## Oral Exposure Route

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references an sources for data	
Methanaminium, N,N,N-trimethyl-, hydroxide,	TD⊾₀ Rat	23 mg/kg	None reported	Behavioral Clonic convulsions Salivation	NITE	
EN / AGHS					Page 8 / 13	

Product Code(s) 2589549 Issue Date 12-Jun-2019 Version 2.7	Product Name Revision Date Page 10 / 13	Chlorophosphonazo Indicator Solution 26-Jan-2023

Aspiration hazard Rased on available data, the classification criteria are not met.

	12. ECOLOGICAL INFORMATION
Ecotoxicity	Based on available data, the classification criteria are not met.
Unknown aquatic toxicity	1E-05% of the mixture consists of components(s) of unknown hazards to the aquatic environment.
Mixture	
Aquatic Acute Toxicity No data available.	
Aquatic Chronic Toxicity No data available.	
Substance	
Aquatic Acute Toxicity No data available.	
Aquatic Chronic Toxicity No data available.	
Persistence and degradability	
Mixture No data available.	
Bioaccumulation There is no data for this product Mixture No data available.	
Partition coefficient	No data available
Mobility	
Soil Organic Carbon-Water Partitio	n Coefficient No data available
Other adverse effects No information available	
	13. DISPOSAL CONSIDERATIONS
	13. DISPOSAL CONSIDERATIONS
Waste treatment methods	
Waste from residues/unused products	Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.
Contaminated packaging	Do not reuse empty containers.
US EPA Waste Number	Not applicable
Special instructions for disposal	If permitted by regulation. Dilute to 3 to 5 times the volume with cold water. Open cold water tap completely, slowly pour the material to the drain. Allow cold water to run for 5 minutes to

Product Code(s) 2589549 Issue Date 12-Jun-2019 Version 2.7

Product Name Chlorophosphonazo Indicator Solution Revision Date 26-Jan-2023 Page 9 / 13

pentahydrate		Ataxia	
(1 - 5%)			
 CAS# 10424-65-4			

<u>STOT - repeated exposure</u> Causes damage to organs through prolonged or repeated exposure.

# Mixture No data available.

Ingredient Specific Target Organ Toxicity Repeat Exposure Data No data available

Carcinogenicity Based on available data, the classification criteria are not met.

Mixture No data available.

# Ingredient Carcinogenicity Data No data available.

Chemical name	CAS No	ACGIH	IARC	NTP	OSHA
Ethanesulfonic acid,	10191-18-1	-	-	-	-
2-[bis(2-hydroxyethyl)amin					
o]-					
Methanaminium,	10424-65-4	-	-	-	
N,N,N-trimethyl-,					
hydroxide, pentahydrate			1		

Legend A

ACGIH (American Conference of Governmental Industrial Hygienists)	Does not apply
IARC (International Agency for Research on Cancer)	Does not apply
NTP (National Toxicology Program)	Does not apply
OSHA	Does not apply

Germ cell mutagenicity Based on available data, the classification criteria are not met.

Mixture invitro Data No data available.

Substance invitro Data No data available.

Mixture invivo Data No data available.

Substance invivo Data No data available.

Reproductive toxicity Based on available data, the classification criteria are not met.

Mixture No data available.

Ingredient Reproductive Toxicity Data No data available.

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	completely flush the system. Dispose of material in an E.P.A. approved hazardous wast facility.
	14. TRANSPORT INFORMATION
DOT	Not regulated
TDG	Not regulated
IATA	Not regulated
IMDG	Not regulated
Additional information	
	15. REGULATORY INFORMATION
National Inventories	
TSCA DSL/NDSL	Complies Complies
IECSC KECL - Existing substances PICCS TCSI AICS NZIoC	Complies Does not comply Does not comply Complies Does not comply Does not comply
ENCS - Japan Existing and New IECSC - China Inventory of Existi KECL - Korean Existing and Eval	ing Chemical Substances luated Chemical Substances Chemicals and Chemical Substances ces Inventory emical Substances
ENCS - Japan Existing and New IECSC - China Inventory of Existi KECL - Korean Existing and Eva PICCS - Philippines Inventory of TCSI - Taiwan Chemical Substan AICS - Australian Inventory of Ch	Chemical Substances ing Chemical Substances Chemicals and Chemical Substances Chemicals and Chemical Substances ces Inventory emical Substances
ENCS - Japan Existing and New IECSC - China Inventory of Exist KECL - Korean Existing and Eva IECSS - Philippines Inventory of TCSI - Taiwan Chemical Substan AICS - Australian Inventory of Ch NZIoC - New Zealand Inventory of US Federal Regulations SARA 313 Section 313 of Title III of the Supe	Chemical Substances ing Chemical Substances Chemicals and Chemical Substances Chemicals and Chemical Substances ces Inventory emical Substances

RA 311/312 Hazard Categories
Acute health hazard
Chronic Health Hazard
Fire hazard
Sudden release of pressure hazard
Reactive Hazard

CWA (Clean Water Act) This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

EN / AGHS

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CERCLA This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

US State Regulations

California Proposition 65 This product does not contain any Proposition 65 chemicals

IMERC: Not applicable

U.S. State Right-to-Know Regulations

This product may contain substances regulated by state right-to-know regulations

U.S. EPA Label Information

16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION Special Comments

Additional information

Global Automotive Declarable Substance List (GADSL)

# Not applicable NFPA and HMIS Classifications

NFPA	Health hazards - 3	Flammability - 0	Instability - 0	Physical and chemical			
				properties -			
HMIS	Health hazards - 3	Flammability - 0	Physical hazards - 0	Personal protection -			
	-*	-	-	X			
				- 1			
Key or legend to abbreviations and acronyms used in the safety data sheet							

ACGIH	ACGIH (American Conference of Governmental Industrial Hygienists)
ATSDR	ATSDR (Agency for Toxic Substances and Disease Registry)
CCRIS	CCRIS (Chemical Carcinogenesis Research Information System)
CDC	CDC (Center for Disease Control)
CEPA	CEPA (Canadian Environmental Protection Agency)
CICAD	CICAD (Concise International Chemical Assessment Documents)
ECHA	ECHA (The European Chemicals Agency)
EEA	EEA (European Environment Agency)
EPA	EPA (Environmental Protection Agency)
ERMA	ERMA (New Zealands Environmental Risk Management Authority)
ECOSARS	Estimation through ECOSARS v1.11 part of the Estimation Programs Interface (EPI) Suite™
FDA	FDA (Food & Drug Administration)
GESTIS	GESTIS (Information System on Hazardous Substances of the German Social Accident
	Insurance)
HSDB	HSDB (Hazardous Substances Data Bank)
INERIS	INERIS (The National Industrial Environment and Risks Institute)
IPCS INCHEM	IPCS INCHEM (International Programme on Chemical Safety)
IUCLID	IUCLID (The International Uniform Chemical Information Database)
NITE	Japan National Institute of Technology and Evaluation (NITE)
NIH	NIH (National Institutes of Health)
	· · · · · ·
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Product Name Chlorophosphonazo Indicator Solution Revision Date 26-Jan-2023 Page 13 / 13 Product Code(s) 2589549 Issue Date 12-Jun-2019 Version 2.7 NIOSH NIOSH (National Institute for Occupational Safety and Health) NIOSH LOLI NDF NICNAS NIOSH IDLH OSHA PEEN LOLI (List of Lists - An International Chemical Regulatory Database) LCLI (List of Lists - An International Chemical Regulatory Database) no data Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS) Immediately Dangerous to Life or Health OSHA (Occupational Safety and Health Administration of the US Department of Labor) PEEN (Pan European Ecological Network) RTECS (Registry of Toxic Effects of Chemical Substances) SUS (Screening Information Dataset) for High Voltances) SUS (Screening Information Dataset) for High Voltances) SUS (Scales Department of Agriculture) USDA (United States Department of Agriculture) USDA (United States Department of Agriculture) WHO (World Health Organization) RTECS SIDS SYKE USDA USDC WHO Legend - Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION TWA TWA (time-weighted average) STEL STEL (Short Term Exposure Limit) MAC Maximum Allowable Concentration Ceiling Ceiling Limit Value These values have no official status. The only binding levels of contaminants are those listed in the final OSHA PEL. These lists are for reference purposes only. Please note that some reference state regulations of these "liberated" exposure limits in their state researched and the second state regulations of the researched and the second state regulations of the researched and the second state researched and the second state researched state regulations of the researched state regulations of the researched state regulations of the researched state х Listed Vacated regulations Skin sensitization Hazard Designation Reproductive toxicant SKN\* RSP+ C M Skin designation Respiratory sensitization Carcinogen mutagen SKN+ R Hach Product Compliance Department Prepared By Issue Date 12-Jun-2019 Revision Date 26-Jan-2023 Revision Note None

Disclaimer

USER RESPONSIBILITY: Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations.

THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED TO BE ACCURATE. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.

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End of Safety Data Sheet

EN / AGHS

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Page 2 Date Printed 9/23/04 MSDS No: M00370

World Headquarter: World Headquarters Ashland Specialty Chemical Co. Drew Division One Drew Plaza,... Boonton, NJ USA 07005 Page 1 Date Printed 9/23/04 MSDS No: M00370

# MATERIAL SAFETY DATA SHEET

## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Buffer Solution pH 10.01 ± 0.02 Catalog Number: 6444-09-5

Ashland Specialty Chemical Co. Drew Division One Drew Plaza, . . . Boonton, NJ USA 07005

Emergency Telephone Numbers: (Medical and Transportation) (303) 623-5716 24 Hour Service (515) 232-2533 8am - 4pm CST

MSDS Number: M00370 Chemical Name: Not applicable CAS No.: Not applicable Chemical Formula: Not applicable Inacard: May cause irritation. Date of MSDS Preparation: Date of MSDS Preparation: Day: 23 Month: 09 Year: 2004

2. COMPOSITION / INFORMATION ON INGREDIENTS

Demineralized Water

emineralized Water CAS No. 7732-18-5 TSCA CAS Number: 7732-18-5 Percent Range Units: Volume / volume / volume LD59: None reported LC59: None reported TLF: Not established PEL: Not established Hazard: No effects anticipated.

Other components, each CAS No.: Not applicable TSC A CAS Nomber: Not applicable Percent Range: <1.0 Percent Range Units: volume / volume LD50: Not applicable LC50: Not applicable ILF: Not established PLL: Not established Hazard: Any ingredient(s) of this product listed as "Other component(s)" is not considered a health hazard to the user of this product.

## 3. HAZARDS IDENTIFICATION

Emergency Overview: Appearance: Clear, blue Odor: None

World Headquarters Ashland Specialty Chemical Co. Drew Division One Drew Plaza,... Boonton, NJ USA 07005

HMIS: Health: 1 Flammability: 0 Reactivity: 0 Protective Equipment: X - See protective equipment, Section 8. NFPA:

Pa

VPPL: "Deputation of solar protective company VPPL: "Deputation of the solar protective company floating to the solar protection of the solar floating the solar biggers of the solar protection Swin Contact: May cause irritiation Skin Absorption: No effects anticipated Target Organs: Not applicable Ingestion: None reported Target Organs: Not applicable Influencial Conditions Aggravated: None reported Chronic Effects: None reported Chronic Effects: None reported Cancer / Reproductive Toxicity Information: This product does NOT contain any OSHA listed carcinogens This product does NOT contain any IARC listed chemicals.

This product does NOT contain any NTP listed chemicals.

Additional Cancer / Reproductive Toxicity Information: None reported Toxicologically Synergistic Products: None reported

## 4. FIRST AID

Eye Contact: Immediately flush eyes with water for 15 minutes. Call physician. Skin Contact (First Aid): Wash skin with plenty of water. Call physician if irritation develops. Ingestion (First Aid): Give large quantities of water. Call physician immediately. Inhulation: None required.

## 5. FIRE FIGHTING MEASURES

Finamahle Properties: Material will not burn.
Fina Proter: Not applicable
Method: Not applicable
Method: Not applicable
Interest Explosion Lintis: Not applicable
Upper Explosion Lintis: Not applicable
Autoignition Temperature: Not applicable
Hizardous Combistion Froducts: None
Fire LExplosion Hizards: None reported
Static Dicharge: None reported
Methodication Interest: None reported
Kethonical Impact: None reported
Kethonica

6. ACCIDENTAL RELEASE MEASURES

# World Headquarters Ashland Specialty Chemical Co. Drew Division One Drew Plaza, ... Boonton, NJ USA 07005

Spill Response Ardice: Ohly persons properly qualified to respond to an emergency involving hazardous substances may respond to a spill according to federal regulations (OSHA 29 CFR 1910.120(4)(v)) and per your company's emergency response plan and guidelines'procedures. See Section 13, Special Instructions for disposal assistance. Containment Technique: Stop spilled material with a dry acid, such as scittic or boric. Scoop up slurry into a large beaker. Adjust to a pH between 6 and 9 with an acid, such as sulfurie or citric. Flush reacted material to the drain with a large excess of water. Evacuation Procedure: Evacuate as needed to perform spill clean-up. If conditions warrant, increase the size of the evacuation evacuation. Special Instructions (for accidental release): Not applicable 304 EHS RQ (40 CFR 355): Not applicable D.O.T. Emergency Response Guide Number: None

## 7. HANDLING / STORAGE

Handling: Avoid contact with eyes Wash thoroughly after handling. Maintain general industrial hygiene practices when Storage: Protect from: heat Keep container tightly closed when not in use. Flammability Class: Not applicable

## 8. EXPOSURE CONTROLS / PROTECTIVE EQUIPMENT

Engineering Controls: Maintain general industrial hygiene practices when using this product. Personal Protective Equipment: Eye Protection: asfery glasses with top and side shields Skin Protection: disposable latex gloves lab coat Inhalation Protection: adequate ventilation Precentionary Measures: Avoid contact with: eyes Wash thoroughly after handling. TLV: Not established PEL: Not established

## 9. PHYSICAL / CHEMICAL PROPERTIES

Appearance: Clear, blue Physical State: Liquid Molecular Weight: Not applicable Odor: None pi: 10.0 Vapor Density (atr = 1): Not determined Bolling Point: -100°C (-212°F) Mething Point: -00°C (-212°F) Mething Point: -00°C (-212°F) Specific Gravity (water = 1): 0.36 Volatile Organic Compounds Content: Not applicable Partition Cafficient (n-extanol/water): Not determined Solubility: Water: Soluble Addi: Soluble Other: Not determined Metal Corrosivity: Stefet: Not determined Aluminum:: Not determined Appearance: Clear, blue

## 10 STABILITY / REACTIVITY

Chemical Stability: Stable when stored under proper conditions.

World Headquarter: Ashland Specialty Chemical Co. Drew Division One Drew Plaza, . . . Boonton, NJ USA 07005 Page 5 Date Printed 9/23/04 MSDS No: M00370

Page 3 Date Printed 9/23/04 MSDS No: M00370

Additional Information: This product may be shipped as part of a chemical kit composed of various compatible dangerous goods for analytical or testing purposes. This kit would have the following classification: Proper Shipping Name: Chemical Kit Hazard Class: 9 UN Number 3316

## 15 REGULATORY INFORMATION

U.S. Federal Regulations

Federal Regulations:
 O.S.H.4.: This product meets the criteria for a hazardous substance as defined in the Hazard Communication Standard. (2) GFR 1910.1200)
 E.P.4.:
 S.A.R.A. Title III Section 311/312 Categorization (40 CFR 370): Immediate (Acute) Health Hazard
 S.A.R.A. Title III Section 312 (40 CFR 372): This product does NOT contain any chemical subject to the reporting requirements of Section 313 of Title III of SARA.

requirements of Section 313 of Title III of SARA. 302 (EHS) TPO (40 CFR 355): Not applicable 304 CERCAL RQ (40 CFR 355): Not applicable 304 CERCAL RQ (40 CFR 355): Not applicable Clean Ware Act (40 CFR 1164): Not applicable RCR4: Contains on RCRA regulated substances. CP.S.C: Not applicable State Regulations: California Prop. 65: No Prop. 65 listed chemicals are present in this product. Identification of Prop. 65 Ingredient(s): None Trade Secret Registry: Not applicable National Inventories: U.S. Inventory Status: All interreliants in this product.

attonal Inventories: U.S. Inventory Status: All ingredients in this product are listed on the TSCA 8(b) Inventory (40 CFR 710). TSCA CAS Number: Not applicable

# 16. OTHER INFORMATION

Intended Use: Buffer References: 29 CFR 1900 - 1910 (Code of Federal Regulations - Labor). Air Contaminants, Federal Register, Vol. 54, No 12. Thursday, Janury 19, 1989: pp. 2332-2983. TLV's Threshold Limit Values and Biological Exposure Indices for 1992-1993. American Conference of Governmental Industrial Hygienists, 1992. Technical Judgment. In-house Revision Summary: Updates in Section(s) 14,

Legend:

nd: NA - Not Applicable ND - Not Determined NV - Not Available w/w - weight/weight w/v - weight/volume v/v - volume/volume

USER RESPONSIBILITY: Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations.

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Manufactured by Hach Company for Ashland Specialty Chemical Co

World Headquarters Ashland Specialty Chemical Co. Drew Division One Drew Plaza,... Boonton, NJ USA 07005

Conditions to Avoid: Heat Evaporation Reactivity / Incompatibility: None reported Hazardous Decomposition: None reported Hazardous Polymerization: Will not occu

## 11. TOXICOLOGICAL INFORMATION

Product Taxicological Data: LD50: None reported LC50: None reported Dermal Taxicip Data: None reported Skin and Epe Irritation Data: None reported Matation Data: None reported Reproductive Effects Data: None reported Ingredient Taxicological Data: None reported

## 12. ECOLOGICAL INFORMATION

Product Ecological Information: No information available for this product.

Ingredient Ecological Information: None reported

## 13. DISPOSAL CONSIDERATIONS

EPA Waste ID Number: None Special Instructions (Disposal): Adjust to a pH between 6 and 9 with an acid, such as sulfuric or citric. Open cold water tap completely, slowly pour the reacted material to the drain. Empty Containers: Runse three times with an appropriate solvent. Dispose of empty container as normal trash. NOTICE (Disposal): These disposal guidelines are based on federal regulations and may be superseded by more stringent state or local requirements. Please consult your local environmental regulators for more information.

## 14. TRANSPORT INFORMATION

D.O.T.: D.O.T. Proper Shipping Name: Not Currently Regulated -THazard Class: NA DOT Subsidiary Risk: NA DOT ID Number: NA DOT Packing Group: NA I.C.A.O. I.C.A.O. Proper Shipping Name: Not Currently Regulated I.M.O. Proper Shipping Name: Not Currently Regulated I.M.O. Hazard Class: NA I.M.O. Subsidiary Risk: NA I.M.O. ID Number: NA I.M.O. Packing Group: NA



## **SAFETY DATA SHEET**

## Crude Glycerine 78%

Section 1: Identification				
Company Identification: PREMIER CHEMICALS & SERVICES, L 4856 Revere Avenue, Suite A Baton Rouge, LA 70808	ΓC			
24 Hour Emergency Telephone:	Call Chemtrec 800-424-9300 Ref#: 200235			
Customer Service:	Call 225-926-0059			
Common Names:	Methanolysis Crude Glycerine, Glycerol; 1,2,3-Propanetriol; Glyceritol; Glycic Alcohol; 1,2,3-Trihydroxypropane; 1,2,3- Propanetriol			
Sectio	on 2: Hazard(s) Identification			
Emergency Overview				
Appearance: liquid, amber color, wit	h characteristic odor			
CAUTION! MAY CAUSE EYE, SKIN INHALED.	N AND RESPIRATORY TRACT IRRITATION. MAY BE HARMFUL IF			
Potential Health Effects				

Routes of exposure Inhalation, Skin absorption, Skin contact, Eye Contact, Ingestion Eve contact

May cause mild eye irritation. Symptoms include stinging, tearing, and redness.



## **SAFETY DATA SHEET**

Skin contact May cause mild skin irritation. Prolonged or repeated contact may dry the skin. Symptoms may include redness, burning, drying and cracking of skin, and skin burns. Unlikely to cause skin irritation or injury. Passage of this material into the body through the skin is possible, but it is unlikely that this would result in harmful effects during safe handling and use.

# Ingestion

Swallowing small amounts of this material during normal handling is not likely to cause harmful effects. Swallowing large amounts may be harmful.

## Inhalation

minatorin It is possible to breathe this material under certain conditions of handling and use (for example, during heating, spraying, or stirring). Breathing small amounts of this material during normal handling is not likely to cause harmful effects. Breathing large amounts may be harmful. Symptoms are not expected at air concentrations below the recommended exposure limits, if applicable (see Section 6.).

Aggravated Medical Condition Preoxisting disorders of the following organs (or organ systems) may be aggravated by exposure to this material: Sikung (for example, asthma-like conditions).

Symptoms Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include: stomach or intestinal upset (nausea, vomiting, diarrhea), thirst, irritation (nose, throat, ainvays), Headache, Dizziness, central nervous system depression (dizziness, drowsiness, weakness, fatigue, nausea, headache, unconsciousness).

Target Organs Overexposure to this material (or its components) has been suggested as a cause of the following effects in laboratory animals: mild, reversible liver effects, mild, reversible kidney effects.

Carcinogenicity This material is not expected to cause cancer in humans since it did not cause cancer in laboratory animals. This material is not listed as a carcinogen by the International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP), or the Occupational Safety and Health Administration (OSHA).

Based on the available information, risk to the fetus from maternal exposure to this material cannot be assessed.

Hazard Pictograms: NONE

Revised Nov 2016



# **SAFETY DATA SHEET**

## Section 5: Fire-Fighting Measures

# Suitable extinguishing media Alcohol-resistant foam, Carbon dioxide (CO2), Dry chemical

Hazardous combustion products May form, acrolein, aldehydes, carbon dioxide and carbon monoxide, Carbon oxides.

## Precautions for fire-fighting

Precations for mergining No special fire hazards are known to be associated with this product. Weat full firefighting turn-out gear (full Bunker gear), and respiratory protection (SCBA). DO NOT direct a solid stream of water or foam into hot, burning pools of liquid since this may cause frothing and increase fire intensity. Frothing can be violent and possibly endanger any firefighter standing too close to the burning liquid. Use water spray to cool fire exposed containers and structures until fire is out if it can be done with minimal risk. Avoid spreading burning liquid with water used for cooling purpo

## Section 6: Accidental Release Measures

**General Information** 

Use proper personal protective equipment as indicated in Section 8.

## Spills/Leaks

Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Remove all sources of ignition. Provide ventilation.

## Section 7: Handling and Storage

Wash thoroughly after handling. Wash hands before eating. Use with adequate ventilation. Avoid contact with eyes, skin, and clothing. Keep container tighthy closed. Avoid ingestion and inhalation. Wash clothing before reuse.

Storage Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. No special precautions indicated.



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## **SAFETY DATA SHEET**

mposition:					
AS#	Chemical Name/Ingredient	Concentration			
5-81-5	Glycerine	≥78 (w/w)%			
732-18-5	Water	>14 (w/w)%			
7-56-1	Methanol	<1 (w/w)%			
-	Various soaps, salts & other inorganic materials	<7 (w/w)%			
	Section 4: First-Aid Measures				
t Ald Measures	Section 4: First-Aid Measures				
t Ald Measures Ieral Advice:	Section 4: First-Aid Measures In case of accident or if you feel unveil, seek medical ac for use or safety data sheet if possible)	fvice immediately (show dire			

	cough of other respirately symptome develop.
Skin Contact:	Wash skin with plenty of scop and water. Get medical attention if irritation persists.
Eye Contact:	Flush immediately with large amounts of water for at least 15 minutes. Eyelids should be held away from the eyebail to ensure thorough ninsing. Genity remove contacts while flushing. Get medical attention if mitation persists.
Ingestion:	If swallowed, DO NOT induce vomiting. If spontaneous vomiting occurs, keep head below hips, or if patient is lying down, turn body and head to side to prevent aspiration and monitor for breaking difficulty. If symptoms develop, seek medicial attention.
Most important signs and s	ymptoms, both short-term and delayed with overexposure
Adverse Effects:	Repeated or prolonged skin contact may cause drying, reddening, ifching and cracking.
Indication of any immediate	medical attention and special treatment needed
Notes To Physician:	Contains small amounts of methanol (up to 0.6%). Methanol can induce metabolic acidosis, with delayed effects. If the product is ingested consider the use of ethanol or fomepizole (Antizci) and hemodialysis. Consult standard literature or contact a poison control center for treatment details.

Revised Nov 2016



## **SAFETY DATA SHEET**

## Section 8: Exposure Controls/Personal Protection

# Exposure Guidelines GLYCERINE 56-81-5

GLYCERINE 56-81-5 ACGIH time weighted average 10 mg/m3 Mist. OSHA Z1 Permissible exposure limit 5 mg/m3 Respirable fraction. OSHA Z1 Permissible exposure limit 15 mg/m3 Total dust.

## General advice

General advice These recommendations provide general guidance for handling this product. Personal protective equipment should be selected for individual applications and should consider factors which affect exposure potential, such as handling practices, chemical concentrations and ventilation. It is ultimately the responsibility of the employe to follow regulatory guidelines established by local authorities. uch

## Exposure controls

Exposure controls Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below TLV(s). I Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below level of overexposure (from known, suspected or appenent adverse effects).

Eye protection Chemical splash goggles in compliance with OSHA regulations are advised, however, OSHA regulations also permit office type safety glasses. Consult your safety representative.

Wear resistant gloves (consult your wear impervious clothing and boots ult your safety equipment supplier). To prevent repeated or prolonged skin contact,

## Respiratory protection

Skin and body protection

If workplace exposure limit(s) of product or any component is exceeded (see exposure guide lines) a NIOSHapproved air supplied respirator is advised in absence of proper environmental control. OSHA regulations also permit other NIOSH respirators (negative pressure type) under specified conditions (see your industrial hygienist). Engineering or administrative controls should be implemented to reduce exposure.

## Section 9: Physical and Chemical Properties

Physical State: Liquid Odor: Characteristic Vapor Pressure: No Data Available Evaporation Rate: No Data Available 
 Europhate
 Freezing/Metting Point: <18 deg C</th>

 Auto ignition Temperature: 400 deg C (752.00 deg F)
 Freezing/Metting Point: <18 deg C</td>

 Decomposition Temperature: 290 deg C
 Freezing/Metting Point: <18 deg C</td>

 Solubility: Miscible in water.
 Specific Gravity/Density: 1.3 - 1.2

Appearance: Amber / Yellow Color pH: Not available. Vapor Density: 3.17 (H2O=1) Viscosity: No Data Available

NFPA Rating: (estimated) Health: 1; Flammability: 1; Reactivity: 0



## SAFETY DATA SHEET

Section 10: Stability and Reactivity

Chemical Stability

Conditions to Avoid Incompatible materials, ignition sources, excess heat.

Incompatibilities with Other Materials Avoid contact with: Strong oxidizing agents

Hazardous Decomposition Products

Acrolein, aldehvdes, carbon dioxide and carbon monoxide.

Hazardous Polymerization Will not occur

Thermal decomposition No data

## Section 11: Toxicological Information

RTECS#: CAS# 56-81-5: MA8050000

LD50/LC50: CAS# 56-81-5: Draize test, rabbit, eye: 126 mg Mild, Draize test, rabbit, eye. 500 mg/24H Mild; Draize test, rabbit, skin: 500 mg/24H Mild; Inhalation, rat. LC50 = >570 mg/m3/1H; Oral, mouse: LD50 = 409 mg/kg; Oral, rabbit. LD50 = 27 gm/kg; Oral, rat. LD50 = 12600 mg/kg; Skin, rabbit. LD50 = >10 gm/kg;

Carcinogenicity: CAS# 56-81-5: Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA

Epidemiology: No information available

Teratogenicity: No information available

Reproductive Effects: No information available

Neurotoxicity: No information available

Mutagenicity: No information available.

Other Studies: No data available

Revised Nov 2016

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## **SAFETY DATA SHEET**

Note

Dangerous goods descriptions (if indicated above) may not reflect quantity, end-use or region-specific exceptions that can be applied. Consult shipping documents for descriptions that are specific to the shipment.

Section 15: Regulatory Information (non-mandatory)

US FEDERAL TSCA CAS# 56-81-5 is listed on the TSCA inventory. Health & Safety Reporting List None of the chemicals are on the Health & Safety Reporting List. Chemical Test Rules None of the chemicals in this product are under a Chemical Test Rule. Section 12b None of the chemicals in this material have a SNUR under TSCA. Spanforant New Use Rule. Section 12b None of the chemicals in this material have a SNUR under TSCA. Spanforant New Use Rule. Section 12b None of the chemicals in this material have a SNUR under TSCA. Spanforant New Use Rule. Section 12b None of the chemicals in this material have a SNUR under TSCA. Spanforant New Use Rule XRAR Codee CAS # 56-81-5 Chine. Section 302 (TRO) None of the chemicals in this product are to contain any Class I Ozone depitors. This material does no contain any hazardous air pollutaris. This material does not contain any Class I Ozone depitors. This material does not contain any no Class 2 Ozone depitors. Clean Water Act: None of the chemicals in this product are listed as Finzardous. Substances under the CVA. None of the chemicals in this product are listed as Pinorly Pollutaris under the CWA. None of the chemicals in this product are listed. Sections No. Section 303, Rice New Society and New Society Chemicals and Regulations. Ethics Usorgean Labeling in Accordance with EC Directives Hazard Symbols: Not available. Risk Phrases: Safety Phrases: WGR (Water Danger/Protection) CAS# 56-81-5, Societ 56-81-5, Societ Chemicals and DSL LL CAS# 56-81-5, is not listed on Canada's Smetch Sciet Science Sciet Scien Siste Scien 56-81-6, CeL-AUSTRALA TWA 10 mgm3 OEL-HEN ETHEN EDSIGNER UNING NONE ONE NON Available. Risk Phrases: Safety Phrases: WGR 100 mgm3 OEL-HEN ETHERTANDS: TWA 10 mgm3 OEL-INITES CAS 56-81-5, Societ 56-0, CeL-AUSTRALA TWA 10 mgm3 OEL-HEN ETHERTANDS: TWA 10 mgm3 OEL-INITES ANSDOM: TWA 10 mgm3 OEL IN BULGARIA, COLOM BIA, JORDAN, KOREA check ACGIT LV OEL IN NEW ZEALAND, SINGAPORE, VIE TNAM check ACGI TLV

California Prop. 65 This product does not contain any chemicals known to State of California to cause cancer, birth, or any other reproductive defects.

none

## SARA Hazard Classification Acute Health Hazard

## SARA 313 Component(s)

Reportable quantity - Components GLYCERINE 56-81-5

## Health Elar mability Paactivity Other

nearth Fiamm	lability Reactivity Of	ICI		
	Health	Flammability	Reactivity	Other
HMIS	1	1	0	
NFPA	1	1	0	
			~	



## **SAFETY DATA SHEET**

Section 12: Ecological Information (non-mandatory)

Aquatic toxicity

No data

Acute and Prolonged Toxicity to Fish

Acute Toxicity to Aquatic Invertebrates

No data

Environmental fate and pathways No data

## Section 13: Disposal Considerations (non-mandatory)

Description of Waste Residues Long-term storage may result in decomposition of the product.

Safe Handling of Wastes Handle in accordance with applicable local, state, and federal regulations. Use personal protection measures as required,

Disposal of Wastes / Methods of Disposal The user is responsible for determining if any discarded material is a hazardous waste (40 CFR 262.11). Dispose of in acc with federal state and local requilations.

Methods of Contaminated Packaging Disposal Empty containers should be completely dramed and then discarded or recycled. If possible. Do not cut, drill, grind or weld on empty containers since explosive residues may be present. Dispose of in accordance with federal, state and local regulations.

DOT (49 CFR 172.101):	
UN Proper Shipping Name:	Not Regulated
UN/Identification No:	Not applicable
Transport Hazard Class(es):	Not applicable
Packing Group:	Not applicable
TDG (Canada):	
UN Proper Shipping Name:	Not Regulated
UN/Identification No:	Not applicable
Transport Hazard Class(es):	Not applicable
Packing Group:	Not applicable

Revised Nov 2016



# **SAFETY DATA SHEET**

## Section 16: Other Information

National Fire Protection Association (NFPA) Ratings



## Disclaimer:

Disclaimer: Premier Chemicals & Services ("Premier") expressly disclaims all express or implied warranties of merchantability and fitness for a particular purpose, with respect to the product or information provided herein. All information appearing herein is based upon data obtained from the manufacturer and/or recognized technical sources. While the information is believed to be accurate, Premier makes no representations as to its accuracy or sufficiency. Conditions of use are beyond Premier's control, and, therefore, users are responsible to verify this data under their own operating conditions to determine whether the product is suitable for their particular purposes, and they assume all risks of their use, handling, and disposal of the product, but the ublication or use of, or reliance upon, information contained herein. This information relates only to the product designated herein, and does not relate to its use in combination with any other material or in any other process.

## SAFETY DATA SHEET KOCH.

KOCH METHANOL, LLI	С	
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1. Identification		
Product identifier	Methanol	
Other means of identification Product code	KMe CH3OH US EN	
Recommended use	Industrial feedstock.	
Recommended restrictions	Use in accordance with supplier's recommend	ations.
Manufacturer/Importer/Supplier/		
Company name	Koch Methanol LLC	
	P.O. Box 2219, Wichita, KS 67201-2219	
	316-828-7672	
	kochmsds@kochind.com	
Emergency	For Chemical Emergency	
	Call CHEMTREC day or night	
	1.800.424.9300	
	Mexico - 1.800.681.9531	
	Outside USA/Canada	
	1.703.527.3887	
	(collect calls accepted)	
2. Hazard(s) identification		
Physical hazards	Flammable liquids	Category 2
Health hazards	Acute toxicity, oral	Category 3
	Acute toxicity, dermal	Category 3
	Acute toxicity, inhalation	Category 3
	Specific target organ toxicity, single exposure	Category 1 (central nervous system, optic nerve)
OSHA defined hazards	Not classified.	
Label elements		
Signal word	Danger	
Hazard statement	Highly flammable liquid and vapor. Toxic if swa Causes damage to organs (central nervous sy	allowed. Toxic in contact with skin. Toxic if inhaled. /stem, optic nerve).
Precautionary statement		
Prevention	closed. Ground/bond container and receiving electrical/ventilating/lighting equipment. Use or measures against static discharge. Do not bre	nly non-sparking tools. Take precautionary athe mist/vapors. Wash thoroughly after handling. oduct. Use only outdoors or in a well-ventilated area.
Response	immediately all contaminated clothing. Rinse s	/doctor. Rinse mouth. If on skin (or hair): Take off skin with water/shower. If inhaled: Remove person g. Call a poison center/doctor. Take off immediately suse. In case of fire: Use appropriate media to
Storage	Store in a well-ventilated place. Keep contained	• • • •
Disposal	Dispass of contents/container in accordance u	with local/ragional/national/intermational regulations

Disposal Dispose of contents/container in accordance with local/regional/national/international regulations SDS US 1 / 9 Meth Methanol 956702 Version #: 01 Revision date: - Issue date: 21-December-2020

## 6. Accidental release measures

6. Accidental release mea	sures	
Personal precautions, protective equipment and emergency procedures Methods and materials for containment and cleaning up	Keep unrecessary personnel away. Keep people away from and upwind of spill/teak. Eliminate all ignition sources (no smoking, Inares, sparks, or flames in immediate area). Wear appropriate protective equipment and clothing during clean-up. Do not breathe misi/vapors. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Use appropriate containment to avoid environmental containniaton. Transfer by mechanical means such as vacuum truck to a salwage tank or other suitable container for recovery or safe disposal. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area), Keep combustibles (wood, paper, ou, etc.) away from spilled material. Take precautionary measures against static discharge. Use only non-sparking tools. This product is miscible in water.	
	Large Spills: Stop the flow of material, if this is wi possible. Use a non-combustible material like ver and place into a container for later disposal. Follo	rmiculite, sand or earth to soak up the product
		n-combustible material and transfer to containers al (e.g. cloth, fleece). Clean surface thoroughly to
	Never return spills to original containers for re-us	e. For waste disposal, see section 13 of the SDS.
Environmental precautions	Avoid discharge into drains, water courses or one avoid environmental contamination.	to the ground. Use appropriate containment to
7. Handling and storage		
Precautions for safe handling Do not handle, store or open near an open flame, sources of heat or sources of junition. material from direct sunjkht. Explosion-proof general and local exhaust ventilation. Mini risks from flammable and combustible materials (including combustible dust and static accumulating liquids) of dangerous reactions with incompatible materials. Handling ope can promote accumulation of static charges include but are not limited to rimking. Iften measures against static discharges. All equipment used when handling the product mus grounded. Use non-sparking toles and explosion-proof equipment to tot base or swallow. Avoid contact with reys, skin, and colmainer fli apersonia protective equipment. Wash hands thoroughly alter handling. Wash contamina dothing before reuse. Observe good industrial hygiene practices. For additional information on equipment bonding and grounding, refer to the Canadian F Code in Canada, (CSA C22.1), or the American Pertoleum Institut (AP) Recommende 2003. "Protection Aspaciation (NFPA) 77. "Recommended Practice on Static Liebricity" of Fire Protection Association (NFPA) 77. "Recommended Practice on Static Liebricity" of Fire Protection Association (NFPA) 77. "Recommended Practice on Static Liebricity" of Fire Protection Association (NFPA) 77. "Recommended Practice on Static Liebricity" of Fire Protection Association (NFPA) 77. "Recommended Practice on Static Liebricity" of Fire Protection Association (NFPA) 77. "Recommended Practice on Static Liebricity" of Fire Protection Association (NFPA) 77. "Recommended Practice on Static Liebricity" of Fire Protection Association (NFPA) 77. "Recommended Practice on Static Liebricity" of Fire Protection Association (NFPA) 70. "National Electricity" of Fire Protection Association (NFPA) 70."		
Conditions for safe storage, including any incompatibilities	Store locked up. Keep away from heat, sparks ar build-up by using common bonding and groundin spark promoters. Ground/bond container and equ remove static electricity. Store in a cool, dry plac container. Store in a well-ventilated place. Keep j from incompatible materials (see Section 10 of th	g techniques. Eliminate sources of ignition. Avoid uipment. These alone may be insufficient to e out of direct sunlight. Store in tightly closed in an area equipped with sprinklers. Store away
8. Exposure controls/pers	onal protection	
Occupational exposure limits	•	
US. OSHA Table Z-1 Limits Material	for Air Contaminants (29 CFR 1910.1000) Type	Value
Methanol	PEL	260 mg/m3
		200 ppm
Components	Туре	Value
Methanol (CAS 67-56-1)	PEL	260 mg/m3
		200 ppm

Hazard(s) not otherwise classified (HNOC)	grounded equipment. Sparks may ignite liquid		
pplemental information None.			
3. Composition/informatio	n on ingredients		
Substances			
Chemical name	Common name and synonyms	CAS number	%
Methanol		67-56-1	> 99
Composition comments	All concentrations are in percent by weight ur percent by volume. This Safety Data Sheet is not a guarantee of on specified sales orders, customer invoices, supplier.	product specification or NPK	value(s). NPK conten
4. First-aid measures			
Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Call a poison center or doctor/physician.		
Skin contact	proper respiratory medical device. Call a possin center of occorphysican. Take off immediately all contaminated clothing. Rines skin with water/shower. Get medical advice/attention if you feel unwell. Get medical attention if irritation develops and persists. Wash contaminated clothing before reuse.		
Eye contact	Immediately flush eyes with plenty of water for present and easy to do. Continue rinsing. Get		
Ingestion	Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting without advice from poison control center. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Do not use mouthconduct method if vicim ingested the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.		
Most important symptoms/effects, acute and delayed	Narcosis. Headache. Dizziness. Nausea, vomiting. Behavioral changes. Decrease in motor functions. Direct contact with eyes may cause temporary irritation.		
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Thermal burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim warm. Keep victim under observation. Symptoms may be delayed.		
General information	Take off immediately all contaminated clothing. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before reuse.		
5. Fire-fighting measures			
Suitable extinguishing media	Alcohol resistant foam. Carbon dioxide (CO2) may be used for small fires only.	). Dry chemical powder, carbo	n dioxide, sand or ea
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as th	is will spread the fire.	
Specific hazards arising from the chemical	Vapors may form explosive mixtures with air. Vapors may travel considerable distance to a source of ignition and flash back. This product is a poor conductor of electricity and can become construction of the source of the so		
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full p	rotective clothing must be wo	m in case of fire.
Fire fighting equipment/instructions	In case of fire and/or explosion do not breather so without risk.	e fumes. Move containers fror	n fire area if you can
Specific methods	Use standard firefighting procedures and con	sider the hazards of other inv	olved materials.
General fire hazards	Highly flammable liquid and vapor.		

Static accumulating flammable liquid can become electrostatically charged even in bonded and

Methanol 956702 Version #: 01 Revision date: - Issue date: 21-December-2020

Material	Туре	Value	
Methanol	STEL	250 ppm	
	TWA	200 ppm	
Components	Туре	Value	
Methanol (CAS 67-56-1)	STEL	250 ppm	
	TWA	200 ppm	
US. NIOSH: Pocket Guide to Che	mical Hazards		
Material	Туре	Value	
Methanol	STEL	325 mg/m3	
		250 ppm	
	TWA	260 mg/m3	
		200 ppm	
Components	Туре	Value	
Methanol (CAS 67-56-1)	STEL	325 mg/m3	
		250 ppm	
	TWA	260 mg/m3	
	IVVA	200 119/113	

## Biological limit values

Hazard(s) not otherwise

ACGIH Biological Expos	ure Indices			
Material	Value	Determinant	Specimen	Sampling Time
Methanol	15 mg/l	Methanol	Urine	*
Components	Value	Determinant	Specimen	Sampling Time
Methanol (CAS 67-56-1)	15 mg/l	Methanol	Urine	*
* - For sampling details, pl	ease see the sour	ce document.		
osure guidelines				
US - California OELs: Sk	in designation			
Methanol (CAS 67-56	i-1)	Can be	e absorbed throu	igh the skin.
US - Minnesota Haz Sub	s: Skin designati	on applies		
Methanol (CAS 67-56	i-1)	Skin de	esignation applie	es.
US - Tennessee OELs: S	kin designation			
Methanol (CAS 67-56	i-1)	Can be	e absorbed throu	igh the skin.
US ACGIH Threshold Lin	nit Values: Skin o	designation		
Methanol (CAS 67-56	i-1)	Dange	r of cutaneous a	bsorption
US. NIOSH: Pocket Guid	e to Chemical Ha	zards		
Methanol (CAS 67-56	i-1)	Can be	e absorbed throu	igh the skin.

Methanol (CAS 67 Appropriate engineering controls Can be assored imrough in the skin. Explosion-proof general and local exhaust ventilation. Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels bebure recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station and askety shower.

# Individual protection measures, such as personal protective equipment Eye/face protection Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection Wear appropriate chemical resistant gloves. Butyl rubber gloves are recommended. Skin protection Other Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Respiratory protection Chemical respirator with organic vapor cartridge and full facepiece.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

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General hygiene	When using do not smoke. Keep away from food and drink. Always observe good personal	44 Taxiaalaniaalinfarma	tion.
considerations	hygiene measures, such as washing after handling the material and before eating, drinking, and/or	11. Toxicological informa	
	smoking. Routinely wash work clothing and protective equipment to remove contaminants.	Information on likely routes of	•
9. Physical and chemical		Inhalation	Toxic if inhaled. May cause damage to organs by inhalation. Toxic in contact with skin.
Appearance	Colorless liquid.	Skin contact	
Physical state	Liquid.	Eye contact	Direct contact with eyes may cause temporary irritation.
Form	Liquid.	Ingestion	Toxic if swallowed.
Color	Colorless.	Symptoms related to the physical, chemical and	Narcosis. Headache. Dizziness. Nausea, vomiting. Behavioral changes. Decrease in motor functions
Odor	Alcoholic.	toxicological characteristics	functions.
Odor threshold	2000 ppm	Information on toxicological ef	acts
pH	Not available.	Acute toxicity	Toxic if inhaled. Toxic in contact with skin. Toxic if swallowed. Even small amounts (30-250 ml
Melting point/freezing point	-144.4 °F (-98 °C) estimated 148.1 °F (64.5 °C) estimated	,	methanol) may be fatal. Symptoms are stomach ache, nausea, vomiting, dullness, visual disorder
Initial boiling point and boiling range	146.1 F (64.5 C) esumated		and blindness.
Flash point	51.8 °F (11.0 °C) Tag Closed Cup	Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation.
Evaporation rate	2.1 (butyl acetate = 1)	Serious eye damage/eye irritation	Direct contact with eyes may cause temporary irritation.
Flammability (solid, gas)	Not applicable.	Respiratory or skin sensitizatio	n
Upper/lower flammability or exp	losive limits	Respiratory sensitization	Not a respiratory sensitizer.
Flammability limit - lower	Not determined	Skin sensitization	This product is not expected to cause skin sensitization.
(%) Flammability limit - upper	Not determined	Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
(%)		Carcinogenicity	Not classifiable as to carcinogenicity to humans.
Vapor pressure	Not determined	IARC Monographs. Overall	Evaluation of Carcinogenicity
Vapor density	1.1 (air=1)	Not listed.	
Relative density	Not available.	NTP Report on Carcinogen	S
Solubility(ies)		Not listed.	od Substances (29 CFR 1910.1001-1053)
Solubility (water)	Not determined	Not listed.	ou Substances (29 CFR 1910.1001-1055)
Partition coefficient (n-octanol/water)	-0.77 estimated	Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Auto-ignition temperature	725 °F (385 °C)	Specific target organ toxicity -	Causes damage to organs (central nervous system, optic nerve).
Decomposition temperature	Not available.	single exposure	
Viscosity	Not available.	Specific target organ toxicity - repeated exposure	Not classified.
Other information		Aspiration hazard	Not an aspiration hazard.
Density	0.79 g/cm <sup>3</sup>	Chronic effects	
Explosive properties	Not explosive.	Chronic enects	Prolonged inhalation may be harmful.
Flash point class	Flammable IB	12. Ecological informatio	1
Molecular formula	СНЗОН	Ecotoxicity	The product is not classified as environmentally hazardous. However, this does not exclude the
Molecular weight	32.04 g/mol		possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Oxidizing properties	Not oxidizing.	Persistence and degradability Bioaccumulative potential	No data is available on the degradability of this substance. Log Pow: < 1. Not expected to bioaccumulate on the basis of the low octanol-water partition
Surface tension	22.61 mN/m (68 °F (20 °C))	Bioaccumulative potential	coefficient.
10. Stability and reactivity	1	Partition coefficient n-octa	
Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.	Methanol (CAS 67-56-1)	-0.77
Chemical stability	Material is stable under normal conditions.	Mobility in soil	The product is insoluble in water. Expected to be highly mobile in soil.
Possibility of hazardous reactions	Hazardous polymerization does not occur.	Other adverse effects	The product contains a substance which has a photochemical ozone creation potential.
Conditions to avoid	Avoid heat, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Contact with incompatible materials.	13. Disposal consideration Disposal instructions	ns Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Incinerate the
Incompatible materials	Strong bases. Strong oxidizing agents. Metals.	.,	material under controlled conditions in an approved incinerator. Do not incinerate sealed
Hazardous decomposition	Carbon monoxide. Formaldehyde.		containers. If discarded, this product is considered a RCRA ignitable waste, D001. Dispose of contents/container in accordance with local/regional/national/international regulations.
products		Local disposal regulations	Dispose in accordance with all applicable regulations.
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addroz veraidit#. 01 Revision u	ake 18906 dake. 2 1-December-2020 373	330102 VeraidIT#. 01 REVISION	ate 18806 date. 21-December-2020 07.5

	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.
14. Transport information	
DOT	
UN number	UN1230
UN proper shipping name	Methanol
Transport hazard class(es)	
Class	3
	6.1
	3
	II
	Read safety instructions, SDS and emergency procedures before handling.
	IB2, T7, TP2
	150
	202
	242
DOT BULK	
BULK	
	UN1230
	Methanol
Transport hazard class(es)	
	3
	6.1
	3
	II
	Read safety instructions, SDS and emergency procedures before handling.
	IB2, T7, TP2
	150
	202 242
Packaging bulk IATA	242
	UN1230
	UN1230 Methanol
UN proper shipping name Transport hazard class(es)	wethanoi
	3
	5 6.1
	3. 6.1
	3, 0.1
	No.
	3L
	Read safety instructions, SDS and emergency procedures before handling.
IMDG	······································
UN number	UN1230
	METHANOL
Transport hazard class(es)	
	3
	6.1
	3, 6.1
	-, II
Environmental hazards	
	No.
	F-E, S-D
	Read safety instructions, SDS and emergency procedures before handling.

## Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code. This product is listed in the IBC Code. 15. Regulatory information US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D) Not regulated. CERCLA Hazardous Substance List (40 CFR 302.4) Methanol (CAS 67-56-1) SARA 304 Emergency release notification Listed. Not regulated. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053) Not listed. Toxic Substances Control Act (TSCA) This substance is on the TSCA 8(b) inventory and is designated "active" Superfund Amendments and Reauthorization Act of 1986 (SARA) SARA 302 Extremely hazardous substance Not listed. Not listed. SARA 311/312 Hazardous Chemical Classified hazard categories Flammable (gases, aerosols, liquids, or solids) Acute toxicity (any route of exposure) Specific target organ toxicity (single or repeated exposure) Hazard not otherwise classified (HNOC) SARA 313 (TRI reporting) Chemical name Methanol CAS number 67-56-1 % by wt. Other federal regulations Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List Methanol (CAS 67-56-1) Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130) Not regulated. Safe Drinking Water Act Listed. (SDWA) US state regulations US. Massachusetts RTK - Substance List Methanol (CAS 67-56-1) US. New Jersey Worker and Community Right-to-Know Act Methanol (CAS 67-56-1) US. Pennsylvania Worker and Community Right-to-Know Law Methanol (CAS 67-56-1) US. Rhode Island RTK Methanol (CAS 67-56-1) California Proposition 65 WARNING: This product can expose you to Methanol, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov. California Proposition 65 - CRT: Listed date/Developmental toxin Methanol (CAS 67-56-1) Listed data/Developmental toXm USL california. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a) Methanol (CAS 67-56-1)

Country(s) or region	Inventory name	On inventory (yes/no)
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	Yes
United States & Puerto Ric	o Toxic Substances Control Act (TSCA) Inventory	Yes
	complies with the inventory requirements administered by the governing countryl ore components of the product are not listed or exempt from listing on the invento	
6. Other information, in	ncluding date of preparation or last revision	
ssue date	21-December-2020	
levision date	-	
ersion #	01	
IMIS® ratings	Health: 3* Flammability: 3 Physical hazard: 0	
IFPA ratings		
ist of abbreviations	EC50: Effective Concentration, 50%. LC50: Lethal Concentration, 50%. LD50: Lethal Does 50%. PEL: Permissible Exposure Limit. TWA: Time Weighted Average.	
eferences	IARC Monographs. Overall Evaluation of Carcinogenicity	
lisclaimer	NOTCE: The information contained in this document is based on to as of the preparation date of this Safety Data Sheet (SDS) and was applicable Government regulation(s). This SDS may not be used as sheet of manufacture or seller, and no warranity or representation, as to the accuracy or comprehensiveness of the above data and saf authorization given or implied to practice any patented invention with information may be needed to evaluate other uses of the product, in combination with any materials or in any processes other than those information provided about any hazards that may be associated with suggest that use of the product in a given application will necessarily to workers or the general public. Purchasers and users of the product determining that this product is suitable for the intended use and agn storage and handing of the product robudt. Purchasers and storage and handing on the product of the product dyncibal contractors and customers who will use the product dyncibal SDS.	prepared pursuant to a commercial specification xpressed or implied, is made ety information, nor is any tout a license. Additional Juding use of the product in specifically referenced. the product is not meant to result in any exposure or risk t are responsible for Nication. No responsibility can to adhere to recommended users assume all risk of use, deral, state and local laws and local sources.

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Aqua Ammonia (5-19.9%)		-		
Section 2. Haz	ards identifica	ion		
Hazards not otherwise classified	: None known.			
Section 3. Cor	nposition/infor	mation on in	gredients	
Substance/mixture	: Mixture			
Other means of identification	: Aqua Ammoni	a, Ammonium Hydrox	kide	
Product code	: 001196			
Ingredient name			%	CAS number
Aqua Ammonia WATER ammonia			100 80.1 - 95 5 - 19.9	1336-21-6 7732-18-5 7664-41-7
There are no additiona	n as a range is to protect I ingredients present w able, are classified as ha	hich, within the curr	rent knowledge of the	supplier and in the d hence require reporting
	e limits, if available, are	listed in Section 8.		
Section 4. Firs	t aid measures			
Description of necess	ary first aid measures			
Eye contact	eyes with plen remove any co	y of water, occasiona	ally lifting the upper and ue to rinse for at least 1	physician. Immediately flush lower eyelids. Check for and 0 minutes. Chemical burns
Inhalation	fresh air and k fumes are still breathing appa occurs, provid dangerous to t unconscious, j an open airwa inhalation of d	eep at rest in a positi present, the rescuer iratus. If not breathin a artificial respiration he person providing a lace in recovery posi /. Loosen tight clothi ccomposition product	on comfortable for breat should wear an appropri g, if breathing is irregul, or oxygen by trained pe aid to give mouth-to-mo titon and get medical att ng such as a collar, tie,	uth resuscitation. If tention immediately. Maintai belt or waistband. In case o ay be delayed. The exposed
Skin contact	contaminated Wash contami Continue to rir	skin with plenty of wa nated clothing thorou se for at least 10 min	ghly with water before r	ated clothing and shoes. emoving it, or wear gloves. must be treated promptly by
Ingestion	with water. Re position comfe person is cons feels sick as v so by medical does not enter Never give any recovery posit	move dentures if any rtable for breathing. cious, give small qua omiting may be dang personnel. If vomitin the lungs. Chemical thing by mouth to an on and get medical a	/. Remove victim to free If material has been sw intities of water to drink. erous. Do not induce vo g occurs, the head shou burns must be treated unconscious person.	physician. Wash out mouth sh air and keep at rest in a allowed and the exposed Stop if the exposed person omiting unless directed to do Jid be kept low so that vomit promptly by a physician. f unconscious, place in laintain an open airway.

## Most important symptoms/effects, acute and delayed

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Skin contact	: Causes s	evere burns.			
Inhalation	: May caus	e respiratory irritation.			
Eye contact	: No know	n significant effects or critic	al hazards.		
Potential acute health eff					

# SAFETY DATA SHEET



Aqua Ammonia (5-19.9%)

GHS product identifier	: Aqua Ammonia (5-19.9%)
Other means of identification	: Aqua Ammonia, Ammonium Hydroxide
Product type	: Liquid.
Product use	: Synthetic/Analytical chemistry.
Synonym SDS #	: Aqua Ammonia, Ammonium Hydroxide : 001196
Supplier's details	: Airgas USA, LLC and Its affiliates 259 North Radnor-Chester Road Suite 100 Radnor, PA 10987-5283 1-610-687-5253
24-hour telephone	: 1-866-734-3438
Section 2. Hazard	Is identification
OSHA/HCS status	: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Classification of the substance or mixture	: SKIN CORROSION - Category 1B SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 AQUATIC HAZARD (ACUTE) - Category 1
GHS label elements Hazard pictograms	
	: Danger
Hazard pictograms	: Danger : May displace oxygen and cause rapid suffocation. Causes severe skin burns and eye damage. May cause respiratory irritation. Very toxic to aquatic life.
Hazard pictograms Signal word	: May displace oxygen and cause rapid suffocation. Causes severe skin burns and eye damage. May cause respiratory irritation.
Signal word Hazard statements Precautionary statements General	May displace oxygen and cause rapid suffocation. Causes severe skin burns and eye damage. May cause respiratory irritation. Very toxic to aquatic life.      Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand.
Hazard pictograms Signal word Hazard statements Precautionary statements	May displace oxygen and cause rapid suffocation. Causes severe skin burns and eye damage. May cause respiratory imitation. Very toxic to aquatic life. Read label before use. Keep out of reach of children. If medical advice is needed,
Hazard pictograms Signal word Hazard statements <u>Precautionary statements</u> General	May displace oxygen and cause rapid suffocation. Causes severe skin burns and eye damage. May cause respiratory irritation. Very toxic to aquatic life.     Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand.     Wear protective gloves. Wear eye or face protection. Wear protective clothing. Use only outdors or in a well-ventilated area. Avoid release to the environment. Avoid
Hazard pictograms Signal word Hazard statements Precautionary statements General Prevention	May displace oxygen and cause rapid suffocation. Causes severe skin burns and eye damage. May cause respiratory irritation. Very toxic to aquatic life.     Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand.     Wear protective gloves. Wear eye or face protection. Wear protective clothing. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Avoid breathing vapor. Wash hands thoroughly after handling.     Collect spillage. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or physician. IF SWALLOWED: Immediately call a POISON CENTER or physician. IF SWALLOWED: Immediately call a POISON CENTER or physician. Imse mouth. Do NOT Induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rins skin with water or shower. Wash contaminated cothous you have for severa minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Aqua Ammonia (5-19.9%)			
Section 4. First ai	d measures		
Frostbite	: Try to warm up the frozen tissues and seek medical attention.		
Ingestion	: No known significant effects or critical hazards.		
Over-exposure signs/symp	utoms		
Eye contact	: Adverse symptoms may include the following:, pain, watering, redness		
Inhalation	: Adverse symptoms may include the following:, respiratory tract irritation, coughing		
Skin contact	: Adverse symptoms may include the following:, pain or irritation, redness, blistering may occur		
Ingestion	: Adverse symptoms may include the following:, stomach pains		
Indication of immediate med	lical attention and special treatment needed, if necessary		
Notes to physician	: In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.		
Specific treatments	: No specific treatment.		
Protection of first-aiders	No action shall be taken involving any personal risk or without suitable training. If I is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.		
See toxicological information	n (Section 11)		
Section 5. Fire-fig	hting measures		
Extinguishing media			
Suitable extinguishing media	: Use an extinguishing agent suitable for the surrounding fire.		
Unsuitable extinguishing media	None known.		
Specific hazards arising from the chemical	: In a fire or if heated, a pressure increase will occur and the container may burst. This material is very toxic to aquatic life. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.		
Hazardous thermal decomposition products	: Decomposition products may include the following materials: nitrogen oxides		
Special protective actions for fire-fighters	<ul> <li>Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.</li> </ul>		
Special protective equipment for fire-fighters	<ul> <li>Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.</li> </ul>		
Section 6. Accide	ntal release measures		
Personal precautions, prote	ctive equipment and emergency procedures		
For non-emergency personnel	: No action shall be taken involving any personal risk or without suitable training, Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Do not breathe vapor or mist.		
	Provide adequate vertilation. Wear appropriate respirator when vertilation is inadequate. Put on appropriate personal protective equipment.		
For emergency responders	Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.		
For emergency responders	Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment. s I specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-		

Small spill		Stop leak if without risk. Move containers from spill area. Dilute with water and mop up
onian apin		Grep Function interaction insert insert contraintics of an interaction of the interaction
Large spill	:	Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment jpant or proceed as follows. Contain and collect spillage with non-combustible, absorbent materiale g., sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.
Section 7. Handlin		and storage
Precautions for safe handling	ng	
Protective measures	:	Put on appropriate personal protective equipment (see Section 8). Do not get in eyes or on skin or clothing. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Avoid release to the environment. Do not ingest. Empty containers retain product residue and can be hazardous. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Do not reuse container. Do not breathe vapor or mist.
Advice on general occupational hygiene	:	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygien measures.
Conditions for safe storage including any incompatibilities	, :	Store in accordance with local regulations. Store in original container protected from direct sumlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and ket unright to prevent leakage. Do not store in unlabeled containers, the sealed set unright or prevent leakage.

# Section 8. Exposure controls/personal protection

Control parameters

Ingredient name			Exposure limits
Aqua Ammonia WATER ammonia			None. None. California PEL for Chemical Contaminant Table AC-1) (United States). PEL: 25 ppm 8 hours. STEL: 35 ppm 16 minutes. ACGIH TUV (United States, 3/2017). TWA: 75 ppm 8 hours. STEL: 24 mg/m <sup>1</sup> 16 minutes. STEL: 24 mg/m <sup>1</sup> 16 minutes. STEL: 24 mg/m <sup>1</sup> 16 minutes. STEL: 27 mg/m <sup>1</sup> 16 minutes. TWA: 25 ppm 10 hours.
ate of issue/Date of revision :	2/15/2018	Date of previous issue	: 2/15/2018 Version : 0.1

Section 9. Physica	I and chemical properties
Evaporation rate	: Not available.
Flammability (solid, gas)	: Extremely flammable in the presence of the following materials or conditions: Oxidizing
Lower and upper explosive (flammable) limits	: Lower: 16% Upper: 25%
Vapor pressure	: 3-10 PSI @ 16 °C
Vapor density	: Vapor density 0.6 (Air = 1) (ammonia)
Specific Volume (ft 3/lb)	: 20.79
Gas Density (lb/ft 3)	: 0.0481
Relative density	: 0.6
Solubility	: Soluble in water. Soluble in alcohol and ether.
Solubility in water	: Complete 540 g/l
Partition coefficient: n- octanol/water	: Not available.
Auto-ignition temperature	: 651 °C (1,204°F) (ammonia vapor)
Decomposition temperature	: Not available.
Viscosity	: Not available.
Flow time (ISO 2431)	: Not available.
Section 10. Stabili	ty and reactivity
Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: The product is stable.

Possibility of hazardous reactions	:	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	;	No specific data.
Incompatible materials	:	Yellow Metals (brass & copper)
Hazardous decomposition products	;	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Hazardous polymerization : Under normal conditions of storage and use, hazardous polymerization will not occur.

# Section 11. Toxicological information

Result		Species	6	Dose	Э	Exposure
LD50 Oral LC50 Inhalation Gas.		Rat Rat				1 hours
Result	Spec	cies	Score		Exposure	Observation
Eyes - Severe irritant Eyes - Severe irritant			-		Micrograms	-
					milligrams	
	LD50 Oral LC50 Inhalation Gas. Result Eyes - Severe irritant	LDS0 Oral LCS0 Inhalation Gas. Result Spec Eyes - Severe irritant Rabb	LD50 Oral         Rat           LC50 Inhalation Gas.         Rat           Result         Species           Eyes - Severe irritant         Rabbit	Result         Species         Score           Eyes - Severe irritant         Rabbit         -	LD50 Oral         Rat         350 m           LC50 Inhalation Gas.         Rat         7338           Result         Species         Score           Eyes - Severe irritant         Rabbit         -           Eyes - Severe irritant         Rabbit         -	Result         Species         Score         Exposure           Result         Species         250 Mg/kg         250 Mg/kg         338 ppm

Section 6. Expos	ure controls/personal protection
	STEL: 35 ppm 15 minutes. STEL: 27 mg/m 15 minutes. OSHA PEL (United States, 6/2016). TWA: 50 ppm 8 hours. TWA: 35 mg/m*8 hours.
Appropriate engineering controls	: Use only with adequate ventilation. If user operations generate dust, fumes, gas, va or mist, use process enclosures, local exhaust ventilation or other engineering contro to keep worker exposure to airborne contaminants below any recommended or statu limits.
Environmental exposure controls	: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.
Individual protection meas	<u>ires</u>
Hygiene measures	: Wash hands, forearms and face throroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated dothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safe showers are close to the workstation location.
Eye/face protection	Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles ar or face shield. If inhalation hazards exist, a full-face respirator may be required insite
Skin protection	
Hand protection	: Chemical-resistant, impervious gloves complying with an approved standard should worn at all times when handling chemical products if a risk assessment indicates this necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for differe glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
Body protection	: Personal protective equipment for the body should be selected based on the task be performed and the risks involved and should be approved by a specialist before handling this product.
Other skin protection	<ul> <li>Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved b specialist before handling this product.</li> </ul>
Respiratory protection	: Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.
Section 9. Physic	al and chemical properties
Appearance	
Physical state	: Liquid.
Color	: Colorless.
Odor	: Pungent.
Odor threshold	: 5 ppm
pH	Approx. 11.6 for 1 N Sol'n. in water
Melting point	: 22°F (5% solution) to -34°F (19.9% solution)
Boiling point	: Lowest known value: 38°C (100.4°F) (ammonia). Weighted average: 68.21°C (154.8
Critical temperature Flash point	: Not available. : Not available.

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Section 11. Toxic	ological inforn	nation			
Not available.					
Mutagenicity Not available.					
Carcinogenicity Not available.					
Reproductive toxicity Not available.					
Teratogenicity Not available.					
Specific target organ toxic	ity (single exposure)				
Name		Catego	ory	Route of exposure	Target organs
Aqua Ammonia		Catego	iry 3	Not applicable.	Respiratory tract irritation
Specific target organ toxic	ity (repeated exposure	)			1
Not available.					
Aspiration hazard					
Not available.					
Information on the likely routes of exposure	: Not available.				
Potential acute health effect	<u>s</u>				
Eye contact	: No known significat		al hazards.		
Inhalation	: May cause respirat	,			
Skin contact	: Causes severe bur				
Ingestion	: No known significat	nt effects or critic	al hazards.		
Symptoms related to the ph					
Eye contact	: Adverse symptoms	,	0.1		
Inhalation	: Adverse symptoms	,			
Skin contact	: Adverse symptoms occur	may include the	following:, p	ain or irritation, re	edness, blistering may
Ingestion	: Adverse symptoms	may include the	following:, s	tomach pains	
Delayed and immediate effe	cts and also chronic e	ffects from shor	t and long	term exposure	
Short term exposure					
Potential immediate effects	: Not available.				
Potential delayed effects	: Not available.				
Long term exposure Potential immediate	: Not available.				
effects	Net evelleble				
Potential delayed effects Potential chronic health eff Not available.	: Not available.				
General	: No known significa	at offects or critic	al hazarda		
Carcinogenicity	: No known significat				

# Section 11. Toxicological information

No known significant effects or critical hazards No known significant effects or critical hazards No known significant effects or critical hazards No known significant effects or critical hazards

## Numerical measures of toxicity

nia (5-19.9%

Mutagenicity

Teratogenicity Developmental effects

Fertility effects

Acute toxicity estimates Not available.

## Section 12. Ecological information Toxicity Product/ingredient name Species Exposure Result Acute LC50 37 ppm Fresh water Acute EC50 29.2 mg/l Marine water Acute LC50 2080 µg/l Fresh water Acute LC50 0.30 µg/l Fresh water Acute LC50 300 µg/l Fresh water Chronic NOEC 0.204 mg/l Marine water Fish - Gambusia affinis - Adult Algae - Ulva fasciata - Zoea Crustaceans - Gammarus pulex Daphnia - Daphnia magna Fish - Hypophthalmichthys nobilis Fish - Dicentrarchus labrax 96 hours 96 hours 48 hours 48 hours Aqua Ammonia 96 hours 62 days

## Persistence and degradability

## Not available.

Rioacc	nimula	tive no	tontial

Product/ingredient name	LogPow	BCF	Potential
WATER	-1.38	-	low
Mobility in soil			

## Soil/water partition

Di

coefficient (Koc)

Other adverse effects : No known significant effects or critical hazards

: Not available.

## Section 13. Disposal considerations

: 2/15/2018

The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal elgislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to protection of the surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to protection of the surplus and protection and protection and the surplus and protection and protection and the surplus and protection and protection and the surplus and protection and the surplus and protection and the surplus and protection and protec via a icensed waste disposal contractor. Waste should not be disposed of untreated to the sever unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and severs.

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Aqua Ammonia (5-19.9%)
Section 15. Regulatory information
 Clean Air Act Section 602
Class II Substances
 DEA List I Chemicals
(Precursor Chemicals
                                Not listed
 DEA List II Chemicals

    Not listed

 (Fss
        ntial Chemicals
 SARA 302/304
  Composition/information on ingredients
                                                                    SARA 302 TPQ
                                                                                             SARA 304 RQ
   Name
                                                              EHS
                                                                    (lbs)
                                                                                 (gallons)
                                                                                              (lbs)
                                                                                                          (gallons)
                                           5 - 19.9
  ammonia
                                                              Yes.
                                                                    500
                                                                                              100
                                502.5 lbs / 228.1 kg
  SARA 304 RQ
 SARA 311/312
  Classification
                             : Refer to Section 2: Hazards Identification of this SDS for classification of substance
 SARA 313
                               Product name
                                                                                  CAS number
                                                                                  1336-21-6
   Form R - Reporting
                               ammonia
                                                                                                     5 - 19.9
                                ammonia
                                                                                   664-41-7
    requireme
    Supplier notification
                                ammonia
                                                                                  1336-21-6
                                ammonia
                                                                                  7664-41-7
                                                                                                    5 - 19.9
```

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SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations Massachusetts

The following components are listed: AMMONIUM HYDROXIDE; AMMONIUM WATER; AMMONIA; AMMONIA, ANHYDROUS

- The following components are listed: Ammonium hydroxide; Ammonia New York New Jersey The following components are listed: AMMONIUM HYDROXIDE; AMMONIA The following components are listed: AMMONIUM HYDROXIDE; AMMONIA Pennsylvania
- International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.		
Montreal Protocol (Annex Not listed.	es A,	<u>B, C, E)</u>
Stockholm Convention on Not listed.	Per	sistent Organic Pollutants
Rotterdam Convention on Not listed.	Prio	r Informed Consent (PIC)
UNECE Aarhus Protocol of Not listed.	n PC	PS and Heavy Metals
Inventory list		
Australia	1	All components are listed or exempted.
Canada	1	All components are listed or exempted.
China	1	All components are listed or exempted.
Europe	1	All components are listed or exempted.
Japan	- 1	Japan inventory (ENCS): All components are listed or exempted. Japan inventory (ISHL): Not determined.

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Aqua Ammonia (5-19.9	%)				
Section 14.	Transport in	nformation			
	DOT	TDG	Mexico	IMDG	IATA
UN number	UN2672	UN2672	UN2672	UN2672	UN2672
UN proper shipping name	Ammonium Hydroxide or Ammonia solutions	AMMONIA SOLUTION	AMMONIA SOLUTION	AMMONIA SOLUTION	Ammonia solution
Transport hazard class(es)	8 <b>*</b>	8 (1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	8	8 <b>1</b> <b>1</b> <b>1</b> <b>1</b> <b>1</b> <b>1</b> <b>1</b> <b>1</b>	8
Packing group	ш	ш	ш	ш	ш
Environmental hazards	Yes.	Yes.	Yes. The environmentally hazardous substance mark is not required.	Yes.	Yes. The environmentally hazardous substance mark is not required.
product." Additional inform DOT Classificat	ion : This wate provi <u>Repo</u> the p trans	rways in sizes of ≤5 ded the packagings ortable quantity 100 roduct reportable qu portation requirement		, rail, or inland air in visions of §§ 173.24 age sizes shipped in to the RQ (reportabl	non-bulk sizes, and 173.24a. quantities less than le quantity)
TDG Classificat	Good	ds Regulations: 2.40-	the following sections -2.42 (Class 8), 2.7 (I k is not required whe	Marine pollutant mar	k).
IMDG	: The	marine pollutant mar	k is not required whe	n transported in size	s of ≤5 L or ≤5 kg.
IATA		environmentally haza portation regulations	ardous substance ma	rk may appear if req	uired by other
Special precautio	uprig				ntainers that are now what to do in the
Transport in bulk	according : Not a	available.			

Transport in bulk according to Annex II of MARPOL and

## the IBC Code

Section 15. Regul	Section 15. Regulatory information								
U.S. Federal regulations	: TSCA 8(a) CDR Exempt/Partial exemption: Not determined Clean Water Act (CWA) 311: ammonia: ammonia								
		Act (CAA) 112 regulated		ammonia					
Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs)		ACI (CAA) 112 legulated	toxic substances.	amnonia					
Clean Air Act Section 602 Class I Substances	: Not listed								
Date of issue/Date of revision	: 2/15/2018	Date of previous issue	: 2/15/2018	Version :01	9/12				

0	ulatory information
Malaysia	: All components are listed or exempted.
New Zealand	: All components are listed or exempted.
Philippines	: All components are listed or exempted.
Republic of Korea	: All components are listed or exempted.
Taiwan	: All components are listed or exempted.
Thailand	: Not determined.
Turkey	: Not determined.
United States	: All components are listed or exempted.
Viet Nam	: Not determined.

## Section 16. Other information em (U.S.A.)

H	azardous Material Informa	tion	Sy	ste
	Health	1	3	
	Flammability		0	
	Physical hazards		0	
				1

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on SDS or products leaving a facility under 20 CFR 1910-1000, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

National Fire Protection Association (U.S.A.)



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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to Copyright sector, reactionar net Protection Association, during, ym Addado Tinis Warning System is minimediad to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

	Classific	cation		Justification	
SKIN CORROSION - Cate SPECIFIC TARGET ORGA irritation) - Category 3 AQUATIC HAZARD (ACUT	N TOXICITY (SIN	iratory tract	Expert judgment Calculation method Calculation method		
History					
Date of printing	: 2/15/2018				
Date of issue/Date of revision	: 2/15/2018				
Date of previous issue	: 2/15/2018				
Version	: 0.1				
Date of issue/Date of revision	: 2/15/2018	Date of previous issue	: 2/15/2018	Version : 0.1	11/1

ate	of issue/Date	of revision	: 2/15/2018

## Section 16. Other information

Key to abbreviations ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor BCF = Bloconcentration Factor GHS = Globally Harmonized System of Classification and Labelling of Chemicals IATA = Intermational Air Transport Association IBC = Intermediate Bulk Container IBC = Intermediate Bulk Container IMDG = International Maritime Dangerous Goods LogPow = logarithm of the octanol/water partition coefficient MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution) UN = Uhited Nations Not available. Not available

## References Other special considerations Notice to reader

Notice to reader To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.



Safety Data Sheet acc. to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations Revision: October 16, 2019 ar 16 0010

Product identifier	
Trade name: <u>Natural Gas, Dry</u> CAS Number: 68410-63-9	
· Other means of identification: Methane, Petroleum Gas, Meth	yl Hydride, Treated Gas, Process Gas
• Recommended use and restriction on use • Recommended use: Fuel • Restrictions on use: No relevant information available.	
Details of the supplier of the Safety Data Sheet Manufacturer/Supplier: Williams, Inc. One Williams Center Tulsa, OK 74172 USA 855-945-5762 (Toll-Free) ehs@williams.com	
Emergency telephone number: CHEMTREC 1-800-424-9300 (US/Canada) +01 703-527-3887 (International)	

Classification of th	le substance or mixture	
Flam. Gas 1 H2	220 Extremely flammable gas.	
Press. Gas H2	280 Contains gas under pressure; may explode if heated.	
Simple Asphyxiant	May displace oxygen and cause rapid suffocation.	
Label elements GHS label elements The product is classifie Hazard pictograms: GHS02 GHS04	ed and labeled according to the Globally Harmonized System (GHS).	
May displace oxygen a Precautionary statem P210 Keep awa P377 Leaking g P381 Eliminate	der pressure; may explode if heated. and cause rapid suffocation.	



ate of issue/Date of revision

: 2/15/2018

Date of previous issue

: 2/15/2018 Version : 0.1 12/12

Safety Data Sheet acc. to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Reg	Page: 2/10
Printing date: October 16, 2018	Revision: October 16, 2018
Trade name: Natural Gas, Dry	
· Other hazards There are no other hazards not otherwise classified that have	(Cont'd. of page 1) been identified.
3 Composition/information on ingredients	
Chemical characterization: Substances CAS No. Description 68410-63-9 Natural gas	
· Components:	
75-08-1 ethyl mercaptan (if odorized) Acute Tox. 4, H302; /	Acute Tox. 4, H332
Additional information: For the listed ingredient(s), the identity and/or exact percentage(s) are being wi For the wording of the listed Hazard Statements, refer to section 16.	ithheld as a trade secret.
4 First-aid measures	
Description of first aid measures     Arter inhalation:     Supply fresh air.     Supply fresh air.     Frovide oxygen treatment if affected person has difficulty breathing.     If experiencing respiratory symptoms: Call a poison center/doctor.     After skin contact:     In cases of frostbile from liquefied gas or from high-pressure systems, rinse     remove coltand:     Remove contact lenses if worn.     Rinse opened eye for several minutes under running water. If symptoms persis     After skindlowing: Unlikely route of exposure.     Most important symptoms and effects, both acute and delayed:     Dizzines     Coughing     Frosibile from liquefied gas or high-pressure systems.     Disorientation     Danger: May displace oxygen and cause rapid suffocation.     Indication of any immediate medical attention and special treatment need     If necessary oxygen respiration treatment.	it, consult a doctor.
5 Fire-fighting measures	
<ul> <li>Extinguishing media</li> <li>Suitable extinguishing agents: Foam</li> <li>Water fog / haze</li> <li>Gaseous extinguishing agents</li> <li>Carbon dioxide</li> <li>For safety reasons unsuitable extinguishing agents: Water stream.</li> </ul>	(Cont'd. on page 3)

Page: 3/10 Williams Safety Data Sheet acc. to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations Printing date: October 16, 2018 Revision: October 16, 2018 Trade name: Natural Gas, Dry (Cont'd. of page 2) Special hazards arising from the substance or mixture Danger of receptacles bursting because of high vapor pressure if heated. Extremely flammable gas. Advice for firefighters Protective equipment: Wear self-contained respiratory protective device. Wear fully protective suit. Additional information: Eliminate all ignition sources if safe to do so. In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion. Leaking gas fire: Do not extinguish, unless leak can be stopped safely. 6 Accidental release measures Personal precautions, protective equipment and emergency procedures Wear protective equipment. Keep unprotected persons away. Ensure adequate ventilation. Keep away from ignition sources. Take precautionary measures against static discharge. Use only non-sparking tools. Protect from heat. Protect from heat. For large spills, use respiratory protective device against the effects of fumes/dust/aerosol. Environmental precautions No special measures required. Methods and material for containment and cleaning up Allow to evaporate. Reference to other sections See Section 7 for information on safe handling. See Section 8 for information on personal protection equipment. See Section 13 for disposal information. 7 Handling and storage 
 Handling

 Precautions for safe handling: Use enclosed means of conveyance.

 Information about protection against explosions and fires:

 Keep ignition sources away - Do not smoke.

 Protect against electrostatic charges.

 Ground/bond container and receiving equipment.

 Emergency cooling must be available in case of nearby fire.

 Flammable gas-air mixtures may be formed in empty containers/receptacles.
 Conditions for safe storage, including any incompatibilities
 Requirements to be met by storerooms and receptacles:
 Avoid storage near extreme heat, ignition sources or open flame.
 Information about storage in one common storage facility: Store away from oxidizing agents.
 Further information about storage conditions:
 Store in a cool place. Heat will increase pressure and may lead to the receptacle bursting.
 Specific end use(s) No relevant information available.

Williams	Cofety Data Chast	Page: 4/10
illianis.	Safety Data Sheet acc. to OSHA HCS (29CFR 1910.1200) and WHMIS 201	E Bogulations
Printing date: Octob	· /	Revision: October 16, 2018
Printing date. Octob	10, 2018	Revision. October 16, 2018
Trade name: Nat	ural Gas, Dry	
		(Cont'd. of page 3)
8 Exposure c	ontrols/personal protection	
Control para	meters	
Components v	vith limit values that require monitoring at the workp	ace:
68410-63-9 Na	tural gas, dried	
TLV (USA)	refer to App. F in TLVs and BEIs book; NIC-D, EX	
EL (Canada)	Simple asphyxiant, EX	
EV (Canada)	Long-term value: 1,000 ppm	
	revoked as of 01/01/18	
	Long-term value: 1000 ppm	
75-08-1 ethyl r		
PEL (USA)	Ceiling limit value: 25 mg/m <sup>3</sup> , 10 ppm	
REL (USA)	Ceiling limit value: 1.3* mg/m³, 0.5* ppm *15 min	
TLV (USA)	Long-term value: 1.3 mg/m <sup>3</sup> , 0.5 ppm	
EL (Canada)	Long-term value: 0.5 ppm	
EV (Canada)	Long-term value: 1.3 mg/m3, 0.5 ppm	
LMPE (Mexico)	Long-term value: 0.5 ppm	
The usual prec Keep away fror Wash hands be Engineering c Breathing equ Not required ur	tive and hyglenic measures: autionary measures for handling chemicals should be foll n foodstuffs, beverages and feed. fore breaks and at the end of work. ontrols: Provide adequate ventilation. ipment: ider normal conditions of use. ontained respiratory protective device should be used in c	
Protection of I Wear gloves fo Eye protection	r protection against thermal and mechanical hazards acc	ording to OSHA and NIOSH rules.
Safety	glasses	
<ul> <li>Body protection</li> <li>Limitation and</li> </ul>	national guidelines concerning the use of protective even on: Wear appropriate protective clothing. In supervision of exposure into the environment	
	ormation available. ment measures No relevant information available.	
9 Physical an	d chemical properties	
o	a onomour proportioo	(Cont'd. on page 5)
		(. 196-17)



Safety Data Sheet acc. to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations Revision: October 16, 2018

Printing date: October 16, 2018 Trade name: Natural Gas, Dry

<ul> <li>Information on basic physical and cl</li> <li>Appearance:</li> </ul>	nemical properties
Form: Color: Odor:	Gaseous Colorless Normally dodress. Pungent odor observed if mercaptans present. Not determined.
pH-value:	Not determined.
Melting point/Melting range:     Boiling point/Boiling range:	Not determined. Not determined.
· Flash point:	-184 °C (-299.2 °F)
· Flammability (solid, gaseous):	Extremely flammable gas.
· Auto-ignition temperature:	537 °C (998.6 °F)
· Decomposition temperature:	Not determined.
Danger of explosion:	Product is not explosive. However, formation of explosive vapor mixtures are possible.
<ul> <li>Explosion limits Lower: Upper:</li> <li>Oxidizing properties:</li> </ul>	2 Vol % 10 Vol % Not determined.
· Vapor pressure at 25 °C (77 °F):	40 mmHg (0.77 psi)
<ul> <li>Density: Relative density: Vapor density: Relative vapor density at 20 °C (68 °F): Evaporation rate:</li> </ul>	Not determined. Not determined. 0.5 (air = 1) Not applicable.
Solubility in / Miscibility with Water:	Not miscible or difficult to mix.
Partition coefficient (n-octanol/water):	Not determined.
· Viscosity Dynamic: Kinematic: · Other information	Not determined. Not determined. No relevant information available.
0 Stability and reactivity	
Reactivity: No data available for self-reac Chemical stability: Stable under normal te Thermal decomposition / conditions to b	emperatures and pressures.

(Cont'd. on page 6)

(Cont'd. on page 8)

		Page: 6/10
- and	Safety Data Sheet	
	acc. to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations	
Printing date	e: October 16, 2018 Revision: O	ctober 16, 2018
Trade nam	ie: Natural Gas, Dry	
		(Cont'd. of page 5
	ely flammable gas.	
	with halogenated compounds. os readily flammable gases / fumes.	
Reacts	with oxidizing agents.	
	m explosive mixtures in air if heated above flash point and/or when sprayed or atom	nized.
	bus gases may be released if heated above the decomposition point.	
Excessi		
Keep ig	nition sources away - Do not smoke.	
· Incom Oxidizer	patible materials	
	nated compounds.	
·Hazard	lous decomposition products	
	re conditions only:	
Carbon	monoxide and carbon dioxide	
11 I OXICO	ological information	
Inform	ation on toxicological effects	
	oxicity: Based on available data, the classification criteria are not met.	
	0 values that are relevant for classification: None. v irritant effect:	
	skin: Based on available data, the classification criteria are not met.	
	eye: Based on available data, the classification criteria are not met.	
	zation: Based on available data, the classification criteria are not met.	
	nternational Agency for Research on Cancer):	
	nce is not listed.	
	ational Toxicology Program): nce is not listed.	
	Ca (Occupational Safety & Health Administration):	
	ce is not listed.	
	le route(s) of exposure:	
Inhalatio	on.	
Eye con		
Skin cor	ntact. iffects (acute toxicity, irritation and corrosivity):	
	place oxygen and cause rapid suffocation.	
	ell mutagenicity: Based on available data, the classification criteria are not met.	
	pgenicity: Based on available data, the classification criteria are not met. uctive toxicity: Based on available data, the classification criteria are not met.	
	ingle exposure: Based on available data, the classification criteria are not met.	
· STOT-r	epeated exposure: Based on available data, the classification criteria are not met.	
Aspirat	ion hazard: Based on available data, the classification criteria are not met.	
	rical information	
12 Ecolog	gical mormation	(Cont'd. on page 7

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,	FR 1910.1200) and WHMIS 2015 Regulations
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Trade name: Natural Gas, Dry	
Toxicity Aquatic toxicity No relevant information Persistence and degradability No	relevant information available.
Bioaccumulative potential: No relevan Mobility in soil: No relevant information Additional ecological information General notes: Not known to be hazarc Results of PBT and vPvB assess PBT: Not applicable. vPvB: Not applicable. Other adverse effects No relevant in	n available. Jous to water. nent
13 Disposal considerations	
	nsibility to dispose of unused material, residues and containers in and federal laws and regulations regarding treatment, storage and us wastes.
14 Transport information	
· UN-Number · DOT, ADR, IMDG, IATA	UN1971
· UN proper shipping name · DOT, IATA · ADR, IMDG	Natural gas, compressed NATURAL GAS, COMPRESSED
Transport hazard class(es)     DOT     Class	2.1
ADR	2.1

inting date: October 16, 2018	Revision: October 16, 20
ade name: Natural Gas, Dry	
	(Cont'd. of page
Class	2.1 1F
· Label	2.1
· IMDG, IATA	
· Class · Label	2.1 2.1
Packing group	This UN-number is not assigned a packing group.
<ul> <li>Environmental hazards</li> <li>Marine pollutant:</li> </ul>	No
· Special precautions for user	Not applicable.
Danger code (Kemler):	21
EMS Number:	F-D,S-U
Transport in bulk according to Annex	
MARPOL73/78 and the IBC Code Transport/Additional information: IATA Cargo Aircraft Only.	Not applicable.
Transport/Additional information:	Not applicable.
Transport/Additional information: IATA Cargo Aircraft Only.	Not applicable.
Transport/Additional information: IATA Cargo Aircraft Only. 5 Regulatory information	
Transport/Additional information: IATA Cargo Aircraft Only. 5 Regulatory information Safety, health and environmental re	
Transport/Additional information: IATA Cargo Aircraft Only.  SRegulatory information Safety, health and environmental re mixture United States (USA)	Not applicable.
Transport/Additional information: IATA Cargo Aircraft Only. SRegulatory information Safety, health and environmental remixture United States (USA) SARA	egulations/legislation specific for the substance
Transport/Additional information: IATA Cargo Aircraft Only.  Security information Safety, health and environmental romixture United States (USA) SARA Section 302 (extremely hazardous substated)	egulations/legislation specific for the substance
Transport/Additional information:     IATA     Cargo Aircraft Only.     Cargo Aircraft Only.     Safety, health and environmental remixture     United States (USA)     SARA     Section 302 (extremely hazardous substates Substance is not listed.	egulations/legislation specific for the substance of ances):
Transport/Additional information: IATA Cargo Aircraft Only. Cargo Aircraft Only. Safety, health and environmental remixture United States (USA) SARA Section 302 (extremely hazardous substa Substance is not listed. Section 355 (extremely hazardous substa	egulations/legislation specific for the substance of ances):
Transport/Additional information:     IATA     Cargo Aircraft Only.     Cargo Aircraft Only.     Segulatory information     Safety, health and environmental remixture     United States (USA)     Section 302 (extremely hazardous substates Substance is not listed.     Substance is not listed.	ances):
Transport/Additional information:     IATA     Cargo Aircraft Only.     Cargo Aircraft Only.     Safety, health and environmental remixture     United States (USA)     SARA     Section 322 (extremely hazardous subst.     Substance is not listed.     Substance is not listed.     Section 335 (extremely hazardous subst.     Substance is not listed.     Section 313 (Specific toxic chemical listi	ances):
Transport/Additional information: IATA Cargo Aircraft Only. SRegulatory information Safety, health and environmental remixture United States (USA) Saction 302 (extremely hazardous substa Substance is not listed.	ances):
Transport/Additional information:     IATA     Cargo Aircraft Only.     Cargo Aircraft Only.     Safety, health and environmental remixture     United States (USA)     Safety, health and environmental remixture     United States (USA)     Section 302 (extremely hazardous substa     Substance is not listed.     Section 313 (Specific toxic chemical listi     Substance is not listed.     Substance is not listed.     Section 313 (Specific toxic chemical listi     Substance is not listed.     TSCA (Toxic Substances Control Act)	ances):
Transport/Additional information: IATA Cargo Aircraft Only. Cargo Aircraft Only. SRegulatory information Safety, health and environmental romixture United States (USA) SaRa Saction 302 (extremely hazardous substis Substance is not listed.	egulations/legislation specific for the substance ances): ances):
Transport/Additional information: IATA Cargo Aircraft Only. Cargo Aircraft Only. Stafety, health and environmental remixture United States (USA) SARA Section 352 (extremely hazardous substa Substance is not listed. TSubstance is not listed. TSubstance is not listed. TSubstance is listed. Cargo Aircraft Only. Cargo Aircraft Onl	egulations/legislation specific for the substance of ances): ances): ances): angs): ental Release Prevention (40 CFR 68.130):
Transport/Additional information: IATA Cargo Aircraft Only. Cargo Aircraft Only. SRegulatory information Safety, health and environmental romixture United States (USA) SaRa Saction 302 (extremely hazardous substis Substance is not listed.	egulations/legislation specific for the substance of ances):

Williams.	Safety Da acc. to OSHA HCS (29CFR 1910.12)	
Printing date: C	ctober 16, 2018	Revision: October 16, 2018
Trade name:	Natural Gas, Dry	
		(Cont'd. of page 9)
Website: w	ww.chemtelinc.com	

SAFETY DATA SHEET DNX USA

Williams.

Safety Data Sheet acc. to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations Printing date: October 16, 2018 Revision: October 16, 2018

Inting date. October 16, 2016	Revision. October 16, 2016
rade name: Natural Gas, Dry	
	(Cont'd. of page 8)
· Chemicals known to cause cancer:	
Substance is not listed.	
Chemicals known to cause developmental toxicity for females: Substance is not listed.	
Chemicals known to cause developmental toxicity for males: Substance is not listed.	
Chemicals known to cause developmental toxicity: Substance is not listed.	
EPA (Environmental Protection Agency): Substance is not listed.	
IARC (International Agency for Research on Cancer): Substance is not listed.	
	- d ) -
Canadian Domestic Substances List (DSL) (Substances not liste Substance is listed.	ed.):
Substance is listed.	
Other information	
This information is based on our present knowledge. However, this s specific product features and shall not establish a legally valid contra	
Abbreviations and acronyms: ADR: European Agement concerning the International Carriage of Dangerous Good IMDC: International Martime Code for Dangerous Goods DDT: US Department of Transport Association CAS: Chemical Abstratis Service (division of the American Chemical Society) LCSC: Labat concentration, 50 percent DBT: Persitatin, 150 percent DBT: Persitatin, 250 percent DBT: Persitatin, 2	/sor internet/registry/substreg/home/ www.cas.org) 70-07488-6
ChemTel Inc. 1305 North Florida Avenue Tampa, Florida USA 33602-2902 Toll Free North America 1-888-255-3924 Intl. +01 813-248-0573	
	(Cont'd. on page 10)



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SAFETY DATA SHEET DNX

1. Identification Product identifier

Product name:

DNX Recommended use of the chemical and restrictions on use

• Recommended use: Denox catalyst.

Supplier's details Manufacture Company: Address:

Umicore Catalyst USA, LLC 9900 Bayport Blvd, Pasadena, TX 77507 United States of America 918-637-6732 or 281-814-8431 Telephone: Telefax: E-mail address:

Bayport\_EHS@am.umicore.com

Emergency telephone Chemtrec - Transportation Emergencies: 800-424-9300

2. Hazards identification

Classification of the substance or mixture - Germ cell mutagenicity - Reproductive toxicity - Serious eye damage - Specific target organ systemic toxicity -repeated exposure - Chronic aquatic toxicity

DNX

Product identifier:

Hazard pictograms

X

Label elements

 Signal Word: Danger Category 2 Category 2 Category 1 Category 2 Category 3



Safaty Data Shoot

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Precautionary Statements

Contains



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Symptoms:

media:

5. Fire-fighting measures

Further information

6. Accidental release measures

regulations.

The product itself does not burn. Extinguishing media Suitable extinguishing

Specific hazards arising from the chemical No hazards to be specially mentioned



## Most important symptoms/effects, acute and delayed

<ul> <li>Inhalation:</li> </ul>	Inhalation of excessive amounts of dust may cause irritation of the respiratory system; symptoms may include coughing and difficulty in breathing.
<ul> <li>Skin contact:</li> </ul>	May cause skin irritation.
<ul> <li>Eye contact:</li> </ul>	Causes serious eye damage.
<ul> <li>Chronic effects from long term exposure:</li> </ul>	Substances which cause concern for man owing to possible mutagenic effects but for which the available information is not adequate for making a satisfactory assessment. Suspected of causing genetic defects. Possible risk of irreversible effects. Substances which cause concern for humans owing to possible developmental toxic effects. Vanadium pentovide is in EU classified as a mutagenic substance in category 3 i.e. may cause possible risk of irreversible effects. Vanadium pentoxide is also in EU classified as toxic for reproduction in category 3, i.e. possible risk of harm to the unborn child.

Product is compatible with standard fire-fighting agents.

Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local

Personal precautions, protective equipment and emergency procedures Do not handle until all safety precautions have been read and understood. Ensure adequate ventilation. Avoid breathing dust. Follow safe handling advice and personal protective equipment recommendations.

Methods and materials for containment and cleaning up Clean up promptly by scoop or vacuum. Use approved industrial vacuum cleaner for removal.

## Indication of immediate medical attention and special treatment needed, if necessary

None known.

Special protective equipment and precautions for fire-fighters Wear full protective clothing and self-contained breathing apparatus

Environmental precautions Do not flush into surface water or sanitary sewer system.

Other hazards which do not result in classification No information available.

Divanadium pentoxide

# 3. Composition/information on ingredients

J. C	omposition/information	roningreulents		
N	lixture	ure		
	Ingredients	CAS-No.	EC-No.	%w/w
	Titanium dioxide	13463-67-7	236-675-5	>=70 - <=80
	Amorphous Silica	7631-86-9	231-545-4	>=7 - <=18
	Vitreous fibres	65997-17-3	266-046-0	>=1 - <=10
	Tungsten trioxide	1314-35-8	215-231-4	>=2 - <=9
	Divanadium pentoxide	1314-62-1	215-239-8	>=0 - <=4

 Hazard Statements

 - H341:
 Suspected of causing genetic defects.

 - H361d:
 Suspected of damaging the unborn child.

 - H318:
 Causes serious eye damage.

 - H373:
 May cause damage to organs through prolonged or repeated exposure if inhaled.

 - H412:
 Harmful to aquatic life with long lasting effects.

Precatitionary Statements
-P273: Avoid release to the environment.
-P280: Wear protective gloves/ protective clothing/ eye protection/ face protection.
-P305 +P351 + IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if
P338 + P310: present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.
-P308 + P313: IF exposed or concerned: Get medical advice/ attention.

## 4 First aid measures

## . . . . .

No crystalline silica forms found.

Description of necessary	first-aid measures
<ul> <li>General advice:</li> </ul>	IF exposed or if you feel unwell:, Get medical advice/ attention.
<ul> <li>Inhalation:</li> </ul>	Remove to fresh air. IF exposed or if you feel unwell: Call a POISON CENTER or doctor/ physician.
<ul> <li>Skin contact:</li> </ul>	Take off contaminated clothing and wash it before reuse. Wash with water and soap.
<ul> <li>Eye contact:</li> </ul>	Immediately flush eye(s) with plenty of water. Take victim immediately to hospital. Continue rinsing eyes during transport to hospital. Remove contact lenses, if present and easy to do. Continue rinsing.
<ul> <li>Ingestion:</li> </ul>	Clean mouth with water and drink afterwards plenty of water. Get medical advice/ attention if you feel unwell.

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1.0				
	st issue: - Date: 29.02.20	st issue: - Date: 29.02.2016	st issue: - Date: 29.02.2016	st issue: - Date: 29.02.2016

Reference to other sections For personal protection see section 8. For disposal considerations see section 13.

## 7. Handling and storage

Precautions for safe handling Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Minimize dust generation and accumulation. Provide appropriate exhaust ventilation at places where dust is formed. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Do not eat, drink or smoke when using this product. Handle in accordance with good industrial hygiene and safety practice. For personal protection see section 8.

# Conditions for safe storage, including any incompatibilities Keep container tightly closed. Product may be damaged by water

8. Exposure controls/personal protection

# Control parameters

## Exposure controls

Exposure limits may vary. It is recommended that information about locally applicable exposure limits is obtained.

Exposur	e Limit Values	Source
TLV-TWA	10 mg/m3	ACGIH (2014:03)
PEL	15 mg/m3	OSHA Z-1 (1993:06)
TLV-TWA	6 mg/m3	ACGIH (2012)
PEL		OSHA Z-1 (1993)
TLV-TWA	5 mg/m3	ACGIH (2014:03)
TLV-STEL	10 mg/m3	ACGIH (2014:03)
PEL	5 mg/m3	OSHA Z-1 (1993)
TLV-STEL	10 mg/m3	OSHA Z-1 (1993)
TLV-TWA	0.05 mg/m3	ACGIH (2012)
PEL	0.5 mg/m3	OSHA Z-1 (1993:06)
PEL	0.1 mg/m3	OSHA Z-1 (1993:06)
	TLV-TWA PEL TLV-TWA PEL TLV-STEL PEL TLV-STEL TLV-STEL TLV-TWA PEL	PEL         15 mg/m3           TLV-TWA         6 mg/m3           PEL         10 mg/m3           TLV-STEL         10 mg/m3           PEL         5 mg/m3           TLV-STEL         10 mg/m3           TLV-STEL         10 mg/m3           TLV-STEL         10 mg/m3           TLV-STEL         0.05 mg/m3           PEL         0.5 mg/m3

Individual protection measures, such as personal protective equipment

 Eye/face protection Safety goggles

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SAFETY DATA SHEET DNX

Skin protection
 Hand protection

Other protection

- Body Protection

Wear protective gloves. Glove material: Nitrile rubber Dust impervious protective suit. Safety shoes recommended when handling heavy containers Suitable mask with particle filter P3 (European Norm 143)

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Catalysis Page 5 of 11

Respiratory protection

Wash hands thoroughly after handling. Remove contaminated clothing and protective equipment before entering eating areas. Contaminated work clothing should not be allowed out of the workplace. Change working clothes after each work chilt work-shift.

## 9. Physical and chemical properties

Property	Value
Appearance <ul> <li>Physical state:</li> <li>Form:</li> <li>Color:</li> </ul>	solid Porous blocks (monoliths).
o Color: Odor:	Greenish yellow. odorless
Odor Threshold:	Not relevant.
pH:	Not applicable
Melting point/freezing point:	> 1,400 °C / > 2,550 °F
Initial boiling point and boiling range:	No data available
Flash point:	Not relevant.
Evaporation rate:	Not relevant.
Flammability (solid, gas):	The product is not flammable.
Upper/lower flammability or e • Lower explosion limit / lower flammability limit: • Upper explosion limit / upper flammability limit:	Not explosive
Vapor pressure:	Not applicable
Vapor density:	Not relevant.
Density:	Not applicable
Solubility(ies) <ul> <li>Water solubility:</li> <li>Solubility in other solvents:</li> </ul> Partition coefficient: n-octanol/water:	Negligible – metals leaching may occur. Not relevant. Not applicable

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Date of first issue: 29.02.2016 Date of last issue: -Revision Date: 29.02.2016 Version: 1.0



Autoignition temperature:	Not applicable
Decomposition temperature:	No information available.
Viscosity:	Not relevant.
Explosive properties:	Not explosive
Oxidizing properties:	The substance or mixture is not classified as oxidizing.
Other information:	No information available.
10 Stability and reactivity	

Reactivity Stable under normal conditions

# Chemical stability Stable under normal conditions

Possibility of hazardous reactions No dangerous reaction known under conditions of normal use.

Conditions to avoid No data available

# Incompatible materials Water and moisture for catalyst integrity.

Hazardous decomposition products None known

11. Toxicological information

## Information on likely routes of exposure

∘ Inhalation:	Inhalation of dust may cause shortness of breath, tightness of the chest, a sore throat and cough. Dust and fumes from vanadium compounds can irritate the respiratory system; symptoms may include nose bleeding, sore throat, cough, bronchitis, expectoration, chest pain; serious exposure may cause pneumonia and pulmonary oedema. The symptoms of pulmonary cedema often do not become manifest until several hours have passed and they are aggravated by physical effort. Rest and medical observation is therefore essential. Vanadium compounds may cause green discoloration of the tongue.
<ul> <li>Eye contact:</li> </ul>	Causes serious eye damage.
<ul> <li>Skin contact:</li> </ul>	May cause skin irritation.
<ul> <li>Ingestion:</li> </ul>	Ingestion may cause irritation of the mouth and throat and may cause discomfort.
<ul> <li>Long term effects:</li> </ul>	Substances which cause concern for man owing to possible mutagenic effects but for which the available information is not adequate for making

SAFETY DATA SHEET DNX

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Titanium dioxide:	Listed in: IARC: Category 2B	
Product:	No information available.	
Specific target organ syste Product:	mic toxicity - single exposure No information available.	
Specific target organ syste Product:	mic toxicity - repeated exposure No information available.	
Aspiration hazard Product:	No information available.	
Further information Product:	No information available.	
2. Ecological information		
Ecotoxicity		
Harmful to aquatic life with lo	ng lasting effects.	
» Acute toxicity No information available.		
» Chronic toxicity No information available.		
» Other organisms relevant to No information available.	o the environment	
Persistence and degradabi Product:	lity No information available.	
Bioaccumulative potential Product:	No information available.	
Mobility in soil Product:	No information available.	
Results of PBT and vPvB a Product:	ssessment No information available.	
Other adverse effects Product:	No information available.	
3. Disposal consideration	S	
Waste treatment methods Can be offered for metal reco Dispose of waste in accordar	overy. nce with applicable Federal, State and Local re bility for the classification of used or contamina	gulations. Umicore Catalys

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a satisfactory assessment. Suspected of causing genetic defects. Possible risk of irreversible effects. Substances which cause concern for humans owing to possible developmental toxic effects. Prolonged or repeated inhalation may cause damage to the lungs. Vanadium pentoxide is in EU classified as a mutagenic substance in category 3 i.e. may cause possible risk of irreversible effects. Vanadium pentoxide is also in EU classified as toxic for reproduction in category 3, i.e. possible risk of harm to the unborn child. IARC: (International Agency for Research on Cancer) Group 2B: Possibly carcinogenic to humans

# Acute toxicity

» Oral Titanium dioxide: Amorphous Silica: Vitreous fibres: Tungsten trioxide: Divanadium pentoxide Product:

» <u>Dermal</u> Amorphous Silica: Tungsten trioxide: Divanadium pentoxide:

Product: » Inhalation Titanium dioxide:

Amorphous Silica:

Tungsten trioxide: Divanadium pentoxide Product:

Product:

Skin corrosion/irritation

Serious eye damage/eye irritation Product: No i No information available.

Respiratory or skin sensitization Product: No

Germ cell mutagenicity Product: No information available

TDLo(Rat): 60 gm/kg

No data available

LD50 Oral(Rat): > 5,000 mg/kg

No toxicology information is available.

LD50 Dermal(Rabbit): > 2,000 mg/kg

LD50 Dermal(Rat): > 2,000 mg/kg

LD50 Dermal(Rat): > 2,500 mg/kg

LC0(Rat, 4 h): > 2.08 mg/l

No information available

No information available.

LC50(Rat, 24 h): > 5.36 mg/l

No toxicology information is available.

TCLo(Rat, 6 h / 4 weeks): 250 mg/m<sup>3</sup> TCLo(Mouse, 6 h / 13 weeks): 10 mg/m<sup>3</sup>

LC50(Rat, 4 h / 12 days): > 2.42 mg/l

No toxicology information is available.

LD50(Rat): > 2,000 mg/kg LD50(Rat): > 467 mg/kg

Carcinogenicity

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Consult federal, state and local regulations regarding proper disposal of container.

14. Transport information				
UN number:	None			
Proper shipping name:	None			
Transport hazard class(es)				
Packing group:	None			
Environmental hazards ADR/RID: IMDG: IATA: 49 CFR:				
Transport in bulk according to       Not applicable for product as supplied.         Annex II of MARPOL 73/78 and       the IBC Code:         Special precautions for user:       No special precautions are needed in handling this material.				
			15. Regulatory information	
Safety, health and environmenta Federal Regulations	regulations specific for the pro	duct in question		
<ul> <li>TSCA Section 12(b) Export No No substances are subject to TS</li> </ul>	ication A 12(b) export notification require	ements.		
<ul> <li>OSHA Special Regulated Subs No ingredient of this product pre or potential carcinogen by OSHA</li> </ul>		to 0.1% is identified as a carcinoger		
<ul> <li>Emergency Planning and Com</li> </ul>	unity Right-To-Know Act (EPC	RA)		
- Section 302 - Extremely Haza The following components are		ed by SARA Title III, Section 302:		
Ingredients				
Divanadium pentoxide (131	52-1): Threshold quantity:	bs 100/10000		
- Section 304 - Emergency Rel	se Notification			
Ingredients	Note			
Divanadium pentoxide (131		1000 lbs		

Ingredients

Ingredients

Clean Air Act

· Clean Water Act

Ingredients

- Section 313 - Toxic Chemicals

Divanadium pentoxide (1314-62-1):

- Section 311/312 - Chemical Reporting Hazard categories Fire

Sudden Release of Pressure Reactivity Immediate (Acute) Health Hazard Delayed (Chronic) Health Hazard

- Hazardous Substances (40 CFR 302.4)

Divanadium pentoxide (1314-62-1):

Divanadium pentoxide (1314-62-1):

- Section 112 r Accidential Relase Prevention (40 CFR 68.130)

The following components are subject to reporting levels established by SARA Title III, Section 313:

De minimis concentration: 1.0 % Reporting threshold for manufacturing and processing: 25000 lbs Reporting threshold for other uses: 10000 lbs Chemical Category Code: N770

Note

· Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)

Note

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

Section 311 Hazardous Substances (40 CFR 117.3) The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:

Note

Reportable quantity: 1000 lbs

Reportable quantity: 1,000 lbs



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#### States Regulations

0-116	Dura una a lática un	0.5

Ingredients	Note
Vitreous fibres (65997-17-3):	Carcinogen
Divanadium pentoxide (1314-62-1):	Carcinogen
Titanium dioxide (13463-67-7):	Carcinogen

#### 16. Other information

Key or legend to a	abbreviations and acronyms used in the safety data sheet
○ DNEL	Derived No Effect Level
<ul> <li>PNEC</li> </ul>	Predicted No Effect Concentration
<ul> <li>ACGIH</li> </ul>	US. ACGIH Threshold Limit Values
<ul> <li>OSHA Z-1</li> </ul>	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)
<ul> <li>PEL</li> </ul>	Permissible exposure limit
<ul> <li>TLV-STEL</li> </ul>	Threshold limit value - Short-term exposure limit
<ul> <li>TLV-TWA</li> </ul>	Threshold limit value - Time weighted average

- Key literature references and sources for data

   RTECS (Registry of Toxic Effects of Chemical Substances, National Institute for Occupational Safety and Health, 4676 Columbia Pkwy, Cincinnatt, Ohio 45226, USA).

   HSDB (Hazardous Substances Data Bank TOXNET (Toxicology Data Network)).

   UICLID (European Commission, Joint Reserch Centre, Institute for Health and consumer Protection, European Chemicals Bureau).

#### NFPA 704: National Fire Protection Association

|--|

0= minimal hazard, 1=slight hazard, 2=moderate hazard, 3=severe hazard,4=extreme hazard

The above information is believed to be accurate and is based on our present state of knowledge and experience. However, no warranty or representation with respect to such information is intended or given. This information is intended to be used for safet information contained herein is confidential; it may not be used for any purpose other than for which it has been issued, and may not be used by or disclosed to third parties without written approval of Umicore Catalyst USA, LLC.

SAFETY DATA SHEET DNX

## SAFETY DATA SHEET



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#### ActiSorb® S2 Extr 4.5 0230

Substance key: SC0000901524	Revision Date: 06/21/2016
Version : 3 - 0 / USA	Date of printing :06/23/2016
	· •

SECTION 1. IDENTIFICATION

Chemical nature

Identification of the	Clariant Corporation					
company:	4000 Monroe Road					
	Charlotte, NC, 28205					
	Telephone No.: +1 704-331-7000					
	Information of the substance/preparation: Product Safety 1-704-331-7710					
	Emergency tel. number: +1 800-424-9300 CHEMTREC					
Trade name: Material number:	ActiSorb® S2 Extr 4.5 0230 246721					
Chemical family:	Mixture of zinc oxide and calciumaluminate					
Primary product use:	Catalyst					
ECTION 2. HAZARDS IDENTIF	FICATION					
GHS Classification						
Eye irritation	: Category 2B					
GHS label elements						
Signal word	: Warning					
Hazard statements	: H320 Causes eye irritation.					
Precautionary statements	Prevention:					
	P264 Wash skin thoroughly after handling.					
	Response: P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337 + P313 If eye irritation persists: Get medical advice/ attention.					
Other hazards						
	- 10 - 1					
Hazards Not Otherwise Clas No particular hazards knowr						
Hazards Not Otherwise Clas No particular hazards knowr						

: Mixture of zinc oxide and calciumaluminate

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# ActiSorb® S2 Extr 4.5 Substance key: SC0000901524 Version : 3 - 0 / USA

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Chemical name			CAS-No.	Concentration (% w/
Zinc oxide			1314-13-2	>= 70 - < 90
Any concentration shown as	a ra	nge is to protec	t confidentiality or i	s due to batch variation.
TION 4. FIRST AID MEASUR	RES			
General advice	:	none		
If inhaled	:	Call a physicia	Remove to fresh air. Call a physician if irritation develops or persists. Call a physician if symptoms occur.	
In case of skin contact	:	Wash area wi	ith mild soap and co	to remove dust from skin. opious amounts of water. cal advice/ attention.
In case of eye contact	:		iately with plenty of or at least 15 minute	lukewarm water, also under es.
If swallowed	:	Route of expo IF SWALLOW CENTER/doc	/ED: Immediately c	all a POISON
Most important symptoms and effects, both acute and delayed	:	labelling (see		re those derived from the wn.
Notes to physician	:			nder poor hygienic condition eczema or dermatitis called
TION 5. FIREFIGHTING ME			teelf door not burn	
Suitable extinguishing media		Use extinguis	tself does not burn. hing measures that s and the surroundi	are appropriate to local ng environment.
Unsuitable extinguishing media	:	No informatio	n available.	

Specific hazards during : None known. firefighting Used catalyst may have different hazards or properties than

Used catalyst may have unretent nazarus or proported the original product. This MSDS does not apply to the used catalyst. Contact Technical Services at 502-634-7200 for more information.



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Further information	Wear full protective clothing and NIOSH/MSHA-approved positive pressure, self-contained breathing apparatus.
Special protective equipment : for firefighters	No special precautions required.
SECTION 6. ACCIDENTAL RELEAS	SE MEASURES
Personal precautions, : protective equipment and emergency procedures	Ensure adequate ventilation. Avoid dust formation. Use personal protective equipment. Avoid contact with skin, eyes and clothing. Wearing appropriate personal protective equipment, contain spill and collect into a suitable container. Minimize airborne particulates. Keep container tightly closed. Material should be swept up or vacuumed, using ventilation to control the level of airborne dust. Avoid using compressed air or any method that creates airborne dust. If cleanup may create airborne dust, personnel should wear eye, skin, and respiratory protection. Do not use compressed air for cleaning purposes. Refer to Section 8 for more information.
Environmental precautions :	Do not flush into surface water or sanitary sewer system.
Methods and materials for containment and cleaning up	Take up uncontaminated material and pass on for further processing. Take up contaminated material by mechanical means, load into clean containers, and dispose of in accordance with legal regulations.
SECTION 7. HANDLING AND STOP	RAGE
Advice on protection against : fire and explosion	In case of inappropriate handling, spent catalyst can be self- heating when in contact with air.
Advice on safe handling	Avoid contact with skin, eyes and clothing. Do not breathe dust/ fume/ gas/ mist/ vapours/ spray. Minimize dust generation and accumulation.

		Minimize dust generation and accumulation.
Conditions for safe storage	:	Keep tightly closed in a dry and cool place.
Technical measures/Precautions	:	Keep container tightly closed and dry.
		Keep container tightly closed. Keep container dry.
Materials to avoid	:	No materials to be especially mentioned.

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		R, or P95 or 100 or equivalent in the abse environmental control. Type of respirator exposure.	
Hand protection Remarks	:	Chemical resistant gloves	
Eye protection	:	Follow facility guidelines in the absence o Tightly fitting safety goggles	f dusts.
Skin and body protection	:	Wear protective clothing, including long sl to prevent skin contact. Thoroughly wash clothing before reuse.	leeves and gloves,
Hygiene measures	:	Wash skin thoroughly after handling.	
SECTION 9. PHYSICAL AND C	HEMI	CAL PROPERTIES	
Appearance	:	extrusions	
Colour	:	grey	
Odour	:	none	
Odour Threshold	:	Not relevant	
pH	:	not tested.	
Melting point	:	> 1,000 °C	
Boiling point	:	Not applicable	
Flash point	:	Not applicable	
Evaporation rate	:	Not applicable	
Flammability (solid, gas)	:	not determined	
Upper explosion limit	:	not tested.	
Lower explosion limit	:	not tested.	
Combustion number :		not determined	
Vapour pressure	:	Not applicable	
Relative vapour density	:	Not applicable	
Deletive develte		and the stand	

Relative density : not tested. Density : not tested.

: not tested.

Density

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#### SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Zinc oxide	1314-13-2	TWA (Respirable fraction)	2 mg/m3	ACGIH
	Further inform	nation: metal fum	e fever	
		STEL (Respirable fraction)	10 mg/m3	ACGIH
	Further inform	nation: metal fum	e fever	
		TWA (Dust)	5 mg/m3	NIOSH REL
		TWA (Fumes)	5 mg/m3	NIOSH REL
		ST (Fumes)	10 mg/m3	NIOSH REL
		C (Dust)	15 mg/m3	NIOSH REL
		TWA (total dust)	15 mg/m3	OSHA Z-1
		TWA (respirable fraction)	5 mg/m3	OSHA Z-1
		TWA (Total)	10 mg/m3	OSHA P0
		TWA (Respirable fraction)	5 mg/m3	OSHA P0
		TWA	5 mg/m3	OSHA Z-1
		TWA	5 mg/m3	OSHA P0
		STEL	10 mg/m3	OSHA P0
		TWA (Fumes)	5 mg/m3	OSHA Z-1
		TWA (Total dust)	10 mg/m3	OSHA P0
		TWA (respirable dust fraction)	5 mg/m3	OSHA P0
		TWA (Fumes)	5 mg/m3	OSHA P0
		STEL (Fumes)	10 mg/m3	OSHA P0

 Personal protective equipment

 Respiratory protection
 :
 Wear NIOSH approved particulate filtering respirator rated N,

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		· · · ·
Bulk density	5	1,090 kg/m3
Solubility(ies) Water solubility	:	insoluble
Solubility in other solvents	:	not tested.
Partition coefficient: n- octanol/water	:	not determined
Auto-ignition temperature	:	Not applicable
Decomposition temperature	:	no data available
Viscosity Viscosity, dynamic	:	Not applicable
Viscosity, kinematic	:	Not applicable
Flow time	:	Not applicable
Explosive properties	:	no data available
Oxidizing properties	:	not tested.
Sublimation point	:	not determined
Minimum ignition energy	:	not tested.
Particle size	:	not tested.
ECTION 10. STABILITY AND RE	AC	TIVITY
Reactivity	:	Stable under recommended storage conditions.
Chemical stability	:	The product is chemically stable.
Possibility of hazardous reactions	:	None known.
Conditions to avoid	:	None known.
Incompatible materials	:	None known.
Hazardous decomposition products	:	No decomposition if stored and applied as directed.

Information on likely routes of exposure

Eye contact Skin contact



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Substance key: SC0000901524		Revision Date: 06/21/20	)16
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Ingestion Inhalation			
Acute toxicity			
Product: Acute oral toxicity	:	Remarks: no data available	
Acute inhalation toxicity	:	Remarks: no data available	
Acute dermal toxicity	:	Remarks: no data available	
Components:			
Zinc oxide:			
Acute oral toxicity	:	LD50 (Rat, male and female): > 5,000 mg/kg Method: OECD Test Guideline 401 GLP: No information available.	
Acute inhalation toxicity	:	LC50 (Rat, male and female): > 5.7 mg/l Exposure time: 4 h Method: CEED Test Guideline 403 GLP: No information available.	
Acute dermal toxicity	:	LC50 (Rat, male and female): > 2,000 mg/kg Method: OECD Test Guideline 402 GLP: yes	
Acute toxicity (other routes of administration)	:	LD50 (Rat): 240 mg/kg Application Route: Intraperitoneal injection	
Skin corrosion/irritation			
Product: Species: Rabbit Exposure time: 24 h			

Exposure time: 24 h Method: Draize Test Result: Mild skin irritant Remarks: Information based on the active ingredient.

#### Components: Zinc oxide:

Species: Rabbit Result: No skin irritation

# Serious eye damage/eye irritation Product: Species: Rabbit Result: Mild eye irritant Exposure time: 24 h Method: Draize Test

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#### ActiSorb® S2 Extr 4.5 0230

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#### Experience with human exposure

Product: General Information The possible symptoms known are those derived from the labelling (see section 2).

SECTION 12. ECOLOGICAL INFORMATION Ecotoxicity Product: Toxicity to fish Remarks: no data available Components: Zinc oxide: (Ceriodaphnia dubia (water flea)): 0.67 mg/l Exposure time: 48 h Remarks: pH <7 Toxicity to fish (Selenastrum capricornutum (green algae)): 0.21 mg/l Toxicity to algae Exposure time: 72 h Remarks: pH >7 -8,5 M-Factor (Acute aquatic : 1 toxicity) M-Factor (Chronic aquatic : 1 toxicity) Persistence and degradability Product: Biodegradability : Remarks: no data available Components: Zinc oxide: Remarks: The methods for determining biodegradability are not applicable to inorganic substances. Biodegradability

#### Bioaccumulative potential Product:

Bioaccumulation : Remarks: no data available

#### Components: Zinc oxide:

Bioaccumulation : Remarks: Not applicable

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Remarks: Information based on the active ingredient.

#### Components:

Zinc oxide: Species: Rabbit Result: No eye irritation

#### Respiratory or skin sensitisation Product:

Remarks: no data available

#### Components: Zinc oxide:

Species: Guinea pig Result: non-sensitizin Carolnogonicity

carcinogenicity	
IARC	Not listed
OSHA	Not listed
NTP	Not listed

#### Repeated dose toxicity

Components: Zinc oxide: Enro Oxtue: Species: Rat, male and female NOAEL: ca. 68 mg/kg Application Route: oral (feed) Exposure time: 13 w Number of exposures: daily Dose: 300 - 3000 - 30000 ppm Group: yes Method: OECD Test Guideline 408 GI P-no GLP: no Remarks: By analogy with a product of similar composition

Species: Rat, male NOAEL: 0.015 mg/l Application Route: Inhalation Exposure time: 13 w Number of exposures: 6 h/day, 5 days/week Dose: 0,3 - 1,5 - 4,5 mg/m3 Group: yes Method: OECD Test Guideline 413 GLP: yes

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#### ActiSorb® S2 Extr 4.5 0230 Substance key: SC0000901524 Version : 3 - 0 / USA Revision Date: 06/21/2016 Date of printing :06/23/2016 Mobility in soil Product: Distribution among : Remarks: no data available environmental compartments Components: Zinc oxide: Distribution among environmental compartments Medium: water - soil log Koc: 2.2

Other adverse effects

Product: Additional ecological information : water endangering

#### Components: Zinc oxide: Results of PBT and vPvB : Remarks: Not relevant for inorganic substances

assessmen Additional ecological : water endangering information

#### SECTION 13. DISPOSAL CONSIDERATIONS

CTION 13. DISPOSAL CONSIL	JE	RATIONS
Disposal methods		
RCRA - Resource Conservation and Recovery Authorization Act	:	This product, if discarded as sold, is not a Federal RCRA hazardous waste.
Waste Code	:	NONE
Waste from residues	:	Dispose of this product in accordance with applicable local, state and federal regulations. Recover metal components by reprocessing whenever possible.
Contaminated packaging	:	Dispose of as unused product.

SECTION 14. TRANSPORT INFORMATION

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IATA

not restricted Proper shipping name: Class: Environmentally hazardous substance, solid, n.o.s.



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ActiSorb® S2 Extr 4 5 0230

substance key: SC0000901524	Revision Date: 06/21/2016
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Packing group:	III
UN/ID number:	UN 3077
Primary risk:	9
Remarks:	Shipment permitted
Hazard inducer(s):	zinc oxide
IMDG	
Proper shipping name:	Environmentally hazardous substance, solid, n.o.s.
Class:	9
Packing group:	
UN no.:	UN 3077
Primary risk:	9
Hazard inducer(s):	zinc oxide
Marine pollutant:	Marine Pollutant
EmS:	F-A S-F

rmation: This product is not regulated for surface transportation, based on 49 CFR 173.154(d)(1). Not regulated in single or combination packagings containing a net quantity per single or inner packaging of 5 L or less for liquids, or having a net mass of 5kg or less for solids. (IATA SP A197; IMIDS 2.10.27, 49 CFR 171 (4c)(2))

#### SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Plannir	-	and Community Right-to-Kr	now Act	
CERCLA Reportable Quantit This material does not contain		y components with a CERCL	A RQ.	
SARA 304 Extremely Hazard This material does not contain SARA 311/312 Hazards	an			
SARA 302	:	No chemicals in this materia requirements of SARA Title		orting
SARA 313	:	This product contains the ch which are subject to the sup Section 313 of the Superfun Reauthorization Act of 1986 40 CFR Part 372:	plier notification require d Amendments and	ements of
		Zinc compounds	Not Assigned	95 %
		Zinc powder - zinc dust (stabilized)	7440-66-6	76 %

#### Clean Water Act

Contains the following Priority Pollutant(s) at concentrations greater than 0.1%:, Zinc The components of this product are reported in the following inventories:

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# ActiSorb® S2 Extr 4.5 Page 13 0230 Substance key: SC0000901524 Version : 3 - 0 / USA Revision Date: 06/21/2016 Date of printing :06/23/2016 NFPA:

Revision Date

: 06/21/2016

This information corresponds to the present state of our knowledge and is intended as a general description of our products and their possible applications. Clariant makes no warranties, express or implied, as to the information's accuracy, adequacy, sufficiency or freedom from defect and assumes no liability in connection with any use of this information. Any user of this product is responsible for determining the suitability of Clariant's products for its particular application. NO EXPRESS OR A PARTICULAR PURPOSE OR OTHERWISE OF ANY PRODUCT OR EXPRESS FOR A PARTICULAR PURPOSE OR OTHERWISE OF ANY PRODUCT or REVICE. Nothing included in this information waives any of Clariant's General Terms and Conditions of Sale, which control unless it agrees otherwise in writing. Any existing intellectual/industrial property rights must be observed. Due to possible changes in our products and applicable national and international regulations and laws, the status of our products outing or storing Clariant products, are available upon request and are provided in compliance with applicable law. You should obtain and review the applicable Material Safety Data Sheet information before handling any of these products. For additional information, please contact Clariant. Clariant

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#### SAFETY DATA SHEET



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TSCA	All components of this product are listed or excluded from listing on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) Inventory.

#### SECTION 16. OTHER INFORMATION

Full text of other netrodition to the second Full text of other abbreviations

Further information

#### SAFETY DATA SHEET



Page 1

#### HDMax® 200 TRX 2.5 (aka Secondary Reformer 103-D)

Substance key: SC0000902310	Revision Date: 07/16/2015
Version : 2 - 2 / USA	Date of printing :07/29/2015

SECTION 1. IDENTIFICATION

Identification of the	Clariant Corporation
company:	4000 Monroe Road
	Charlotte, NC, 28205
	Telephone No.: +1 704 331 7000
	Information of the substance/preparation: Product Safety 1-704-331-7710
	· · · · · ·
	Emergency tel. number: +1 800-424-9300 CHEMTREC
Trade name: Material number:	HDMax® 200 TRX 2.5 (aka Secondary Reformer 103-D) 246196
Chemical family:	Oxides of cobalt, molybdenum and aluminium
	Catalyst

SECTION 2 HAZARDS IDENTIFICATION

GHS Cla	ssification		
Eye irrita	tion	;	Category 2A
Skin sen	sitisation	:	Category 1
Carcinog	enicity	:	Category 2
Specific t - single e	target organ toxicity exposure	:	Category 3 (Respiratory system)
	target organ toxicity d exposure	:	Category 2 (Lungs, Respiratory Tract, Liver, Bone)
GHS Lab	pel element		
Hazard p	lictograms	:	ال ا
Signal we	ord	:	Warning

: Warning

H317 May cause an allergic skin reaction. Hazard statements H319 Causes serious eye irritation. H335 May cause respiratory irritation. H351 Suspected of causing cancer.

H373 May cause damage to organs (Lungs, Respiratory Tract, Liver, Bone) through prolonged or repeated exposure.

Precautionary statements

: Prevention



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HDMax® 200 TRX 2.5 (aka Secondary Reformer 103-D)

Substance key: SC0000902310	Revision Date: 07/16/2015
/ersion : 2 - 2 / USA	Date of printing :07/29/2015
	P201 Obtain special instructions before use.
	P202 Do not handle until all safety precautions have been read and understood.
	P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
	P264 Wash skin thoroughly after handling.
	P271 Use only outdoors or in a well-ventilated area.
	P272 Contaminated work clothing should not be allowed out of the workplace.
	P280 Wear eye protection/ face protection.
	P280 Wear protective gloves.
	P281 Use personal protective equipment as required.
	Response:
	P302 + P352 IF ON SKIN: Wash with plenty of soap and water. P304 + P340 + P312 IF INHALED: Remove victim to fresh air
	and keep at rest in a position comfortable for breathing. Call a
	POISON CENTER or doctor/ physician if you feel unwell.
	P305 + P351 + P338 IF IN EYES: Rinse cautiously with water
	for several minutes. Remove contact lenses, if present and easy
	to do. Continue rinsing.
	P308 + P313 IF exposed or concerned: Get medical advice/
	attention
	P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention
	P337 + P313 If eye irritation persists: Get medical advice/
	attention.
	P363 Wash contaminated clothing before reuse.
	Storage:
	P403 + P233 Store in a well-ventilated place. Keep container
	tightly closed.
	P405 Store locked up.
	Disposal:
	P501 Dispose of contents/ container to an approved waste disposal plant.

#### Other hazards

The substance does not meet the criteria for PBT or vPvB substance.

#### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture	<ul> <li>Mixture</li> </ul>		
Chemical nature	Oxides of co	balt, molybdenum and a	luminium
Hazardous components			
Chemical Name		CAS-No.	Concentration (%)
Molybdenum trioxide		1313-27-5	5 - 20
0 1 10 11		1007 00 0	1 10

Molybdenum trioxide	1313-27-5	5 - 20			
Cobalt oxide	1307-96-6	1 - 10			
Aluminium oxide	1344-28-1	70 - 94			
Any concentration shown as a range is to protect confidentiality or is due to batch variation.					

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#### HDMax® 200 TRX 2.5 (aka Secondary Reformer 103-D)

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	· · ·
firefighting	
	Used catalyst may have different hazards or properties than the original product. This MSDS does not apply to the used catalyst. Contact Technical Services at 502-634-7200 for more information.
Further information	: Wear full protective clothing and NIOSH/MSHA-approved positive pressure, self-contained breathing apparatus.
Special protective equipment for firefighters	: No special precautions required.

#### SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Ensure adequate ventilation. Avoid dust formation. Bee personal protective equipment. Use personal protective equipment, contain spill and collect into a suitable container. Minimize airborne particulates. Keep container tightly closed. Material should be swept up or vacuumed, using ventilation to control the level of airborne dust. Avoid using compressed air or any method that creates airborne dust. If cleanup may create airborne dust, personnel should wear eye, skin, and respiratory protective equipment. Carefully shovel or sweep up spilled material and place in suitable container. Avoid generating dust. Do not discharge into storm drains or the aquatic environmeti.
Environmental precautions	:	Do not flush into surface water or sanitary sewer system.
Methods and materials for containment and cleaning up	:	Take up uncontaminated material and pass on for further processing. Take up contaminated material by mechanical means, load into clean containers, and dispose of in accordance with legal regulations.

SECTION 7. HANDLING AND STORAGE

Advice on protection against : In case of inappro	priate handling, spent catalyst can be self-
fire and explosion heating when in c	ontact with air.

Advice on safe handling	: Avoid contact with skin, eyes and clothing.
	Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
	Minimize dust generation and accumulation.

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HDMax® 200 TRX 2.5 (aka Secondary Reformer 103-D)

bstance key: SC00009023	
rsion : 2 - 2 / USA	Date of printing :07/29/201
CTION 4. FIRST AID MEASU	IRES
General advice	: Take off all contaminated clothing immediately. Show this safety data sheet to the doctor in attendance.
If inhaled	<ul> <li>INHALATION: If exposed to excessive levels of dust or fumes, remove to fresh air and get medical attention. Get medical attention if cough and other symptoms develop. Remove to fresh air.</li> </ul>
In case of skin contact	: Avoid contact with skin. Wash area with mild scap and copious amounts of water. Remove contaminated clothing and shoes. Wash clothing before reuse. If skin imitation occurs: Cet medical advice/ attention.
In case of eye contact	: Do not rub affected area. Rinse immediately with plenty of lukewarm water, also under the eyelds, for at least 15 minutes. Obtain medical attention.
If swallowed	: Do NOT induce vomiting. Call your local Poison Control Center (In the U.S. call 1-800- 222-1222).
Most important symptoms and effects, both acute and delayed	: The possible symptoms known are those derived from the labelling (see section 2). No additional symptoms are known.
Notes to physician	: Chronic ingestion may cause blood abnormalities (polycythemia), increased dotting time, hyperplasia of the bone marrow and thyroid gland, cardiomyopathy, and damage to the pancreas in sensitive individuals. May produce molybdenum induced gout. May cause pulmonary fibrosis and cough. May affect the liver, kidneys and red blood cells. May cause anemia. May cause hyperthyroidism. Monitor uric acid, CBC with differential, liver function, and renaf function. (Source: Hazardous Substance Database, HSDB, National Library of Medicine)

#### SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	:	The product itself does not burn. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	:	No information available.
Specific hazards during	:	None known.

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Conditions for safe storage	: Keep tightly closed in a dry and	l cool place.
Technical measures/Precautions	: Keep container tightly closed a	nd dry.
	Keep container tightly closed. Keep container dry.	
Materials to avoid	: No materials to be especially m	entioned.

#### SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis		
Aluminium oxide	1344-28-1	TWA (total dust)	15 mg/m3	OSHA Z-1		
		TWA (respirable fraction)	5 mg/m3	OSHA Z-1		
		TWA (Total)	10 mg/m3	OSHA P0		
		TWA (Respirable fraction)	5 mg/m3	OSHA P0		
		TWA (Respirable fraction)	1 mg/m3	ACGIH		
	Further information: Lower Respiratory Tract irritation, Pneumoconiosis, Neurotoxicity, Not classifiable as a human					
All iport or puisance ducts what	Carcinogen, varies					

Carcinogen, varies All inert or nuisance dusts, whether mineral, inorganic, or organic, not listed specifically by substance name are covered by the Particulates Not Otherwise Regulated (PNOR) limit which is 5 mg/m3 for respirable fraction and 15 mg/m3 for total dust. ACGIH exposure guidelines of less than 3 mg/m3 (respirable) and 10 mg/m3 (inhalable) have been established for particles (inscluble/poorly soluble) not otherwise specified (PNOS).

Engineering n

measures	1	Use ventilation adequate to keep exposures below
		recommended exposure limits. See the safety datasheet.

Personal protective equipment Respiratory protection

Wear NIOSH approved particulate filtering respirator rated N, R, or P95 or 100 or equivalent in the absence of proper environmental control. Type of respirator depends on level of



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#### HDMax® 200 TRX 2.5 (aka Secondary Reformer 103-D) Substance key: SC0000902310 Revision Date: 07/16/2015

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	exposure.
Hand protection	
	butyl-rubber PVC Viton (R) Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.
Eye protection :	Follow facility guidelines in the absence of dusts. Tightly fitting safety goggles If respiratory protection is needed under dusty conditions, a full facepiece respirator is recommended to provide both eye and respiratory protection.
Skin and body protection :	Wear protective clothing, including long sleeves and gloves, to prevent skin contact. Thoroughly wash clothing before reuse.
Hygiene measures :	Keep working clothes separately. Keep away from food, drink and animal feeding stuffs. Wash hands before breaks and immediately after handling the product. Preventive skin protection (protective ointment for the skin)

#### SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	extrusions
Particle size :		not tested.
Colour	;	blue
Odour	;	none
Odour Threshold	;	cannot be determined
pH	;	no data available
Melting point	;	> 800 °C
Boiling point	:	Not applicable
Flash point	:	Not applicable
Evaporation rate	;	Not applicable
Flammability (solid, gas)	;	not determined

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#### HDMax® 200 TRX 2.5 (aka Secondary Reformer 103-D)

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Conditions to avoid	: None known.
Incompatible materials	: None known.
Hazardous decomposition products	: No decomposition if stored and applied as directed.
CTION 11. TOXICOLOGICAL	NFORMATION
Information on likely routes Eye contact Skin contact Ingestion Inhalation	of exposure
Acute toxicity	
Product:	
Acute inhalation toxicity	: Remarks: no data available
Acute dermal toxicity	: Remarks: no data available
Components:	
Molybdenum trioxide: Acute oral toxicity	: LD50 (Rat, male and female): 2,689 - 3,830 mg/kg Method: OECD Test Guideline 401 GLP: yes
Acute inhalation toxicity	: LC50 (Rat, male and female): > 5.84 mg/l Exposure time: 4 h Method: OECD Test Guideline 403 GLP: yes
Acute dermal toxicity	: LD50 (Rat, male and female): > 2,000 mg/kg Method: OECD Test Guideline 402 GLP: yes
Cobalt oxide: Acute oral toxicity	: LD50 (Rat, male and female): 202 mg/kg Method: OECD Test Guideline 401 GLP: No information available.
Acute inhalation toxicity	: LC50 (Rat, male and female): 0.06 mg/l Exposure time: 4 h Method: OECD Test Guideline 436 GLP: yes
Acute dermal toxicity	: LD50 (Rat, male and female): > 2,000 mg/kg Method: OECD Test Guideline 402 GLP: yes Remarks: By analogy with a product of similar composition

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#### HDMax® 200 TRX 2.5 (aka Secondary Refo 402 D

HDMax® 200 TRX 2.5 (aka S		-
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Upper explosion limit	: not tested.	
Lower explosion limit	: not tested.	
Combustion number :	not determined	
Vapour pressure	: Not applicable	
Relative vapour density	: Not applicable	
Relative density	: not tested.	
Density	: no data available	
Bulk density	: 450 - 710 kg/m3	
Solubility(ies) Water solubility	: not tested.	
Solubility in other solvents	: not tested.	
Partition coefficient: n- octanol/water	: not determined	
Auto-ignition temperature	: Not applicable	
Decomposition temperature	: no data available	
Viscosity Viscosity, dynamic	: Not applicable	
Viscosity, kinematic	: Not applicable	
Flow time	: Not applicable	
Explosive properties	: no data available	
Oxidizing properties	: not tested.	
Sublimation point	: not determined	

#### SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	Stable under recommended storage conditions.
Chemical stability	:	The product is chemically stable.
Possibility of hazardous reactions	:	None known.

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#### HDMax® 200 TRX 2.5 (aka Secondary Reformer 103-D)

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Aluminium oxide: Acute oral toxicity

: LD50 (Rat, male and female): > 10,000 mg/kg Method: OECD Test Guideline 401 GLP: No information available.

Acute inhalation toxicity

: LC50 (Rat, male and female): > 2.3 mg/l Exposure time: 4 h Method: OECD Test Guideline 403 GLP: yes

Product: Remarks: no data available

Components:

Molybdenum trioxide: Species: Rabbit Exposure time: 4 h Method: OECD Test Guideline 404 Result: No skin irritation GLP: yes

Serious eye damage/eye irritation Product: Remarks: no data available

Components: Molybdenum trioxide: Result: Severe eye irritation

Cobalt oxide: Species: Bovine cornea Result: Mild eye irritation : Remarks: Not applicable

## Acute dermal toxicity Skin corrosion/irritation

Cobatt oxide: Species: reconstructed human epidermis (RhE) Exposure time: 15 min Method: OECD Test Guideline 439 Result: No skin irritation GLP: yes

Aluminium oxide: Species: Rabbit Exposure time: 24 h Method: OECD Test Guideline 404 Result: No skin irritation GLP: No information available.



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1011.2-27 00A	Date of printing .07/20/2010	Version . 2 - 27 00A	Date of printing 107/20/201
Exposure time: 240 min			
Method: OECD Test Guideline 437		Germ cell mutagenicity	
GLP: yes		Gerni cell mutagenicity	
		Components:	
Aluminium oxide:		Molybdenum trioxide:	
Species: rabbit eye		Genotoxicity in vitro	: Test Type: Ames test
Result: No eye irritation			Species: Salmonella typhimurium
Method: FDA guideline			Concentration: 100 - 5000 µg/plate
GLP: No information available.			Metabolic activation: with and without
			Method: OECD Test Guideline 471
Respiratory or skin sensitisation			Result: negative
Pro durate			GLP: yes
Product:			
Remarks: no data available			: Test Type: Chromosome Aberration Test
			Species: Human lymphocytes
Components:			Concentration: 100 - 1439 µg/ml
Molybdenum trioxide:			Metabolic activation: with and without
Test Type: Guinea pig maximization test			Method: Other
Exposure routes: Dermal			Result: negative
Species: Guinea pig			GLP: yes
Method: OECD Test Guideline 406			: Test Type: sister chromatid exchange assay
Result: Does not cause skin sensitisation.			Species: Chinese hamster ovary cells
GLP: yes			Metabolic activation: with and without
			Method: Other
Cobalt oxide:			Result: negative
Test Type: Mouse local lymphnode assay			GLP: No information available
Exposure routes: Dermal			GEL ING INFORMATION AVAILABLE.
Species: Mouse		Germ cell mutagenicity -	: It is concluded that the product is not mutagenic based on
Method: OECD Test Guideline 429		Assessment	evaluation of several mutagenicity tests.
Result: Causes sensitisation.		70000011011	oraladion of borola matagoniony toola.
GLP: yes		Cobalt oxide:	
		Genotoxicity in vitro	: Test Type: In vitro gene mutation study in mammalian cells
Exposure routes: Inhalation			Species: mouse lymphoma cells
Species: Humans			Concentration: 5 - 120 µg/ml
Method: diagnosis in humans			Metabolic activation: with and without
Result: May cause sensitisation of susceptible persons.			Method: OECD Test Guideline 476
GLP: no			Result: negative
Aluminium oxide:			GLP: yes
Test Type: Draize Test			
Exposure routes: Dermal		Genotoxicity in vivo	: Test Type: Chromosome Aberration Test
Species: Guinea pig			Species: Rat (male and female)
Method: Draize Test			Strain: Sprague-Dawley
Result: non-sensitizing			Cell type: Bone marrow cells Application Route: oral (gavage)
GLP: no			Exposure time: 16 h
			Dose: 100 mg/kg
			Method: OECD Test Guideline 475
Test Type: Respiratory system			memory OECD Test Guideline 475
			Popult: pogativa
Exposure routes: inhalation (dust/mist/fume)			Result: negative
Exposure routes: inhalation (dust/mist/fume) Species: Mouse			Result: negative GLP: no
Test Type: Respiratory system Exposure routes: inhalation (dust/mist/fume) Species: Mouse Method: Other Result: non-sensitizing			

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#### HDMax® 200 TRX 2.5 (aka Secondary Reformer 103-D)

bstance key: SC0000902310	Revision Date: 07/16/2015
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	Cell type: Bone marrow cells Application Route: oral (gavage) Exposure time: 48 h Dose: 125 - 250 - 500 mg/kg Method: OECD Test Guideline 474 Result: negative GLP: yes Test substance: other TS
Germ cell mutagenicity - Assessment	: It is concluded that the product is not mutagenic based on evaluation of several mutagenicity tests.
Aluminium oxide:	
Genotoxicity in vitro	: Test Type: In vitro gene mutation study in mammalian cells Species: mouse Imphoma cells Concentration: 6, 1 - 780 ug/ml Metabolic activation: with and without Method: OECD Test Guideline 476 Result: negative GLP: yes Remarks: By analogy with a product of similar composition
Genotoxicity in vivo	: Test Type: Chromosome Aberration Test Species: Rat (female) Strain: wistar Cell type: Bone marrow cells Application Route: oral (gavage) Exposure time: Single exposure Dose: 500 - 1000 - 2000 mg/kg Method: OECD Test Guideline 475 Result: positive GLP: No information available. Test Type: Micronucleus test Species: Rat (female) Strain: wistar Cell type: Bone marrow cells Application Route: oral (gavage)
	Exposure time: Single exposure Dose: 500 - 1000 - 2000 mg/kg Method: OECD Test Guideline 474 Result: positive GLP: No information available.
Germ cell mutagenicity - Assessment	: Weight of evidence does not support classification as a germ cell mutagen.
Carcinogenicity	
Components: Molybdenum trioxide: Carcinogenicity - Assessment	: Limited evidence of carcinogenicity in animal studies

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## HDMax® 200 TRX 2.5 (aka Secondary Reformer 103-D)

ubstance key: SC000090231	
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Cobalt oxide: Carcinogenicity - Assessment	: Carcinogenicity classification not possible from current data.
Aluminium oxide: Carcinogenicity - Assessment	: Carcinogenicity classification not possible from current data.
IARC	Listed
OSHA	Not listed
NTP	Not listed
Reproductive toxicity	
Components: Molybdenum trioxide: Effects on fertility	: Test Type: Fertility/early embryonic development Species: Rat Sex: male and female Dose: 7,5 - 25,5 - 90 mg/kg Exposure time: 91 - 92 d Frequency of Treatment: daily Group: yes NOAEL: > 90 mg/kg. Method: 05CD combined repeated dose and reproductive/developmental toxicity screening test GLP: yes Remarks: By analogy with a product of similar composition
Effects on foetal development	<ul> <li>Species: Rat Application Route: oral (feed) Exposure time: gestation days 6-20 Dose: 4,5-15-30-60 mg/kg Group: yes &gt;60 mg/kg Number of exposures: daily Test period: 20 d Method: OECD Test Guideline 414 GLP; yes Remarks: By analogy with a product of similar composition</li> </ul>
Reproductive toxicity - Assessment	: No reproductive toxicity to be expected. No teratogenic effects to be expected.
Cobalt oxide: Effects on fertility	:



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HDMax® 200 TRX 2.5 (aka Secondary Reformer 103-D)

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	perspective.
Effects on foetal : development	Remarks: The study is not necessary from a scientific perspective.
Reproductive toxicity - : Assessment	Classification as "toxic for reproduction" is not justifiable. Classification as "teratogenic" is not justifiable.
Aluminium oxide: Effects on fertility :	
Enocia on formity .	Species: Rat
	Sex: male and female
	Dose: 57 - 189 - 567 mg/kg
	Frequency of Treatment: daily
	Sprague-Dawley Test period: 1 a
	Group: yes
	NOAEL: ca. 567 mg/kg,
	F1: ca. 57 mg/kg,
	Method: Other
	GLP: yes
	Remarks: By analogy with a product of similar composition
Effects on foetal	Species: Rat
development	Application Route: oral (gavage)
	Exposure time: gestation day 6 to 15
	Dose: 126 - 251 - 503 mg/kg
	Group: yes
	503 mg/kg
	> 100 mg/kg Number of exposures: twice daily
	Method: OFCD Test Guideline 414
	GLP: No information available.
	Remarks: By analogy with a product of similar composition
	Classification as "toxic for reproduction" is not justifiable.
Assessment	No teratogenic effects to be expected.
STOT - single exposure	
Components:	
Molybdenum trioxide: Assessment: May cause respirat	ory irritation.
Cobalt oxide:	
	nixture is not classified as specific target organ toxicant, single
"ISSESSINCILL INC SUDSIGNCE OF IT	incure is not classified as specific target organ toxicant, single

Assessment: The substance or mixture is not classified as specific target organ toxicant, single exposure.

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#### HDMax® 200 TRX 2.5 (aka Secondary Reformer 103-D)

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	· •

Species: Rat, male and female NOAEL: 15 mg/kg Application Route: oral (gavage) Exposure time: 28 d Number of exposures: daily Dose: 15 - 50 - 150 mg/kg Group: yes Method: Directive 84/449/EEC, B.7 GI P: ves Method: Directive Grant Land GLP: yes Remarks: By analogy with a product of similar composition

Species: Rat. male and female Application Route: Inhalation Exposure time: 105 w Exposure time: 105 w Number of exposures: 6 h per day, 5 d per week Dose: 0,31 - 1,03 - 2,98 mg/m3 Group: yes Method: Other GLP: yes Remarks: By analogy with a product of similar composition

Application Route: Skin contact Remarks: not available

Aluminium oxide: Species: Rat, male and female NOAEL: 57 mg/kg Application Route: Drinking water Exposure time: 1 a Number of exposures: continuously Dose: 57 - 189 - 567 mg/kg Group: yes Method: OECD Test Guideline 426 cl Dove GLP: yes Remarks: By analogy with a product of similar composition

Species: Rat Application Route: Inhalation Exposure time: 6 m Number of exposures: 6 hr/day; 5 days a week Dose: 15-30-50-70-100 mg/m3 Method: OECD Trest Guideline 413 GLP: No information available.

Application Route: Skin contact Remarks: The study is not necessary from a scientific perspective

Aspiration toxicity Components:

Molybdenum trioxide: No aspiration toxicity classification



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HDMax® 200 TRX 2.5 (aka Secondary Reformer	<b>103-D)</b> Page 15
Substance key: SC0000902310	Revision Date: 07/16/2015
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STOT - repeated exposure	
Components:	
Molybdenum trioxide: Assessment: The substance or mixture is not classified repeated exposure.	as specific target organ toxicant,
Cobalt oxide: Assessment: The substance or mixture is not classified repeated exposure.	as specific target organ toxicant,
Aluminium oxide: Assessment: The substance or mixture is not classified repeated exposure.	as specific target organ toxicant,
Repeated dose toxicity	
Components:	
Molybdenum trioxide: Species: Rat, male and female NOAEL: ca. 25.5 mg/kg Application Route: oral (feed) Exposure time: 91 - 92 d	
Number of exposures: daily Dose: 7, 5 - 25, 5 - 90 mg/kg Group: yes Method: OECD Test Guideline 408	
GLP: yes Remarks: By analogy with a product of similar composit	ion
Species: Rat, male and female	
Application Route: Inhalation Exposure time: 13 w	
Number of exposures: 6,5 h per day, 5 d per week	
Dose: 1 - 3 - 10 - 30 - 100 mg/m3 Group: yes	
Method: OECD Test Guideline 413 GLP: yes	
Application Route: Skin contact Remarks: The study is not necessary from a scientific p	erspective.
Cobalt oxide: Species: Rat, male and female NOAEL: 5 - 40 mg/kg Application Route: oral (gavage)	
Exposure time: >= 46-47 d Number of exposures: daily Dose: 5 - 15 - 40 - 100 mg/kg	
Group: yes Method: OECD Test Guideline 422 GLP: yes	
Remarks: By analogy with a product of similar composit	ion

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#### HDMax® 200 TRX 2.5 (aka Secondary Reformer 103-D)

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Cobalt oxide: No aspiration toxicity classification

Aluminium oxide: No aspiration toxicity classification

Experience with human exposure

Product: General Information : The possible symptoms known are those derived from the labelling (see section 2).

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity Product: Toxicity to fish

#### Components:

Molybdenum trioxide: Toxicity to fish : EC50 (Pimephales promelas (fathead minnow)): 866 - 1,017 ECO (Printepriates promotes (active) - mg/l Exposure time: 96 h Test Type: static test Analytical monitoring: no data available Method: Other GLP: No information available. EC50 (Daphnia magna (Water flea)): ca. 310 mg/l Exposure time: 48 h Test Type: static test Analytical monitoring: no data available Method: Other GLP: No information available. Toxicity to daphnia and other aquatic invertebrates

Remarks: no data available

Toxicity to algae

NOEC (Pseudokirchneriella subcapitata (green algae)): 60 -NOEC (Pseudokirchneriella subcapi 124 mg/l End point: Growth rate Exposure time: 72 h Test Type: static test Analytical monitoring: yes Test substance: sodium molybdate Method: OECD Test Guideline 201 GLP: no Remarks: Bv analogy with a product

Remarks: By analogy with a product of similar composition

EC50 (Pseudokirchneriella subcapitata (green algae)): > 434 - 630 mg/l



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ersion : 2 - 2 / USA	Date of printing :07/29/2015	Version : 2 - 2 / USA	Date of printing :07/29/201
	End point: Growth rate Exposure time: 72 h		Method: OECD Test Guideline 209 GLP: yes
	Test Type: static test Analytical monitoring; yes Test substance: sodium molybdate Method: OECD Test Guideline 201 GLP: no Remarks: By analogy with a product of similar composition	Toxicity to soil dwelling organisms	: NOEC (Eisenia sp.): 11.8 - 116.9 mg/kg Exposure time: 56 d End point: Reproduction Test substance: sodium molybdate Method: OECD Test Guideline 222 GLP: no
Toxicity to fish (Chronic toxicity)	: NOEC (Oncorthynchus mykiss (rainbow trout)): ca. 73 mg/l Exposure time: 78 d Test Type: flow through	Plant toxicity	Remarks: By analogy with a product of similar composition : EC10 (Trifolium pratense): 0.6 - 2,615 mg/kg
	Analytical monitoring; yes Test substance: sodium molybdate Method: OECD Test Guideline 210 GLP: no Remarks: By analogy with a product of similar composition		Exposure time: 21 d End point: Growth Test substance: sodium molybdate Method: Other GLP: no Remarks: By analogy with a product of similar composition
	NOEC (Pimephales promelas (fathead minnow)): ca. 42 mg/l Exposure time: 3 d d Test Type: flow through Analytical monitoring: yes Test substance: sodium molybdate Method: OECD Test Guideline 210 GLP: no Remarks: By analogy with a product of similar composition		EC10 (Lolium perenne): 45 - 5,214 mg/kg Exposure time: 21 d End point: Growth Test substance: sodium molybdate Method: Other GLP: no Remarks: By analogy with a product of similar composition
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	: NOEC (Daphnia magna (Water flea)); ca. 75 mg/l Exposure time: 21 d End point: Reproduction rate Test Type: semi-static test Analytical monitoring: yes Test substance: sodium molybdate Method: OECD Test Guideline 211 GLP: no Remarks: By analogy with a product of similar composition	Sediment toxicity	: NOEC (Hyalella azteca (Scud)): 1112 mg/l Analytical monitoring: yes Sediment: Natural sediment Exposure duration: 96 h Basis for effect: mortality Test substance: Natural sediment Analytical monitoring: yes Method: Other GLP: no Remarks: By analogy with a product of similar composition
	NOEC (Daphnia magna (Water flea)): ca. 168 mg/l Exposure time: 21 d End point: Reproduction rate Test Type: semi-static test Analytical monitoring: yes Test substance: sodium molybdate Method: DECD Test Guideline 211 GLP: no	Toxicity to terrestrial organisms	: NOEC (other avian): ca. 600 mg/kg Exposure time: 28 d End point: weight Test substance: sodium molybdate Method: Other GLP: no
Toxicity to bacteria	Remarks: By analogy with a product of similar composition : ECS0 (activated sludge of a predominantly domestic sewage): 820 mg/l End point: Bacteria toxicity (respiration inhibition) Exposure time: 3 h Test Type: aquatic Analytical monitoring: yes	Cobalt oxide: Toxicity to fish	: NOEC (Danio rerio (zebra fish)): > 136 mg/l Exposure time: 96 h Test Type: static test Analytical monitoring: yes Method: OECD Test Guideline 203 GLP: yes Remarks: The details of the toxic effect relate to the nominal

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Version : 2 - 2 / USA	Date of printing :07/29/2015	Version : 2 - 2 / USA
	concentration.	
Toxicity to daphnia and other aquatic invertebrates	<ul> <li>NOEC (Daphnia magna (Water flea)): &lt; 0.008 mg/l Exposure time: 48 h</li> <li>Test Type: static test</li> <li>Analytical monitoring: yes</li> <li>Method: OECD Test Guideline 202</li> <li>GLP: yes</li> </ul>	NOE Expo End p Test Analy Meth GLP:
Toxicity to algae	: EC50 (Pseudokirchneriella subcapitata (green algae)): 80 mg/l End point: Growth rate Exposure time: 69 h Test Type: static test Analytical monitoring: yes Analytical monitoring: yes Method: OEOD Test Guideline 201 GLP: yes Remarks: The details of the toxic effect relate to the nominal concentration.	Remi Toxicity to bacteria : C505 End p Expo Test Analy Meth GLP: Remi
	EC50 (Lemna minor (duckweed)): 0.0901 mg/l End point: Growth rate Exposure time: 7 d	Toxicity to soil dwelling : Rema organisms
	Test Type: static test Analytical monitoring: yes	Plant toxicity : Rema
	Anaryucal monitoring: yes Method: OECD Test Guideline 221 GLP: No information available. Remarks: By analogy with a product of similar composition	Sediment toxicity : NOE weigt Analy Sedir
Toxicity to fish (Chronic toxicity)	: NOEC (Oncorhynchus mykiss (rainbow trout)): 2.2 mg/l Exposure time: 81 d Test Type: flow through Analytical monitoring: yes Method: Other GLP: yes Remarks: By analogy with a product of similar composition	Seci Expo Basis Test Anaj Meth GLP: Rem
	NOEC (Cyprinodon variegatus (sheepshead minnow)): 31.2 mgl Exposure time: 28 d Test Type: flow through Analytical monitoring: yes Method: Other GLP: yes Remarks: By analogy with a product of similar composition	NOE (d.w., Anaiy Sedir Expo Basis Test Anaiy Meth
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	: NOEC (Daphnia magna (Water flea)): 0.0608 mg/l Exposure time: 21 d End point: Reproduction rate Test Type: semi-static test Analytical monitoring: yes Method: OECD Test Guideline 211	GLP- Remi Toxicity to terrestrial : Remi organisms
	GLP: No information available. Remarks: By analogy with a product of similar composition	Aluminium oxide: Toxicity to fish : NOE

#### SAFETY DATA SHEET

HDMax® 200 TRX 2.5 (aka Secondary Reformer 103-D)

0902310	Revision Date: 07/16/2015
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	NOEC (Mysidopsis bahia (opossum shrimp)): 1.77 mg/l Exposure time: 28 d End point: mortality Test Type: flow through Analytical monitoring; yes Method: Other GLP: No information available.
	Remarks: By analogy with a product of similar composition
	: EC50 (activated studge, domestic): ca. 150 mg/l End point: Bacteria toxicity (growth inhibition) Exposure time: 0.5 h Test Type: aquatic Analytical monitoring; yes Method: OECD Test Guideline 209 GLP: yes Remarks: By analogy with a product of similar composition
ng	: Remarks: Not applicable
	: Remarks: Not applicable : NOEC (Lumbriculus variegatus (Worm)): ca. 2800 mg/kg dry weight (d.w.) Analytical monitoring: yes Sediment: Natural sediment Exposure duration: 28 d Basis for effect: mortality Test substance: Natural sediment
	Analytical monitoring: yes Method: Other
	GLP: no
	Remarks: By analogy with a product of similar composition
	NOEC (Hyalella azteca (Scud)): ca. 210 mg/kg dry weight (d.w.) Analytical monitoring: yes Sediment: Natural aediment Exposure duration: 42 d Basis for effect: mortality Test substance: Natural sediment Analytical monitoring: yes Method: Other GLP: no Remarks: By analogy with a product of similar composition
	: Remarks: Not applicable

EC (Salmo trutta (brown trout)): > 0.072 mg/l



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Substance key: SC0000902310	Revision Date: 07/16/2015
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	Exposure time: 96 h Test Type: semi-static test Analytical monitoring: yes Method: OECD Test Guideline 203 GLP: yes
Toxicity to daphnia and other aquatic invertebrates	: NOEC (Daphnia magna (Water flea)): > 0.071 mg/l Exposure time: 48 h Test Type: static test Analytical monitoring: yes Method: OECD Test Guideline 202 GLP: yes
Toxicity to algae	: NOEC (Pseudokirchneriella subcapitata (green algae)): >= 0.052 mg/l End point: Growth rate Exposure time: 72 h Test Type: static test Analytical monitoring: yes Method: OECD Test Guideline 201 GLP: yes
	EC50 (Pseudokirchneriella subcapitata (green algae)): 1.05 mg1 End point: Growth rate Exposure time: 72 h Test Type: static test Analytical monitoring: yes Method: OECD Test Guideline 201 GLP: yes Remarks: By analogy with a product of similar composition
Toxicity to fish (Chronic toxicity)	: NOEC (Pimephales promelas (fathead minnow)): 56.48 mg/l Exposure time: 7 d Test Type: semi-static test Analytical monitoring; yes Method: Other GLP: yes Remarks: By analogy with a product of similar composition
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	: NOEC (Daphnia magna (Water flea)): 0.076 mg/l Exposure time: 21 d End point: Reproduction rate Test Type: semi-static test Analytical monitoring: yes Method: OECD Test Guideline 211 GLP: yes Remarks: By analogy with a product of similar composition
Toxicity to bacteria	: GLP: Remarks: Not applicable
Toxicity to soil dwelling	: Remarks: Not applicable

#### SAFETY DATA SHEET



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ubstance key: SC0000902310	)	Revision Date: 07/16/201
ersion : 2 - 2 / USA		Date of printing :07/29/201
organisms		
Plant toxicity	: Remarks: Not applicable	
Sediment toxicity	: Remarks: Not applicable	
Toxicity to terrestrial organisms	: Remarks: Not applicable	
Persistence and degradabil	ity	
Product:		
Biodegradability	: Remarks: no data availat	ble
Components:		
Molybdenum trioxide: Biodegradability	: Remarks: Not applicable	
Cobalt oxide: Biodegradability	: Remarks: Not applicable	
Aluminium oxide: Biodegradability	: Remarks: Not applicable	
Bioaccumulative potential		
Product:		
Bioaccumulation	: Remarks: no data availat	ble
Components:		
Molybdenum trioxide: Bioaccumulation	0	
Divaccumulation	: Species: Other Bioconcentration factor (I	3CF): 10
	Method: calculated	,
	Remarks: Bioaccumulation	on is unlikely.
Cobalt oxide:	-	
Bioaccumulation	: Remarks: Not applicable	
Aluminium oxide:	Demoke Network 11	
Bioaccumulation	: Remarks: Not applicable	
Mobility in soil		
Product:	Demoder of data and late	
Distribution among environmental compartments	: Remarks: no data availat	bie
,		

#### SAFETY DATA SHEET



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#### HDMax® 200 TRX 2.5 (aka Secondary Reformer 103-D)

Substance key: SC0000902310	Revision Date: 07/16/2015	Substance key: SC0000902310	
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Distribution among environmental compartments	: adsorption Medium: water - soil Method: Other Remarks: Not expected to adsorb on soil.	information	FRATIONO
	Temana, nor expected to adobte on son.	SECTION 13. DISPOSAL CONSID	ERATIONS
Cobalt oxide: Distribution among	: adsorption	Disposal methods	
environmental compartments	Medium: water - soil log Koc: ca. 3.48	RCRA - Resource Conservation and Recovery Authorization Act	: Although not a RCRA haza state regulations for proper
Aluminium oxide:		Waste Code	: NONE
Distribution among environmental compartments	: Remarks: Not applicable	Waste from residues	: Dispose of this product in a state and federal regulation reprocessing whenever po:
Other adverse effects		Contaminated packaging	: Dispose of as unused prod
Product: Additional ecological	: highly water endangering		
information		SECTION 14. TRANSPORT INFOR	RMATION
Components:		DOT Regulation:	
Molybdenum trioxide: Environmental fate and pathways	: not available	Proper shipping name: Hazard class: Packing group:	Environmentally hazardous 9 III
Results of PBT and vPvB assessment	: Remarks: Not relevant for inorganic substances	UN/NA-number: Primary hazard class: Technical Name:	UN 3077 9 Cobalt oxide
Additional ecological information	: Do not allow to enter ground water, waterways or waste water.	Emergency Response Guide:	171
		IATA Proper shipping name:	Environmentally hazardous
Components:		Class:	9
Cobalt oxide: Environmental fate and	: not available	Packing group: UN/ID number:	III UN 3077
pathways	. Hot diffundito	Primary risk:	9
Results of PBT and vPvB	: Remarks: Not applicable	Remarks: Hazard inducer(s):	Shipment permitted Cobalt oxide
assessment		IMDG	
Additional ecological	: Do not allow to enter ground water, waterways or waste water.	Proper shipping name: Class:	Environmentally hazardous
information		Packing group:	iii
Components:		UN no.: Primary risk:	UN 3077 9
Aluminium oxide:		Hazard inducer(s):	Cobalt oxide
Environmental fate and pathways	: not available	Marine pollutant: EmS:	Marine Pollutant F-A S-F
Results of PBT and vPvB assessment	: Remarks: Not applicable		
Additional ecological	: Do not allow to enter ground water, waterways or waste water.		

#### SAFETY DATA SHEET

<u>Components:</u> Molybdenum trioxide:

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#### HDMax® 200 TRX 2.5 (aka Secondary Reformer 103-D)

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ation	
3. DISPOSAL CONSI	IERATIONS
al methods	
- Resource vation and Recovery zation Act	: Although not a RCRA hazardous waste, check with local and state regulations for proper disposal.
Code	: NONE

	:	NONE
ues	:	Dispose of this product in accordance with applicable local, state and federal regulations. Recover metal components by reprocessing whenever possible.

#### roduct.

ulation:	
er shipping name: Ird class:	Environmentally hazardous substances, solid, n.o.s. 9
ing group: IA-number:	III UN 3077
ary hazard class:	9
nical Name:	Cobalt oxide
rgency Response e:	171
er shipping name:	Environmentally hazardous substance, solid, n.o.s.
3: ing group.	9
ing group: D number:	UN 3077
ary risk:	9
arks:	Shipment permitted
rd inducer(s):	Cobalt oxide
er shipping name:	Environmentally hazardous substance, solid, n.o.s.
3: ing group.	9
ing group: o.:	UN 3077
ary risk:	9
rd inducer(s):	Cobalt oxide
ne pollutant:	Marine Pollutant
:	F-A S-F



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SECTION 15. REGULATORY I	NFORMATION			
EPCRA - Emergency Plar	ning and Community Rig	ht-to-Know Act		
CERCLA Reportable Qua	ntity			
This material does not contain any components with a CERCLA RQ.				
SARA 304 Extremely Haz	ardous Substances Repo	rtable Quantity		
This material does not cont	ain any components with a	section 304 EHS RQ.		
SARA 311/312 Hazards	: Acute Health Hazar Chronic Health Haz			
SARA 302		material are subject to the reporting		

	requirements of SARA 1	itie III, Section 302.					
SARA 313	which are subject to the Section 313 of the Super	This product contains the chemical or chemicals listed below which are subject to the supplier notification requirements of Section 313 of the Superfund Amendments and Resulthorization Act of 1986 ("SARA") and the requirements of 40 OFR Part 372:					
	Molybdenum trioxide	1313-27-5	20 %				
	Cobalt Compounds	Not Assigned	10 %				

#### Clean Water Act

Contains no known priority pollutants at concentrations greater than 0.1%.

Cobalt

The components of this product are reported in the following inventories: All components of this product are listed or excluded from listing on the United States Environmental Protection Age Toxic Substances Control Act (TSCA) Inventory. TSCA

7440-48-4

7.9 %

#### Inventories

AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TSCA (USA)

SECTION 16. OTHER INFORMATION

Further information

MSDS (Material Safety Data Sheet) Of

**Activated Alumina** 

#### 1. PRODUCT AND COMPANY IDENTIFICATION

Commodity Name: Activated Alumina Chemical Name: Aluminum oxide Synonyms: Alumina; Activated Alumina; x-p Alumina CAS No.: 1344-28-1 Molecular Weight: 101.96 Chemical Formula: Al<sub>2</sub>O<sub>3</sub>

Company:	Jiangsu Sanji Industrial Co. Ltd.
Address:	Yuduo Town, Jiangyan District, Taizhou City, Jiangsu Province, CHINA.
Telephone:	86-523-88641929
ax:	86-523-88641929
Email:	jyxuzl@hotmail.com
Emergency call:	13801422526

#### 2 . COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient CAS No Percent

1344-28-1 90-100% Aluminum oxid

#### 3. HAZARDS IDENTIFICATION

¢

-

CAUTION! MAY IRRITATE RESPIRATORY TRACT. Potential Health Effects Eye: No adverse effects expected but dust may cause mechanical irritation. Skin: May cause irritation with redness and pain. Ingestion: No adverse effects expected Inhalation: Hazard is principally that of a nuisance dust. Coughing or shortness of breath may occur in cases of excessive inhalation Chronic: adverse effects expected. Aggravation of Pre-existing Conditions: Not expected to be a health hazard

#### 4. FIRST AID MEASURES

Inhalation Remove to fresh air. Get medical attention for any breathing difficulty.

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NFPA:



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Revision Date

: 07/16/2015

This information is supplied under the OSHA Hazard Communication Standard, 29 CFR 1910.1200, and is offered in good faith based on data available to us that we believe to be true and accurate. The recommended industrial hygiene and safe handling procedures are believed to be generally applicable to the material. However, each user should review these recommendations in the specific context of the intended use and determine whether they are appropriate for that use. No warranty, express or implied, is made regarding the accuracy of this data, the hazards connected with the use of the material, or the results to be obtained from the use thereof. We assume no responsibility for damage or injury from the use of the product described herein. Data provided here are typical and not intended for use as product specific specifications. specifications

US/USA

#### ingestion:

Give several glasses of water to drink to dilute. If large amounts were swallowed, get medical advice

#### Skin Contact

skin Contact: Immediately flush skin with planty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention if irritation develops.

Eve Contact: Immediately fush eyes with plenty of water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get medical attention if irritation persists.

#### 5. FIRE FIGHTING MEASURES

Fire: Not considered to be a fire hazard.

Explosion: Not considered to be an explosion hazard.

Fire Extinguishing Media:

Use any means suitable for extinguishing surrounding fire. Special information:

Use protective clothing and breathing equipment appropriate for the surrounding fire and to protect against the aluminum oxide dust that may be dispersed in the air.

#### 6 . ACCIDENTAL RELEASE MEASURES

Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Sweep up and containerize for reclamation or disposal. Vacuuming or wet sweeping may be used to avoid dust dispersal.

#### 7 . HANDLING AND STORAGE

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

#### 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Airborne Exposure Limits:

Alumina (Aluminum Oxide): Auminia (Auminium Osade); -OSHA Permissible Exposure Limit (PEL); alpha alumina, 15 mg/m3 total dust, 5 mg/m3 respirable fraction -ACGIH Threshold Limit Value (TLV); aluminum oxide, 10 mg/m3 (TVVA) inhalable (total) particulate matter containing no asbestos and < 1% crystalline silica, A4

Ventilation System: ventilation system: A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, Industrial Ventilation, A Manual of Recommended Practices, most recent edition, for details.

Personal Respirators (NIOSH Approved): If the exposure limit is exceeded and engineering controls are not feasible, a half facepiece particulate respirator (NIOSH type N95 or better filters) may be worn for up to ten times the





exposure limit or the maximum use concentration specified by the appropriate regulatory agency exposule timin of the intextinum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. A full-face pice particulate respirator (NOSH type N100 filters) may be worn up to 50 times the exposure limit, or the maximum use concentration specified by the appropriate regulatory agency, or respirator supplier, whichever is lowest. If oil particles (e.g. lubricants, cutting fluids, glycerine, etc.) are present, use a NOSH type R or P filter. For emergencies or instances where the exposure levels are not known, use a full-facepiece positive-presente, air-supplied respirator, WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

#### Skin Protection:

Wear protective gloves and clean body-covering clothing

Eye Protection:

Use chemical safety goggles. Maintain eye wash fountain and quick-drench facilities in work area 9. PHYSICAL AND CHEMICAL PROPERTIES

#### Appearance: White bead.

Odor: No. Solubility: Insoluble in water. Density: 4.0 at 20C pH: 7. Volatile: 0 Boiling PoInt: 2980C (5396F) Melting Point: cs. 2000C (ca. 3632F) Vapor Density (Air=1): Not applicable Vapor Pressure (mm Hg): Not applicable. Evaporation Rate (BuAc=1): Not applicable.

#### 10 . STABILITY AND REACTIVITY

Stability: Stable under ordinary conditions of use and storage Hazardous Decomposition Products: No information found. Hazardous Polymerization: Will not occur. Incompatibilities: Chlorine trifluoride, Ethylene oxide. Conditions to Avoid: Incompatibles.

#### 11. TOXICOLOGICAL INFORMATION

Investigated as a mutagen, reproductive effector.

Carloer Lists	NTP C	arcinogen	
Ingredient	Known	Anticipated	IARC Category
Aluminum Oxide (1344-28-1)	No	No	None

12. ECOLOGICAL INFORMATION

Concorlinte

Environmental Fate: No information found Environmental Toxicity: No information found.

#### 16. OTHER INFORMATION

Key : NE= Not Established NA= Not Applicable (R) = Registered Trademark

#### Disclaimer:

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Jiangsu Sanji Industrial Co.,Ltd. 2017.01.01

#### 13. DISPOSAL CONSIDERATIONS

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

#### 14 . TRANSPORT INFORMATION

Hazards identification: None The product is not classified in Explosives. The product is not classified in filmmable substances. The product is not classified in oxidizing substances and organic peroxides. The product is not classified in tadioactive material. The product is not classified in corrosives. The product is not classified in corrosives. The product is not classified in other dangerous properties.

Land - Road/Railway : Not restricted. Inland waterways : Not restricted. Sea : Not restricted.

Air : Not restricted

The substance is not subject to transport.

#### The goods are packaged according to the packaging requirement of ordinary goods. 15 . REGULATORY INFORMATION

#### Chemical inventory Status - Part 1

Ingredient		TSCA	EC	Japan	Austra	ilia
Aluminum Oxide (1344-28-1)		Yes	Yes	Yes	Yes	
Chemical Inventory Status - Part 2						
Ingredient		Korea	DSL	NDSL	Canada- Phil.	-
Aluminum Oxide (1344-28-1)	-	Yes	Yas	No	Yes	
Federal, State & International Regi	RQ	- Part 1 TPC		302- st Chem		
Aluminum Oxide (1344-28-1)	No	No	Ye	is No		
Federal, State & International Regi	lations	- Part 2				
Ingredient	CER	CLA	261.3			-TSCA-
Aluminum Oxide (1344-28-1)	N	lo	No	1	No	
Chemical Weapons Convention:		TSCA		No d	DTA: 1	No

ute: Yes Chronic: No Fire: No Pressure: No (Pure / sold) Reactivity: No

#### SAFETY DATA SHEET

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Page 1

#### MEGAMAX® 800 Tab 6x4

Substance key: SC0000102090	Revision Date: 06/03/2016
Version : 2 - 1 / USA	Date of printing :12/06/2016

#### SECTION 4 IDENTIFICATION

Identification of the company:	Clariant Produkte (Deutschland) GmbH Lenbachplatz 6 München, 80333
	Telephone No.: +49 (0)89/5110-0 Information of the substance/preparation: Product Stewardship +1-704-331-7710
	Emergency tel. number: +1 800-424-9300 CHEMTREC
Frade name: Material number:	MEGAMAX® 800 Tab 6x4 246689
	Ortobal

Primary product use:	Gatalyst
Chemical family:	Mixture of zinc oxide, copper oxide and aluminium oxide

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification : Category 2B

Specific target organ toxicity : Category 2 (Lungs) - repeated exposure

GHS label elements Hazard pictograms



Signal word Hazard statements

Eve irritation

- Warning
  - H320 Causes eye irritation. H373 May cause damage to organs (Lungs) through prolonged or repeated exposure.

Precautionary statements

Prevention P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray. P264 Wash skin thoroughly after handling. Response:

Response: P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P314 Get medical advice/ attention if you feel unwell. P337 + P313 If eye irritation persists: Get medical advice/

5



Page 2

#### MEGAMAX® 800 Tab 6x4

Substance key: SC0000102090 Version : 2 - 1 / USA Revision Date: 06/03/2016 Date of printing :12/06/2016 attention. Disposal: P501 Dispose of contents/ container to an approved waste disposal plant

: Mixture of zinc oxide, copper oxide and aluminium oxide

#### Other hazards

The substance does not meet the criteria for PBT or vPvB substance. Hazards Not Otherwise Classified: Inhalation of dust may cause pneumoconiosis.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### Substance / Mixture : Mixture

Substance name

#### Hazardous components Chemical name CAS-No. Concentration (% w/w) Copper oxide Zinc oxide 1317-38-0 1314-13-2 55 - 70 20 - 35

Aluminium oxide			1344-28-1	1 - 15
Graphite			7782-42-5	< 5
Any concentration sho	wn as a rar	nge is to protect	confidentiality or is due	to batch variation.
SECTION 4. FIRST AID M	EASURES			
General advice	:	none		
If inhaled	:		sh air. n if irritation develops on n if symptoms occur	or persists.

		Call a physician if symptoms occur.
In case of skin contact	:	Before washing use a dry brush to remove dust from skin. Wash area with mild soap and copious amounts of water. If skin irritation occurs: Get medical advice/ attention.
In case of eye contact	:	Do not rub affected area. Rinse immediately with plenty of lukewarm water, also under the eyelids, for at least 15 minutes. Get medical attention.
If swallowed	:	Route of exposure unlikely. IF SWALLOWED: Immediately call a POISON CENTER/doctor.
Most important symptoms and effects, both acute and delayed	:	The possible symptoms known are those derived from the labelling (see section 2). No additional symptoms are known.
Notos to physician		There is an increased risk of inhelation in nationts with

Notes to physician There is an increased risk of inhalation in patients with Wilson's disease. Inhalation of the FUMES of metal oxides

#### SAFETY DATA SHEET

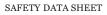


MEGAMAX® 800 Tab 6x4 Page 4 Substance key: SC0000102090 Version : 2 - 1 / USA Revision Date: 06/03/2016 Date of printing :12/06/2016 into clean containers, and dispose of in accordance with legal regulations. SECTION 7. HANDLING AND STORAGE Advice on protection against : In case of inappropriate handling, spent catalyst can be self-

life and explosion	ficating when in contact with an.
Advice on safe handling	: Avoid contact with skin, eyes and clothing. Do not breathe dust/ fume/ gas/ mist/ vapours/ spray. Minimize dust generation and accumulation.
Conditions for safe storage	: Keep tightly closed in a dry and cool place.
Technical measures/Precautions	: Keep container tightly closed and dry.
	Keep container tightly closed. Keep container dry.
Materials to avoid	: No materials to be especially mentioned.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace	e control parame	ters					
Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis			
Copper oxide	1317-38-0	TWA (Fumes)	0.1 mg/m3 (Copper)	NIOSH REL			
	Further inform mists)		specific listing for Cop				
		TWA (Fumes)	0.1 mg/m3 (Copper)	NIOSH REL			
	Further inform mists)	Further information: Also see specific listing for Copper (dusts ar mists)					
Zinc oxide	1314-13-2	TWA (Respirable fraction)	2 mg/m3	ACGIH			
	Further inform	ation: metal fum	e fever				
		STEL (Respirable fraction)	10 mg/m3	ACGIH			
	Further information: metal fume fever						
		TWA (Dust)	5 mg/m3	NIOSH REL			
		TWA (Fumes)	5 mg/m3	NIOSH REL			
		ST (Fumes)	10 mg/m3	NIOSH REL			





## MEGAMAX® 800 Tab 6x4 Page 3 Substance key: SC0000102090 Version : 2 - 1 / USA Revision Date: 06/03/2016 Date of printing :12/06/2016 may cause metal fume fever including irritation of the eyes and respiratory tract and flu-like symptoms. Prolonged or repeated contact under poor hygienic conditions may produce a papular, pustular eczema or dermatitis called oxide pox.

#### SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	:	The product itself does not burn. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	:	Do not use a solid water stream as it may scatter and spread fire.
Specific hazards during firefighting	:	Fire may cause evolution of: breathable copper oxide dust
		None known.
Further information	:	Wear full protective clothing and NIOSH/MSHA-approved positive pressure, self-contained breathing apparatus. Evacutate area. Fight fire with normal precautions from a reasonable distance.
Special protective equipment for firefighters	:	In the event of fire, wear self-contained breathing apparatus.

#### SECTION 6. ACCIDENTAL RELEASE MEASURES

B		manual and a second second second
Personal precautions, protective equipment and		Ensure adequate ventilation. Avoid dust formation.
emergency procedures		Use personal protective equipment.
		Avoid contact with skin, eyes and clothing. Wearing appropriate personal protective equipment, contain
		spill and collect into a suitable container.
		Minimize airborne particulates.
		Keep container tightly closed.
		Material should be swept up or vacuumed, using ventilation to control the level of airborne dust. Avoid using compressed air
		or any method that creates airborne dust. Avoid using compressed air or any method that creates airborne dust. If cleanup may create airborne dust, personnel should wear eye, skin, and respiratory protection.
		Refer to Section 8 for more information.
Environmental precautions	:	Do not flush into surface water or sanitary sewer system.
Methods and materials for containment and cleaning up	:	Take up uncontaminated material and pass on for further processing.
• •		Take up contaminated material by mechanical means, load

#### SAFETY DATA SHEET

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	1	C (Dust)	15 mg/m3	NIOSH REL
		TWA (total dust)	15 mg/m3	OSHA Z-1
		TWA (respirable fraction)	5 mg/m3	OSHA Z-1
		TWA (Total)	10 mg/m3	OSHA P0
		TWA (Respirable fraction)	5 mg/m3	OSHA P0
		TWA	5 mg/m3	OSHA Z-1
		TWA	5 mg/m3	OSHA P0
		STEL	10 mg/m3	OSHA P0
		TWA (Fumes)	5 mg/m3	OSHA Z-1
		TWA (Total dust)	10 mg/m3	OSHA P0
		TWA (respirable dust fraction)	5 mg/m3	OSHA P0
		TWA (Fumes)	5 mg/m3	OSHA P0
		STEL (Fumes)	10 mg/m3	OSHA P0
Aluminium oxide	1344-28-1	TWA (total dust)	15 mg/m3	OSHA Z-1
		TWA (respirable fraction)	5 mg/m3	OSHA Z-1
		TWA (Total)	10 mg/m3	OSHA P0
		TWA (Respirable fraction)	5 mg/m3	OSHA P0
		TWA (Respirable fraction)	1 mg/m3	ACGIH
	Further inform Pneumoconic carcinogen, v	sis, Neurotoxicit	spiratory Tract irritation y, Not classifiable as	on, a human
Graphite	7782-42-5	TWA (Respirable)	2.5 mg/m3	NIOSH REL
	Further inform (synthetic).		specific listing for Gra	
		TWA	15 Million particles per cubic foot	OSHA Z-3
	Further inform field techniqu = particles pe	es., mppcf X 35.	impinger samples co 3 = million particles p	unted by light- er cubic meter
		TWA (Total)	10 mg/m3	OSHA P0
		TWA (Respirable	5 mg/m3	OSHA P0



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1	fraction)

i.		1	i.
	fraction)		
	TWA (total	15 mg/m3	OSHA Z-1
	dust)		
	TWA	5 mg/m3	OSHA Z-1
	(respirable		
	fraction)		
	TWA	2 mg/m3	ACGIH
	(Respirable		
	fraction)		
Further inform	ation: Pneumoco	oniosis	
	TWA	2.5 mg/m3	OSHA P0
	(Respirable	-	
	fraction)		
	TWA (Dust)	15 Million	OSHA Z-3
	. ,	particles per cubic	
	1	foot	
Further inform	ation: Based on	impinger samples co	unted by light-
field technique	s mnncf X 35 3	8 = million particles pr	er cubic meter
= particles per		, minor particida p	51 04510 1110(6)
particios per	TWA (Total	10 mg/m3	OSHA P0
	dust)	io ingrino	CONA FU
+	TWA	5 mg/m3	OSHA P0
		5 mg/ms	USHA PU
	(respirable dust fraction)		
	TWA	2.5 mg/m3	OSHA P0
	(respirable		
	dust fraction)		
	PEL (Total	10 mg/m3	CAL PEL
	dust)		
	PEL	5 mg/m3	CAL PEL
	(respirable		
	dust fraction)		
Further inform	ation: The conce	entration and percent	age of the
particulate use	ed for this limit an	e determined from th	e fraction
		e following characteri	
Aerodynamic	Diameter in Micr	ometers (unit density	
sphere)	Percent Pa	ssing Selector 0	
		100 1	
		97 2	
		91.3	
	PEI	2.5 mg/m3	CAL PEL
	(Respirable	2.0 mg/mo	OAL FEL
	dust)		

Use adequate exhaust ventilation and/or dust collection to keep dust levels below exposure limits.

#### SAFETY DATA SHEET



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Relative density	:	not tested.	
Density	:	not tested.	
Bulk density	:	ca. 1,050 kg/m3	
Solubility(ies) Water solubility	:	insoluble	
Solubility in other solvents	:	not tested.	
Partition coefficient: n- octanol/water	:	not determined	
Auto-ignition temperature	:	Not applicable	
Decomposition temperature	:	no data available	
Viscosity Viscosity, dynamic	:	Not applicable	
Viscosity, kinematic	:	Not applicable	
Flow time	:	Not applicable	
Explosive properties	:	no data available	
Oxidizing properties	:	not tested.	
Sublimation point	:	not determined	
Minimum ignition energy	:	not tested.	

: not tested.

#### SECTION 10. STABILITY AND REACTIVITY

Particle size

Reactivity	:	Stable under recommended storage conditions.
Chemical stability	:	No decomposition if stored and applied as directed.
Possibility of hazardous reactions	:	No dangerous reaction known under conditions of normal use.
Conditions to avoid	:	Avoid dust formation. Keep away from heat.
Incompatible materials	:	Acids and bases
Hazardous decomposition products	:	No decomposition if stored and applied as directed. In case of fire hazardous decomposition products may be produced such as:

## SAI



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nent	
:	Wear NIOSH approved particulate filtering respirator rated N, R, or P95 or 100 or equivalent in the absence of proper environmental control. Type of respirator depends on level of exposure.
:	Chemical resistant gloves
:	Follow facility guidelines in the absence of dusts. Tightly fitting safety goggles
:	Wear protective clothing, including long sleeves and gloves, to prevent skin contact. Thoroughly wash clothing before reuse.
:	Wash off with warm water and soap.
IEMI	CAL PROPERTIES
:	tablet, powder
:	black, olive
:	none
:	Not relevant
:	not tested.
:	> 800 °C
:	Not applicable
:	Not applicable
:	Not applicable
:	not determined
:	not tested.
:	not tested.
	0 nent : : : : : : : : : : : : : : : : : : :

not determined : Not applicable

: Not applicable

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Combustion number :

Relative vapour density

Vapour pressure



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	see heading 5		
SECTION 11. TOXICOLOGICAL IN	FORMATION		
Information on likely routes o	fexposure		
Eye contact Skin contact Ingestion Inhalation			
Acute toxicity			
Components:			
Copper oxide:			
Acute oral toxicity	LD50 (Rat): > 2,000 mg/kg Method: OECD Test Guideline 423		
Acute dermal toxicity	LD50 (Rat): > 2,000 mg/kg Method: OECD Test Guideline 402		
Zinc oxide:			
Acute oral toxicity	LD50 (Rat, male and female): > 5,000 mg/kg Method: OECD Test Guideline 401 GLP: No information available.		
Acute inhalation toxicity :	LC50 (Rat, male and female): > 5.7 mg/l Exposure time: 4 h Method: OECD Test Guideline 403 GLP: No information available.		
Acute dermal toxicity	LC50 (Rat, male and female): > 2,000 mg/kg Method: OECD Test Guideline 402 GLP: yes		
Acute toxicity (other routes of administration)	LD50 (Rat): 240 mg/kg Application Route: Intraperitoneal injection		
Aluminium oxide:			
Acute oral toxicity	LD50 (Rat, male and female): > 10,000 mg/kg Method: OECD Test Guideline 401 GLP: No information available.		
Acute inhalation toxicity	LC50 (Rat, male and female): > 2.3 mg/l Exposure time: 4 h Method: OECD Test Guideline 403 GLP: yes		
Acute dermal toxicity	Remarks: Not applicable		

Graphite:



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Acute oral toxicity : Remarks: Test data for the substance are not available.

#### Skin corrosion/irritation

Product: Product: Species: Rabbit Exposure time: 24 h Method: Draize Test Result: Mild skin imitant Remarks: Information based on the active ingredient.

#### Components:

Copper oxide: Species: Rabbit Method: OECD Test Guideline 404 Result: No skin irritation

#### Zinc oxide:

Species: Rabbit Result: No skin irritation

# Aluminium oxide: Autiminum oxide: Species: Rabbit Exposure time: 24 h Method: OECD Test Guideline 404 Result: No skin irritation GLP: No information available.

#### Serious eye damage/eye irritation

Product: Product: Species: Rabbit Result: Mild eye irritant Exposure time: 24 h Method: Draize Test Remarks: Information based on the active ingredient.

#### Components:

Copper oxide: Species: Rabbit Result: No eye irritation Method: OECD Test Guideline 405

Zinc oxide: Species: Rabbit Result: No eye irritation

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	Ŭ
Substance key: SC0000102090	Revision Date: 06/03/2016
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Genotoxicity in vivo	: Test Type: Chromosome Aberration Test Species: Rat (female) Strain: wistar Cell type: Bone marrow cells Application Route: coral (gawage) Exposure time: Single exposure Dose: 500 - 1000 - 2000 mg/kg Method: DECD Test Guideline 475 Result: positive GLP: No Information available.
	Test Type: Micronucleus test Species: Rat (female) Strain: wistar Cell type: Bone marrow cells Application Route: crai (gavage) Exposure time: Single exposure Dose: 500 - 1000 - 2000 mg/kg Method: OECD Test Guideline 474 Result: positive GLP: No information available.
Germ cell mutagenicity - Assessment	: Weight of evidence does not support classification as a germ cell mutagen.
Carcinogenicity	
Components:	
Aluminium oxide: Carcinogenicity - Assessment	: Carcinogenicity classification not possible from current data.
IARC	Not listed
OSHA	Not listed
NTP	Not listed
Reproductive toxicity <u>Components:</u> Aluminium oxide:	
Effects on fertility	: Species: Rat Sex: male and female Dose: 57 - 189 - 567 mg/kg Frequency of Treatment: daily Sprague-Dawley Application Route: Drinking water Test period: 1 a Group: yes NOAEL: ca. 567 mg/kg,

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# Species: rabbit eye Result: No eye irritation Method: FDA guideline GLP: No information available.

Respiratory or skin sensitisation

Product: Remarks: not tested.

#### Components:

Copper oxide: Species: Guinea pig Method: OECD Test Guideline 406 Result: non-sensitizing

Zinc oxide: Species: Guinea pig Result: non-sensitizing

#### Aluminium oxide:

Aluminium oxide: Test Type: Draize Test Exposure routes: Dermal Species: Guinea pig Method: Draize Test Result: non-sensitizing GLP: no

Test Type: Respiratory system Exposure routes: inhalation (dust/mist/fume) Species: Mouse Method: Other Result: non-sensitizing GLP: no

Germ cell mutagenicity Components:

#### Aluminium oxide: Genotoxicity in vitro

Test Type: In vitro gene mutation study in mammalian cells Species: mouse lymphoma cells Concentration: 6,1 - 780 µg/ml Metabolic activation: with and without Method: OECD Test Guideline 476 Result: negative GLP: yes Remarks: By analogy with a product of similar composition

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Veloci 2 = 17 COX	F1: ca. 57 mg/kg, Melhod: Other GLP: yes Remarks: By analogy with a product of similar composition
Effects on foetal : development	Species: Rat Application Route: oral (gavage) Exposure line: gestation day 6 to 15 Dose: 126 - 251 - 503 mg/kg Group: yes 503 mg/kg > 100 mg/kg Number of exposures: twice daily Method: OECD Test Guideline 414 GLP: No information available. Remarks: By analogy with a product of similar composition
Reproductive toxicity - : Assessment	Classification as "toxic for reproduction" is not justifiable. No teratogenic effects to be expected.
STOT - single exposure	
Components:	
Aluminium oxide: Assessment: The substance or n exposure.	nixture is not classified as specific target organ toxicant, single
STOT - repeated exposure	
Components:	
Aluminium oxide: Assessment: The substance or r repeated exposure.	nixture is not classified as specific target organ toxicant,

Repeated dose toxicity

Components: Components: Zinc oxide: Zinc oxide: Species: Rat, male and female NOAEL: ca. 68 mg/kg Application Rotte: oral (feed) Exposure time: 13 w Number of exposures: daily Dose: 300 - 3000 - 30000 ppm Group: yes Method: OECD Test Guideline 408 GLP: no Remarks: By analogy with a product of similar composition

Species: Rat, male NOAEL: 0.0015 mg/l



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Version : 2 - 1 / USA	Date of printing :12/06/2016	Version : 2 - 1 / USA	Date of printing :12/06/2016
Application Route: Inhalation Exposure time: 13 w Number of exposures: 6 h/day, 5 days/week Dose: 0,3 - 1,5 - 4,5 mg/m3		Toxicity to fish :	Remarks: For this material no values were determined. The classification is based on read across data analogous substances.
Group: yes		Zinc oxide:	
Method: OECD Test Guideline 413 GLP: yes		Toxicity to fish :	(Ceriodaphnia dubia (water flea)): 0.67 mg/l Exposure time: 48 h Remarks: pH <7
Species: Rat, male and female NOAEL: 57 mg/kg Application Route: Drinking water Exposure time: 1 a		Toxicity to algae :	(Selenastrum capricomutum (green algae)): 0.21 mg/l Exposure time: 72 h Remarks: pH >7-8,5
Number of exposures: continuously Dose: 57 - 189 - 567 mg/kg Group: yes		M-Factor (Acute aquatic : toxicity)	1
Method: OECD Test Guideline 426 GLP: yes Remarks: By analogy with a product of similar compo	sition	M-Factor (Chronic aquatic : toxicity)	1
On a land Dat		Aluminium oxide:	
Species: Rat LOAEL: 0.070 mg/l Application Route: Inhalation Exposure time: 6 m Number of exposures: 6 hr/day; 5 days a week Dose: 15-30-507-010 mg Al/m3 Method: OECD Test Guideline 413			NOEC (Salmo trutta (brown trout)): > 0.072 mg/l Exposure time: 96 h Test Type: semi-static test Analytical monitoring: yes Method: OECD Test Guideline 203 GLP: yes
GLP: No information available. Application Route: Skin contact Remarks: The study is not necessary from a scientific Aspiration toxicity	; perspective.	Toxicity to daphnia and other : aquatic invertebrates	NOEC (Daphnia magna (Water flea)): > 0.071 mg/l Exposure time: 48 h Test Type: static test Analytical monitoring: yes Method: OEDD Test Guideline 202 GLP: yes
Components:			,
Aluminium oxide: No aspiration toxicity classification		Toxicity to algae :	NOEC (Pseudokirchneriella subcapitata (green algae)): >= 0.052 mg/l End point: Growth rate Exposure time: 72 h
Experience with human exposure			Test Type: static test Analytical monitoring: yes Method: OECD Test Guideline 201
Product: General Information : The possible symp labelling (see secti	toms known are those derived from the on 2).		GLP: yes EC50 (Pseudokirchneriella subcapitata (green algae)): 1.05
SECTION 12. ECOLOGICAL INFORMATION			mg/l End point: Growth rate Exposure time: 72 h
Ecotoxicity			Test Type: static test
Components:			Analytical monitoring: yes Method: OECD Test Guideline 201
Copper oxide:			GLP: yes Remarks: By analogy with a product of similar composition

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Graphite:

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Toxicity to fish (Chronic : toxicity)	NOEC (Pimephales promelas (fathead minnow)): 56.48 mg/l Exposure time: 7 d Test Type: semi-static test Analytical monitoring: yes Method: Other GLP: yes Remarks: By analogy with a product of similar composition
Toxicity to daphnia and other : aquatic invertebrates (Chronic toxicity)	NOEC (Daphnia magna (Water flea)): 0.076 mg/l Exposure time: 21 d End point: Reproduction rate Test Type: semi-static test Analytical monitoring: yes Method: OECD Test Guideline 211 GLP: yes Remarks: By analogy with a product of similar composition
Toxicity to bacteria :	GLP: Remarks: Not applicable
Toxicity to soil dwelling : organisms	Remarks: Not applicable
Plant toxicity :	Remarks: Not applicable
Sediment toxicity :	Remarks: Not applicable
Toxicity to terrestrial : organisms	Remarks: Not applicable
Graphite: Toxicity to fish :	Remarks: Test data for the substance are not available.
Persistence and degradability	
Components:	
Copper oxide: Biodegradability	Remarks: The methods for determining biodegradability are not applicable to inorganic substances.
Zinc oxide: Biodegradability :	Remarks: The methods for determining biodegradability are not applicable to inorganic substances.
Aluminium oxide: Biodegradability :	Remarks: Not applicable

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Biodegradability	:	Remarks: The methods for determining biodegradability are not applicable to inorganic substances.
Bioaccumulative potential		
Components:		
Copper oxide:		
Bioaccumulation	:	Remarks: Not applicable
Zinc oxide:		
Bioaccumulation	:	Remarks: Not applicable
Aluminium oxide:		
Bioaccumulation	:	Remarks: Not applicable
Graphite:		
Bioaccumulation	:	Remarks: Test data for the substance are not available.
Mobility in soil		
Components:		
Copper oxide:		
Distribution among environmental compartments	:	Remarks: After release, adsorbs onto soil.
Zinc oxide:		
Distribution among environmental compartments		Medium: water - soil log Koc: 2.2
Aluminium oxide:		
Distribution among environmental compartments	:	Remarks: Not applicable
Graphite:		
Distribution among	:	Remarks: Test data for the substance are not available.
environmental compartments		
Other adverse effects		
Components:		
Copper oxide:		
Results of PBT and vPvB assessment	:	Remarks: Not relevant for inorganic substances

Additional ecological information : slightly water endangering



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Zinc oxide:		
Results of PBT and vPvB assessment	:	Remarks: Not relevant for inorganic substances
Additional ecological information	:	water endangering
Aluminium oxide:		
Environmental fate and pathways	:	not available
Results of PBT and vPvB assessment	:	Remarks: Not applicable
Additional ecological information	:	Do not allow to enter ground water, waterways or waste water.
Graphite:		
Results of PBT and vPvB assessment	:	Remarks: Not relevant for inorganic substances
Additional ecological information	:	none

#### SECTION 13. DISPOSAL CONSIDERATIONS

RCRA - Resource Conservation and Recovery	:	Processing, use or contamination of this product may change the waste management options.
Authorization Act		State and local disposal regulations may differ from federal disposal regulations.
Waste from residues	:	Dispose of this product in accordance with applicable local, state and federal regulations. Recover metal components by reprocessing whenever possible.
Contaminated packaging	:	Dispose of as unused product.

DOT Regulation: Proper shipping name: Hazard class: Environmentally hazardous substances, solid, n.o.s. Packing group: UN/NA-number UN 3077 Primary hazard class:

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	Zinc compounds	Not Assigned	35 %
	Zinc powder (pyrophoric)	7440-66-6	28 %

The components of this product are reported in the following inventories: All components of this product are listed or excluded from TSCA listing on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) Inventory.

#### SECTION 16. OTHER INFORMATION

#### Full text of other abbreviations

Filter to the order the order to the orde

#### Further information

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Version : 2 - 1 / USA	Date of printing :12/06/2016
Technical Name:	zinc oxide Copper oxide
ΙΑΤΑ	
Proper shipping name: Class: Packing group: UN/ID number: Primary risk: Remarks: Hazard inducer(s):	Environmentally hazardous substance, solid, n.o.s. 9 WI UN 3077 9 Shipment permitted zinc oxide Copper oxide
IMDG	
Proper shipping name: Class: Packing group: UN no.: Primary risk: Hazard inducer(s): Marine pollutant:	Environmentally hazardous substance, solid, n.o.s. 9 III UN 3077 9 2inc oxide Copper oxide Marine Polutant
EmS:	F-A S-F
Further information: Non-dangerous go	ood of class 9 for packagings < 5L / 5 kg $$

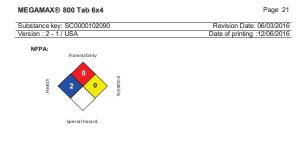
#### SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act				
CERCLA Reportable Quantity				
This material does not contain an	ny components with a CERCL	A RQ.		
SARA 304 Extremely Hazardou	is Substances Reportable 0	Quantity		
This material does not contain an	ny components with a section	304 EHS RQ.		
SARA 311/312 Hazards	Acute Health Hazard Chronic Health Hazard			
SARA 302 :	No chemicals in this materia requirements of SARA Title		orting	
SARA 313 :	This product contains the c which are subject to the su Section 313 of the Superfun Reauthorization Act of 1986 40 CFR Part 372:	oplier notification require d Amendments and	ements of	
	Copper Compound	Not Assigned	70 %	
	Copper	7440-50-8	56 %	

#### SAFETY DATA SHEET

CLARIANT

of



Revision Date

: 06/03/2016

This information corresponds to the present state of our knowledge and is intended as a general description of our products and their possible applications. Clariant makes no warranties, express or implied, as to the information's accuracy, adequacy, sufficiency or freedom from defect and assumes no liability in connection with any use of this information. Any user of this product is responsible for determining the suitability of Clarian's products for its particular application. NO EXPRESS OR IMPUED WARRANTY IS MADE OF THE MERCHANTABILITY, SUITABILITY, FITNESS FOR A PARTOCULAR PURPOSE OR OTHERWISE OF ANY PRODUCT OR SERVICE. Nothing included in this information waives any of Clariant's General Terms and Conditions of Sale, which control unless it agrees otherwise in writing. Any existing intellectualindustrial property rights must be observed. Due to possible changes. Material Salety Data Sheets products and anglicable national and international regulations and laws, the status of our products could change. Material Salety Data Sheets products, are available upon request and are provided in compliance with applicable law. You should obtain and review the applicable Material Salety Data Sheets information before handling any of these products. For additional information, please contact Clariant.

US / EN



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#### ReforMax® 100 Tab 4.7x4.7

Substance key: SC0000101	020 Revision Date: 03/07/2018
Version : 2 - 4 / USA	Date of printing :01/26/2022
SECTION 1. IDENTIFICATION	1
Identification of the company:	Clariant Produkte (Deutschland) GmbH Arabellastrasse 4a München, 81925 Telephone No.: +49 (0)89/5110-0 Information of the substance/preparation: Product Stewardship, +1-704-331-7710
	Emergency tel. number: +1 800-424-9300 CHEMTREC
Trade name: Material number:	ReforMax® 100 Tab 4.7x4.7 246543
Primary product use:	Catalyst
Chemical family:	Mixture of nickel oxide and other inorganic compounds
SECTION 2. HAZARDS IDEN	TIFICATION
GHS classification in ac	cordance with 29 CFR 1910.1200
Skin sensitisation	: Category 1

GHS classification in accord Skin sensitisation	lan :	ce with 29 CFR 1910.1200 Category 1
Carcinogenicity (Inhalation)	:	Category 1A
Specific target organ toxicity - repeated exposure	:	Category 1
GHS label elements Hazard pictograms	:	♦
Signal word	:	Danger
Hazard statements	:	H317 May cause an allergic skin reaction. H350i May cause cancer by inhalation.

#### H372 Causes damage to organs through prolonged or repeated exposure. Precautionary statements

Prevention: Prevention: P201 Obtain special instructions before use. P202 Do not handle until all safety precautions have been read and understood. P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray. P264 Wash skin thoroughy after handling. P270 Do not eatl, drink or smoke when using this product.

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Substance key: SC0000101020	)	Revision Date: 03/07/2018
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		Wash clothing before reuse. If skin irritation occurs: Get medical advice/ attention.
In case of eye contact	:	Do not rub affected area. Rinse immediately with plenty of lukewarm water, also under the eyelids, for at least 15 minutes. Obtain medical attention.
If swallowed	:	Do NOT induce vomiting. Call your local Poison Control Center (In the U.S. call 1-800- 222-1222).
Most important symptoms and effects, both acute and delayed	:	None known.
Notes to physician	:	Skin sensitization may lead to chronic eczema "nickel itch". Lung damage is cumulative and may include cancer of lung, nasal cavity and larynx. May cause pulmonary eosinophilia (Loeffler's Syndrome).

#### SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	:	The product itself does not burn. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	:	Do not use a solid water stream as it may scatter and spread fire.
Specific hazards during firefighting	:	In case of fire can be formed: Breathable nickel oxide dust
Further information	:	Wear full protective clothing and NIOSH/MSHA-approved positive pressure, self-contained breathing apparatus. Evacuate area. Fight fire with normal precautions from a reasonable distance.
Special protective equipment for firefighters	:	In the event of fire, wear self-contained breathing apparatus.

#### SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	Ensure adequate ventilation. Avoid dust formation. Use personal protective equipment. Avoid contact with skin, eyes and clothing. Refer to Section 8 for more information.
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/ersion : 2 - 4 / USA	Date of printing :01/26/2022
	P272 Contaminated work clothing should not be allowed out of the workplace. P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
	Response: P302 + P352 IF ON SKIN: Wash with plenty of soap and water. P308 + P313 IF exposed or concerned: Get medical advice/ attention. P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention. P363 Wash contaminated clothing before reuse.
	Storage: P405 Store locked up.
	Disposal: P501 Dispose of contents/ container to an approved waste disposal plant.
Other hazards None known.	
SECTION 3. COMPOSITION/INFOR	MATION ON INGREDIENTS
Substance / Mixture	Mixture
Substance name	Mixture of nickel oxide and other inorganic compounds

#### Substa

Hazardous components Chemical name	CAS-No.	Concentration (% w/w)
Nickel monoxide	1313-99-1	50 - 60
Aluminium oxide	1344-28-1	15 - 25
Magnesium oxide	1309-48-4	2 - 10
Amorphous silicon dioxide	7631-86-9	2 - 10
Calcium oxide	1305-78-8	1 - 10
Rare earth oxides	68188-83-0	1 - 10

#### SECTION 4. FIRST AID MEASURES

:	Take off all contaminated clothing immediately. Show this safety data sheet to the doctor in attendance.
:	

# INHALATION: If exposed to excessive levels of dust or fumes, remove to fresh air and get medical attention. Get medical attention if cough and other symptoms develop. Remove to fresh air.

In case of skin contact

General advice

If inhaled

# Avoid contact with skin. Wash area with mild soap and copious amounts of water. Remove contaminated clothing and shoes.

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Environmental precautions	:	Do not flush into surface water or sanitary sewer system.
Methods and materials for containment and cleaning up	:	Sweep up or vacuum up spillage and collect in suitable container for disposal.
SECTION 7. HANDLING AND STO	R.	AGE
Advice on protection against fire and explosion	:	In case of inappropriate handling, spent catalyst can be self- heating when in contact with air.
Advice on safe handling	:	Avoid contact with skin, eyes and clothing. Do not breath dust/ time/ gas/ mist/ vapours/ spray. Minimize dust generation and accumulation. Used catalysts may have different hazards or properties than the original product. This SDS does not apply to used catalysts.
Conditions for safe storage	:	Keep tightly closed in a dry and cool place.
Technical measures/Precautions	:	Keep container tightly closed and dry.
		Keep container tightly closed. Keep container dry.
Materials to avoid	:	No materials to be especially mentioned.
Further information on storage stability	:	Stable under recommended storage conditions.

#### SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Aluminium oxide	1344-28-1	TWA (total dust)	15 mg/m3	OSHA Z-1
		TWA (respirable fraction)	5 mg/m3	OSHA Z-1
		TWA (Total dust)	10 mg/m3	OSHA P0
		TWA (respirable dust fraction)	5 mg/m3	OSHA P0
		TWA (Respirable fraction)	1 mg/m3 (Aluminium)	ACGIH
Magnesium oxide	1309-48-4	TWA	10 mg/m3	ACGIH



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J/m3 OSHA Z-1
J/m3 OSHA P0
lion OSHA Z-3
/m3 / OSHA Z-3 2 I)
m3 ACGIH
m3 NIOSH RE
m3 OSHA 7-1
m3 OSHA Z-1

respirable fraction and 15 mg/m3 for total dust. ACGIH exposure guidelines of less than 3

mg/m3 (respirable) and 10 mg/m3 (inhalable) have been established for particles (insoluble/poorly soluble) not otherwise specified (PNOS).

Engineerin

ineering measures	Use ventilation adequate to keep exposures below recommended exposure limits. See the safety datasheet.	

#### Personal protective equipment

Respiratory protection	<ul> <li>Wear NIOSH approved particulate filtering respirator rated N, R, or P95 or 100 or equivalent in the absence of proper environmental control. Type of respirator depends on level of exposure.</li> </ul>
Hand protection	
Remarks	: butyl-rubber PVC Viton (R) Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.
Eye protection	: Follow facility guidelines in the absence of dusts.

Follow facility guidelines in the absence of dusts. Tightly fitting safety goggles If respiratory protection is needed under dusty conditions, a

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products



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Solubility(ies) Water solubility	:	insoluble
Solubility in other solvents	:	not tested.
Partition coefficient: n- octanol/water	:	Not applicable
Auto-ignition temperature	:	Not applicable
Viscosity Viscosity, dynamic	:	Not applicable
Viscosity, kinematic	:	Not applicable
Flow time	:	Not applicable
Explosive properties	:	no data available
Oxidizing properties	:	not tested.
Sublimation point	:	not determined
Dust explosion class	:	not capable of dust explosion
Minimum ignition energy	:	not tested.
Particle size	:	not tested.
SECTION 10. STABILITY AND REA	VC.	TIVITY
Reactivity	:	No dangerous reaction known under conditions of normal use.

#### Chemical stability : The product is chemically stable. The product is dreminarily stable. Interpretation of carbon monoide. Nickel tetracarboly Ni(CO)4 in the presence of carbon monoide. Nickel carbony is highly flammable and highly toxic and can cause cyanosis and chemical pneumonia which can be fatal. Symptoms may be delayded for several hous or days. Extreme care and specialized handling is required if carbon monoxide is present in the catalyst process. Hazardous reactions are possible at temperatures depending on pressure and carbon monoxide concentrations. Possibility of hazardous reactions Conditions to avoid : Avoid dust formation. Incompatible materials : Acids and bases : No decomposition if stored and applied as directed. In case of fire hazardous decomposition products may be Hazardous decomposition

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		full facepiece respirator is recommended to provide both eye and respiratory protection.
Skin and body protection	:	Wear protective clothing, including long sleeves and gloves, to prevent skin contact. Thoroughly wash clothing before reuse.
Hygiene measures	:	Keep working clothes separately. Keep away from food, drink and animal feedingstuffs. Wash hands before breaks and immediately after handling the product. Preventive skin protection (protective ointment for the skin)
ECTION 9. PHYSICAL AND CH	EMI	CAL PROPERTIES
Appearance	:	spheres
Colour	:	grey, to, white
Odour	:	odourless
Odour Threshold	:	Not relevant
pH	:	Not applicable insoluble
Melting point	:	> 1,000 °C
Boiling point	:	Not applicable
Flash point	:	Not applicable
Evaporation rate	:	Not applicable
Self-ignition	:	not tested.
Burning number	:	not determined
Upper explosion limit / upper flammability limit	:	not tested.
Lower explosion limit / Lower flammability limit	:	not tested.
Vapour pressure	:	Not applicable
Relative vapour density	:	Not applicable
Relative density	:	not tested.

: 1.1 g/cm3 (30 °C)

: 1,200 kg/m3

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Magnesium oxide:

Density

Bulk density

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		produced such as: see heading 5
SECTION 11. TOXICOLOGICAL	INF	ORMATION
Information on likely routes	of	exposure
Eye contact Skin contact Ingestion Inhalation		
Acute toxicity		
Product:		
Acute oral toxicity	:	Acute toxicity estimate: > 5,000 mg/kg Method: Calculation method
Acute inhalation toxicity	:	Acute toxicity estimate: > 10 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: Calculation method
Acute dermal toxicity	:	Remarks: no data available
Components:		
Nickel monoxide:		
Acute oral toxicity	:	LD50 (Rat, male and female): > 5,000 mg/kg Method: OECD Test Guideline 401 GLP: yes
Acute inhalation toxicity	:	LC50 (Rat, male and female): > 5.08 mg/l Exposure time: 4 h Method: OECD Test Guideline 403 GLP: yes
Acute dermal toxicity	:	Remarks: not required
Aluminium oxide:		
Acute oral toxicity	:	LD50 (Rat, male and female): > 10,000 mg/kg Method: OECD Test Guideline 401 GLP: No information available.
Acute inhalation toxicity	:	LC50 (Rat, male and female): > 2.3 mg/l Exposure time: 4 h Method: OECD Test Guideline 403 GLP: yes
Acute dermal toxicity	:	Remarks: Not applicable



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Acute oral toxicity	:	LD50 (Rat, male and female): 3,870 - 3,990 mg/kg
Acute inhalation toxicity	:	LC50 (Rat, male and female): > 1.5 mg/l Exposure time: 4 h Method: OECD Test Guideline 403 GLP: yes Remarks: By analogy with a product of similar composition
Acute dermal toxicity	:	Remarks: Not applicable Product dust may be irritating to eyes, skin and respiratory system.
Amorphous silicon dioxide:		
Acute oral toxicity	:	LD50 (Rat, male and female): > 5,000 mg/kg Method: OECD Test Guideline 401 GLP: yes
Acute inhalation toxicity		LC50 (Rat, male and female): > 2.08 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: OECD Test Guideline 403 GJLP: yes
Acute dermal toxicity	:	LD50 (Rabbit): > 2,000 mg/kg Method: Other GLP: no
Calcium oxide:		
	:	LD50 (Rat, female): > 2,000 mg/kg Method: OECD Test Guideline 425
Acute inhalation toxicity	:	Remarks: no data available
Acute dermal toxicity	:	Remarks: no data available
Skin corrosion/irritation		
Product:		
Remarks: no data available		
Components:		
Nickel monoxide:		
Species: Rabbit Exposure time: 4 h Assessment: No skin irritation Method: OECD Test Guideline - Result: Mild skin irritation GLP: yes	40	4

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Aluminium oxide

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Magnesium oxide: Species: rabbit eye Result: No eye irritation Exposure time: 24 h Method: OECD Test Guideline 405 GLP: yes Remarks: By analogy with a product of similar composition

Remarks: May cause eye or skin irritation with susceptible persons.

# Amorphous silicon dioxide:

Result: No eye irritation Exposure time: 24 h Method: OECD Test Guideline 405 GLP: yes

Calcium oxide: Species: Rabbit Result: irritating Assessment: Risk of serious damage to eyes. Method: OECD Test Guideline 405

#### Respiratory or skin sensitisation Product: Remarks: no data available

Components:

Nickel monoxide: Exposure routes: Skin contact Species: Humans Result: Causes sensitisation. Remarks: By analogy with a product of similar composition

Aluminium oxide: Aluminium oxide: Test Type: Draize Test Exposure routes: Dermal Species: Guinea pig Method: Draize Test Result: non-sensitizing GLP: no

Test Type: Respiratory system Exposure routes: inhalation (dust/mist/fume) Species: Mouse Method: Other Result: non-sensitizing GLP: no

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Species: Rabbit Exposure time: 24 h Method: OECD Test Guideline 404 Result: No skin irritation GLP: No information available.

## Magnesium oxide:

Magnesium oxtoc: Species: Humans Exposure time: 15 min Method: REGULATION (CC) No 761/2009, ANNEX III, B46 Result: No skin irritation GLP: yes Remarks: By analogy with a product of similar composition

Remarks: May cause skin and eye irritation in susceptible persons

Amorphous silicon dioxide: Amorphous silicon dioxide: Species: Rabbit Exposure time: 4 h Method: OECD Test Guideline 404 Result: No skin irritation GLP: yes

Calcium oxide Species: Rabbit Method: Other Result: Irritating to skin. Remarks: By analogy with a product of similar composition

Serious eye damage/eye irritation Product: Remarks: no data available

#### Components:

Nickel monoxide: ruccet monoxide: Species: rabbit eye Result: Mild eye irritation Exposure time: 4 d Assessment: No eye irritation Method: OECD Test Guideline 405 GLP: yes

Aluminium oxide: Species: rabbit eye Result: No eye irritation Method: FDA guideline GLP: No information available.

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Magnesium oxide: Test Type: Guinea pig maximization test Exposure routes: Dermal

Species: Guinea pig Method: OECD Test Guideline 406 Result: non-sensitizing GLP: yes Remarks: By analogy with a product of similar composition

Test Type: Mouse local lymphnode assay Exposure routes: Dermal Species: Mouse Method: OECD Test Guideline 429 Result: Sensitising GLP: yes Remarks: By analogy with a product of similar composition

Amorphous silicon dioxide: Remarks: Not relevant

Calcium oxide: Remarks: no data available

Assessment:

Germ cell mutagenicity

Components:

Nickel monoxide: Genotoxicity in vitro

Test Type: In vitro gene mutation study in mammalian cells Test system: mouse lymphoma cells Concentration: 13. - 10 mM Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 476 Result: negative GLP: yes

: In vitro tests did not show mutagenic effects

Causes skin irritation., Causes serious eye damage.

Germ cell mutagenicity -Assessment

#### Aluminium oxide:

Genotoxicity in vitro

Test Type: In vitro gene mutation study in mammalian cells Test system: mouse lymphoma cells Concentration: 6,1 - 780 µg/ml Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 476 Result: negative GLP: yes



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	Remarks: By analogy with a product of similar composition	Assessment	
	Remarks: By analogy with a product of similar composition	Assessment	
Genotoxicity in vivo	: Test Type: Chromosome Aberration Test	Amorphous silicon dioxide:	
	Species: Rat (female)		Test Type: Chromosome aberration test in vitro
	Strain: wistar Cell type: Bone marrow cells Application Route: crail (gavage) Exposure time: Single exposure Dose: 500 - 1000 - 2000 mg/kg Method: OECD Test Guideline 475 Result: positive	Genoloxicity in viuo	Test rype: Clinoinsonine adentation test in vituo Test system: Chinese hamster ovary cells Concentration: 38 - 1000 µg/ml Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 473 Result: negative GLP: yes
	GLP: No information available.		Test Type: In vitro gene mutation study in mammalian cells
	Test Type: Micronucleus test Species: Rat (female) Strain: wistar Cell type: Bone marrow cells Application Route: cra1 (gavage) Exposure time: Single exposure Dose: 500 - 1000 - 2000 mg/kg		Test system: Chinese hamster ovary cells Concentration: 10 - 500 µg/ml Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 476 Result: negative GLP: yes
	Method: OECD Test Guideline 474		Test Type: Ames test
	Result: positive		Test system: Salmonella typhimurium
	GLP: No information available.		Concentration: 667 - 10000 µg/plate Metabolic activation: with and without metabolic activation
Germ cell mutagenicity - Assessment	: Weight of evidence does not support classification as a germ cell mutagen.		Method: OECD Test Guideline 471 Result: negative GLP: yes
Magnesium oxide:		Genotoxicity in vivo :	Test Type: HGPRT assay
Genotoxicity in vitro	Test Type: Ames test Test Type: Ames test Method: Ames test Result: negative GLP: No information available. Test Type: Chromosome aberration test in vitro Test system: Human lymphocytes Concentration: 0.125 - 41.7 µg ub/ml		Species: Rat (male) Strain: Fischer F344 Application Route: Inhalation Exposure time: 13 w, 6 h/d, 5 d/wk Dose: ca. 50 mg/m3 Method: Other Result: negative GLP: No information available.
	Metabolic activation: with and without metabolic activation Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 473 Result: negative	Germ cell mutagenicity - : Assessment	It is concluded that the product is not mutagenic based on evaluation of several mutagenicity tests.
	GLP: yes	Calcium oxide:	
	Remarks: By analogy with a product of similar composition		Test Type: Ames test
	Test Type: In vitro gene mutation study in mammalian cells Test system: mouse lymphoma cells Concentration: 0.3 % Mg Metabolic activation: with and without metabolic activation		Test system: Salmonelia typhimurium Metabolic activation: with and without metabolic activation Method: DECD Test Guideline 471 Result: negative
	Method: DECD Test Guideline 476 Result: negative GLP: no Remarks: By analogy with a product of similar composition	Germ cell mutagenicity - : Assessment	In vitro tests did not show mutagenic effects

Germ cell mutagenicity - . Not mutagenic in Ames Test

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Carcinogenicity				Method: OECD Test Guideline 416
Components:				GLP: yes Remarks: By analogy with a product of similar composition
Nickel monoxide:				
Carcinogenicity - Assessment	: May cause cancer by inhalation.			Test Type: Fertility/early embryonic development Species: Rat, male and female Strain: Fischer F344
Aluminium oxide:				Application Route: Inhalation Dose: 0,02-0,05-0,1-0,2-0,4 mgNi/m3
Carcinogenicity - Assessment	: Carcinogenicity classification not possible from current	data.		Duration of Single Treatment: 6 h Frequency of Treatment: 5 days/week General Toxicity - Parent: NOAEL: 0 mg/l Method: Other
Magnesium oxide:				GLP: No information available.
Carcinogenicity - Assessment	: Not classifiable as a human carcinogen.			Remarks: By analogy with a product of similar composition
Amorphous silicon dioxide:			Effects on foetal : development	Test Type: Two-generation study Species: Rat, male and female Strain: Spraque-Dawley
Carcinogenicity - Assessment	: Not classifiable as a human carcinogen.			Application Route: oral (gavage) Dose: 0,2-0,6-1,1-2,2 mgNl/kg General Toxicity Maternal: NOAEL: 2.2 mg/kg body weight
Calcium oxide:				Teratogenicity: NOAEL: 2.2 mg/kg body weight
Species: Rat, (male and femal Application Route: Oral Exposure time: 104 w				Method: Other GLP: yes Remarks: By analogy with a product of similar composition
Dose: 0, 2.5 or 5 % calcium la NOAEL: 391 mg/kg bw/day Method: carcinogenicity study Remarks: By analogy with a p	,		Reproductive toxicity - Assessment	No reproductive toxicity to be expected. No teratogenic effects to be expected.
remarks. By analogy with a p	roduct of similar composition		Aluminium oxide:	
Carcinogenicity - Assessment	: Not classifiable as a human carcinogen.		Effects on fertility	Species: Rat, male and female Strain: Sprague-Dawley Application Route: Drinking water
IARC	Listed			Dose: 57 - 189 - 567 mg/kg
OSHA	Not listed			General Toxicity - Parent: NOAEL: ca. 567 mg/kg body weight General Toxicity F1: NOAEL: ca. 57 mg/kg body weight Method: Other
NTP	Listed			GLP: yes Remarks: By analogy with a product of similar composition
Reproductive toxicity			Effects on foetal	
Components:			development	Species: Rat Strain: wistar
Nickel monoxide:				Application Route: oral (gavage)
Effects on fertility	: Test Type: Two-generation study Species: Rat, male and female Strain: Spraue-Dawle Application Route: oral (gavage) Dose: 0.2-0,6-1,1-2,2 mgNikg General Toxicity - Parent: NOAEL: 2.2 mg/kg body weight General Toxicity F1: NOAEL: 2.2 mg/kg body weight General Toxicity F2: NOAEL: 2.2 mg/kg body weight	ight		Dose: 126 - 251 - 503 mg/kg Frequency of Treatment: 2 daily General Toxicity Maternal: NOAEL: > 100 mg/kg body weight Teratogenicity: NOAEL: 503 mg/kg body weight Method: OECD Test Guideline 414 C.B.P. No Information available. Remarks: By analogy with a product of similar composition
	General FUXICITY F2. NOAEL, 2.2 HIG/KG DODY WEIGHT		Reproductive toxicity -	Classification as "toxic for reproduction" is not justifiable.



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Assessment	No teratogenic effects to be expected.
Magnesium oxide:	
Effects on fertility :	Test Type: Fertility/early embryonic development Species: Rat, male and female Strain: wistar Application Route: oral (gavage) Dose: 46 - 188 - 417 mg Mg/kg General Toxicity - Parent: NOAEL: >= 690 mg/kg body weight Method: OECD Test Guideline 422 GLP: yes Remarks: By analogy with a product of similar composition
Effects on foetal : development	Species: Rat Strain: wistar Application Route: oral (gavage) Dose: 46 - 138 - 417 mg Mg/kg General Toxicity Maternai: NOAEL: >= 690 mg/kg body weight Teratogenicity: NOAEL: >= 690 mg/kg body weight Method: OECD Test Guideline 422 GLP: yes Remarks: By analogy with a product of similar composition
Reproductive toxicity - : Assessment	Classification as "toxic for reproduction" is not justifiable. Classification as "teratogenic" is not justifiable.
Amorphous silicon dioxide:	
Effects on fertility :	Test Type: One generation study Species: Rat, male and female Strain: Sprague-Dawley Application Route- oral (feed) Dose: 497 (m), 509 (f) mg/kg General Toxicity - Parent: NOAEL: 497 mg/kg body weight General Toxicity F1: NOAEL: 497 mg/kg body weight Method: OECD Test Guideline 415 GLP: no
Effects on foetal : development	Species: Rat Strain: wistar Application Route: oral (gavage) Dose: 13,5 - 62,7 - 292 - 1350mg/kg General Toxity Matemat: NoAEL: 1,350 mg/kg body weight Teratogenicity: NOAEL: 1,350 mg/kg body weight Method: OECD Test Guideline 414 GLP: no
Reproductive toxicity - : Assessment	No reproductive toxicity to be expected. No teratogenic effects to be expected.

: Test Type: Pre-natal

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Calcium oxide:

Effects on foetal

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repeated exposure

Repeated dose toxicity

Components: Nickel monoxide: Species: Rat, male and female NOAEL: 2.2 mg/kg LOAEL: 6.7 mg/kg Application Route: oral (gavage) Exposure time: 2 a Number of exposures: daily Dose: 2,2 - 6,7 - 11,2 mg/kg

Group: yes Method: Repeated dose toxicity GLP: yes Remarks: By analogy with a product of similar composition

Species: Rat, male and female NOAEL: 0.0025 mg/l Application Route: Inhalation Exposure time: 13 w Number of exposures: 6 hr/day, 5 days/week Dose: 0,6-1,2-2,5-5-10 mg/m3 Group: ves Group: yes Method: OECD Test Guideline 413 GLP: No information available

Application Route: Skin contact Remarks: not available

Aluminium oxide: Species: Rat, male and female NOAEL: 57 mg/kg Application Route: Drinking water Exposure time: 1 a Number of exposures: continuously Dose: 57 - 189 - 567 mg/kg Group: yes Method: OECD Test Guideline 426

GLP: yes Remarks: By analogy with a product of similar composition

Species: Rat LOAEL: 0.070 mg/l Application Route: Inhalation Exposure limit immandul Exposure limit immandul Number of exposures: 6 hr/day; 5 days a week Dose: 15-30-50-70-100 mg Al/m3 Method: OECD Test Guideline 413 GLP: No information available.

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	Species: Mouse, females Strain: CD1 Application Route: Oral	

Application Route: Oral Dose: 4,4; 20,4; 94,8; 440 mg/kg Developmental Toxicity: NOAEL: 440 mg/kg body weight Method: OECD Test Guideline 414 No evidence of adverse effects on sexual function and fertility, or on development, based on animal experiments. Reproductive toxicity -Assessment STOT - single exposure Components: Nickel monoxide Assessment: The substance or mixture is not classified as specific target organ toxicant, single exposure Assessment: The substance or mixture is not classified as specific target organ toxicant, single exposure. Amorphous silicon dioxide: Assessment: The substance or mixture is not classified as specific target organ toxicant, single exposure. Calcium oxide: Exposure routes: inhalation (dust/mist/fume) Assessment: The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation. Remarks: Based on human experience. STOT - repeated exposure

Components: Nickel monoxide: Assessment: Causes damage to organs through prolonged or repeated exposure

Magnesium oxide: Assessment: The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Amorphous silicon dioxide: Assessment: The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Calcium oxide Assessment: The substance or mixture is not classified as specific target organ toxicant,

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Application Route: Skin contact Remarks: The study is not necessary from a scientific perspective

Magnesium oxide: Species: Rat, male and female NOAEL: ca. 690 mg/kg Application Route: oral (gavage) Exposure time: 29 d (m), 41-45 (f) Number of exposures: daily Dose: 46 - 138 - 417 mg Mg/kg Group: yes Method: OEOD Test Guideline 422 GLP: yes Remarks: By analogy with a product of similar composition

Species: Rat Application Route: inhalation (dust/mist/fume) Exposure time: 1 - 6 m Method: Repeated Dose Toxicity (chronic Toxicity) Target Organs: Bronchia, Respiratory system Symptoms: Irritability, Fibroma, Oedema

Application Route: Skin contact Remarks: This information is not available.

Amorphous silicon dioxide:

Amorphous silicon dioxide: Species: Rat, male and female NOAEL: 4,000 - 4,500 mg/kg Application Route: oral (feed) Exposure time: 13 w Number of exposures: continuously Dose: 0,5, - 2, -6,7% SI in diet Group: yes Method: OECD Test Guideline 408 GLP: yes

Species: Rat, male and female NOAEL: 0.0013 mg/l LOAEL: 0.0059 mg/l Application Route: Inhalation Exposure time: 13 w Number of exposures: 6 hr/day; 5 days a week Dose: 1,3 - 5,9 - 31 mg/m3 Group: yes Method: OECD Test Guideline 413 GLP: yes

Application Route: Skin contact Remarks: This information is not available.



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Toxicity to fish :	EC50 (Oncorhynchus mykiss (rainbow trout)): 15.3 mg/l Ni Exposure time: 96 h
	Test Type: semi-static test Analytical monitoring: yes Method: Other
	GLP: No information available.
	Remarks: By analogy with a product of similar composition
Toxicity to daphnia and other : aquatic invertebrates	Ni
	Exposure time: 48 h
	Test Type: static test Analytical monitoring: yes
	Method: Other
	GLP: No information available.
	Remarks: By analogy with a product of similar composition
Toxicity to algae	EC50 (Pseudokirchneriella subcapitata (green algae)): 0.0815 - 0.148 mg/l
	Ni > 81,5 µg/l - < 148 µg/l
	End point: Growth rate
	Exposure time: 72 h
	Test Type: static test Analytical monitoring: yes
	Method: OECD Test Guideline 201
	GLP: No information available.
	Remarks: By analogy with a product of similar composition
	NOEC (Pseudokirchneriella subcapitata (green algae)): 0.0166 - 0.0523 mg/l
	Ni < 16.6 µg/l - < 52.3 µg/l
	End point: Growth rate
	Exposure time: 72 h
	Test Type: static test Analytical monitoring: yes
	Method: OECD Test Guideline 201
	GLP: No information available.
	Remarks: By analogy with a product of similar composition
Toxicity to fish (Chronic : toxicity)	<ul> <li>NOEC (Cyprinodon variegatus (sheepshead minnow)): 21.7 mg/l Ni</li> </ul>
,,	Exposure time: 28 d
	Test Type: flow-through test Analytical monitoring: yes
	Method: Other
	GLP: yes
	Remarks: By analogy with a product of similar composition
	NOEC (Pimephales promelas (fathead minnow)): 0.057 mg/l
	Ni
	Exposure time: 32 d

Exposure time: 32 d Test Type: flow-through test

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x4.7	Page 24
1020	Revision Date: 03/07/2018
	Date of printing :01/26/2022
End Ana Metti GLF Ren NOE Ni > Exp End Ana Mett GLF	Exposure time: 4 d End point: Growth Analytical monitoring: yes Method: Other GLP: No information available. Remarks: By analogy with a product of similar composition NOEC (Lycopersicon esculentum): 11 - 625 mg/kg N) > 11 - 625 Exposure time: 21 d End point: Growth Analytical monitoring: no data available Method: Other GLP: No information available.
: (Hy Ana Sed Exp Basi Mett GLF Rem (Lui	(Hyalella azteca (Scud)): 139 - 1792 mg/kg dry weight (d.w.) Analytical monitoring: yes Sediment: Natural sediment Exposure duration: 28 d Basis for effect: mortality Method: Other GLP: no Remarks: By analogy with a product of similar composition (Lumbriculus variegatus (Worm)): 554 - 4865 mg/kg dry
Ana Sed Exp Basi Meti GLF	weight (d.w.) Analytical monitoring: yes Sediment: Natural sediment Exposure duration: 28 d Basis for effect: Growth Method: Other GLP: no Remarks: By analogy with a product of similar composition
Exp Meti GLP Rem	NOEC (Anas platyrhynchos (Mallard duck)): 800 ppmNi Exposure time: 90 d Method: Other GLP: No information available. Remarks: Information given is based on data on the components and the ecotoxicology of similar products.
Exp Test Ana Met	NOEC (Salmo trutta (brown trout)): > 0.072 mg/l Exposure time: 96 h Test Type: semi-static test Analytical monitoring: yes Method: OECD Test Guideline 203 GLP: yes
Exp	NOEC (Daphnia magna (Water flea)): > 0.071 mg/l Exposure time: 48 h Test Type: static test

ReforMax® 100 Tab 4.7x4.7 Р Substance key: SC0000101020 Version : 2 - 4 / USA Revision Date: 03/ Date of printing :01/ Calcium oxide: Remarks: This information is not available. Repeated dose toxicity - : Causes skin irritation., Causes serious eye damage. Assessment Aspiration toxicity Components: Nickel monoxide: No aspiration toxicity classification Aluminium oxide: No aspiration toxicity classification Magnesium oxide: No aspiration toxicity classification Amorphous silicon dioxide: No aspiration toxicity classification

Calcium oxide: no data available

#### Further information

Product: Remarks: No data is available on the product itself. Handle in accordance with good industrial hygiene and safety practice.

#### SECTION 12. ECOLOGICAL INFORMATION Ecotoxicity

Product: Toxicity to fish

Toxicity to daphnia and other : aquatic invertebrates Toxicity to algae

Remarks: no data available

Remarks: no data available

Remarks: no data available

#### Components:

Nickel monoxide:

## SAFETY DATA SHEET ReforMax® 100 Tab 4.7x4.7

Plant toxicity



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0.0000000000000000000000000000000000000	
Substance key: SC0000101020 Version : 2 - 4 / USA	Revision Date: 03/07/2018 Date of printing :01/26/2022
Version . 2 - 47 03A	Date of printing .0 1/20/2022
	Analytical monitoring: yes Method: Other GLP: No information available. Remarks: By analogy with a product of similar composition
Toxicity to daphnia and other : aquatic invertebrates (Chronic toxicity)	NOEC (Ceriodaphnia spec.): 0.0083 - 0.0386 mg/l Ni < 8,3 - 38,6 µg/l End point: Reproduction rate Exposure time: 10 d Test Type: static test Analytical monitoring: yes Method: OECD Test Guideline 211 GLP: No information available. Remarks: By analogy with a product of similar composition
	NOEC (Ceriodaphnia spec.): 0.0053 - 0.0153 mg/l Ni End point: Reproduction rate Exposure time: 7 d Test Type: semi-static test Analytical monitoring: yes Method: Other GLP: no Remarks: By analogy with a product of similar composition
Toxicity to microorganisms :	EC50 (activated sludge): 33 mg/l Ni End point: Bacteria toxicity (growth inhibition) Exposure time: 0.5 h Test Type: aquatic Analytical monitoring; no data available Method: 150 8192 GLP: No information available. Remarks: By analogy with a product of similar composition
Toxicity to soil dwelling : organisms	EC10 (Eisenia fetida (earthworms)): 47.3 - 1,140 mg/kg, Ni > 47,3 - < 1140

47,3 - <1140 Exposure time: 28 d End point: Reproduction Method: Other GLP: No Information available. Remarks: By analogy with a product of similar composition

Test Type: artificial soil NGEC (Folsomia candida): 36.4 - 1,140 mg/kg, Ni > 36.4 - < 1.140 Exposure time: 28 d End point: Reproduction Method: ISO 11267 G.P. No information available. Remarks: By analogy with a product of similar composition

NOEC (Hordeum vulgare): 32 - 1,127 mg/kg Ni > 32 - < 1.127</li>



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## ReforMax® 100 Tab 4.7x4.7

ision : 2 - 4 / USA Date of printing :01/26/2 Analytical monitoring: yes Method: OECD Test Guideline 202 GLP: yes Toxicity to algae : NOEC (Pseudokirchneriella subcapitata (green algae)): >= 0.62 mg/ End point: Growth rate Exposure time: 72 h Test Type: static test Analytical monitoring: yes Method: OECD Test Guideline 201 GLP: yes ECS0 (Pseudokirchneriella subcapitata (green algae)): 1.0: mg/ End point: Growth rate
Method: OECD Test Guideline 202       GLP: yes       Toxicity to algae     : NOEC (Pseudokirchneriella subcapitata (green algae)): >= 0.052 mg/l End point: Growth rate Exposure time: 72 h Test Type: static test Analytical monitoring: yes Method: OECD Test Guideline 201 GLP: yes       ECS0 (Pseudokirchneriella subcapitata (green algae)): 1.0: mg/l
0.052 mg/l End point: Growth rate Exposure time: 72 h Test Type: static test Analytical monitoring: yes Method: OECD Test Guideline 201 GLP: yes EC50 (Pseudokirchneriella subcapitata (green algae)): 1.0: mg/l
mg/l
End point: Grown Tate Exposure time: 72 h Test Type: static test Analytical monitoring: yes Method: OECD Test Guideline 201 GLP: yes Remarks: By analogy with a product of similar composition
Toxicity to fish (Chronic : NOEC (Pimephales promelas (fathead minnow)): 56.48 m Exposure time: 7 d Test Type: semi-static test Analytical monitoring: yes Method: Other GLP: yes Remarks: By analogy with a product of similar composition
Toxicity to daphnia and other aquatic invertebrates     : NOEC (Daphnia magna (Water flea)): 0.076 mg/l End point: Reproduction rate       (Chronic toxicity)     Exposure time: 21 d Test Type: semi-static test Analytical monitoring: yes Method: OECD Test Guideline 211 GLP; yes       Remarks: By analogy with a product of similar composition
Toxicity to microorganisms : GLP: Remarks: Not applicable
Toxicity to soil dwelling : Remarks: Not applicable organisms
Plant toxicity : Remarks: Not applicable
Sediment toxicity : Remarks: Not applicable
Toxicity to terrestrial : Remarks: Not applicable organisms

#### SAFETY DATA SHEET



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	Test Type: aquatic Analytical monitoring: yes Method: OECD Test Guideline 209 GLP: yes Remarks: By analogy with a product of similar composition
Toxicity to soil dwelling : organisms	Test Type: artificial soil NOEC (Collembola (soil-dwelling springtail)): ca. 476 mg/kg Exposure time: 63 d End point: mortality Method: Other GLP: No information available. Remarks: By analogy with a product of similar composition
Plant toxicity :	Remarks: Not applicable
Sediment toxicity :	Remarks: Not applicable
Toxicity to terrestrial : organisms	Remarks: Not applicable
Amorphous silicon dioxide:	
Toxicity to fish :	LL0 (Brachydanio rerio (zebrafish)): 10,000 mg/l Exposure time: 96 h Test Type: static test Analytical monitoring: no Method: OECD Test Guideline 203 GLP: yes Remarks: The details of the toxic effect relate to the nominal concentration.
Toxicity to daphnia and other : aquatic invertebrates	EL50 (Daphnia magna (Water flea)): > 1.000 mg/l Exposure time: 48 h Test Type: static test Analytical monitoring: no Method: OECD Test Guideline 202 GLP: yes Remarks: The details of the toxic effect relate to the nominal concentration.
Toxicity to algae :	EL50 (Desmodesmus subspicatus (green algae)): > 10,000 mgl End point: Growth rate Exposure time: 72 h Test Type: static test Analytical monitoring: no Method: OECD Test Guideline 201 GLP: yes Remarks: By analogy with a product of similar composition The details of the toxic effect relate to the nominal concentration.

#### SAFETY DATA SHEET



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ubstance key: SC0000101020	Revision Date: 03/07/2018
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Ecotoxicology Assessment	
Acute aquatic toxicity	: This product has no known ecotoxicological effects.
Chronic aquatic toxicity	This product has no known ecotoxicological effects.
Magnesium oxide:	
Toxicity to fish	: LC50 (Oncorhynchus mykiss (rainbow trout)): 536 mg/l Exposure time: 96 h Test Type: static test
	Analytical monitoring: no data available Method: Other GLP: no
	Remarks: By analogy with a product of similar composition
	LC50 (Pimephales promelas (fathead minnow)): 212 mg/l Exposure time: 96 h Test Type: static test Analytical monitoring: no data available
	Method: EPA GLP: no
	Remarks: By analogy with a product of similar composition
Toxicity to daphnia and other aquatic invertebrates	Exposure time: 48 h Test Type: static test Analytical monitoring: yes Method: EPA GLP: No information available.
	Remarks: By analogy with a product of similar composition
Toxicity to algae	: EC50 (other algae): > 70 mg/l End point: Growth rate
	Exposure time: 72 h Test Type: static test
	Analytical monitoring: yes Method: OECD Test Guideline 201
	GLP: yes
	Remarks: By analogy with a product of similar composition The details of the toxic effect relate to the nominal
	concentration.
	: Remarks: not required
toxicity)	
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	: Remarks: not required
Toxicity to microorganisms	<ul> <li>EC50 (activated sludge of a predominantly domestic sewage): &gt; 70 mg/l</li> <li>End point: Bacteria toxicity (respiration inhibition)</li> <li>Exposure time: 3 h</li> </ul>

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Toxicity to fish (Chronic toxicity)	:	Remarks: not required
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	Remarks: not required
Toxicity to microorganisms	:	GLP: Remarks: Not applicable
Toxicity to soil dwelling organisms	:	Remarks: Not applicable
Plant toxicity	:	Remarks: Not applicable
Sediment toxicity	:	Remarks: Not applicable
Toxicity to terrestrial organisms	:	Remarks: Not applicable
Calcium oxide:		
Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 50.6 mg/l Exposure lime: 96 h Test Type: static test Method: OECD Test Guideline 203 Remarks: By analogy with a product of similar composition
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 49.1 mg/l Exposure time: 48 h Test Type: static test Method: Other Remarks: By analogy with a product of similar composition
Toxicity to algae	:	EC50 (Pseudokirchneriella subcapitata (algae)): 184.57 mg/l End point: Growth rate Exposure time: 72 h Test Type: static test Method: Other Remarks: By analogy with a product of similar composition
Toxicity to fish (Chronic toxicity)	:	Remarks: no data available
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC (Daphnia magna (Water flea)): 32 mg/l End point: mortality Exposure time: 14 d Test Type: semi-static test Method: Other Remarks: By analogy with a product of similar composition

Toxicity to microorganisms : NOEC: 4000 Exposure time: 96 d Test Type: Soil



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Substance key: SC0000101020 Version : 2 - 4 / USA	Revision Date: 03/07/2018 Date of printing :01/26/2022
version : 2 - 4 / USA	Date of printing :01/26/2022
	Method: Other Remarks: By analogy with a product of similar composition
	EC50 (activated sludge of a predominantly domestic sewage): 300.4 mg/l Exposure time: 3 h Test Type: static test Method: Other Remarks: By analogy with a product of similar composition
Toxicity to soil dwelling organisms	<ul> <li>NOEC (Eisenia fetida (earthworms)): 2000 mg/kg dry weight (d.w.)</li> <li>Exposure time: 28 d</li> <li>End point: Reproduction</li> <li>Method: OECD Test Guideline 222</li> <li>Remarks: By analogy with a product of similar composition</li> </ul>
Plant toxicity	: EC50 (Beta vulgaris): 1,080 mg/kg Exposure time: 21 d Method: OECD Guide-line 208 Remarks: By analogy with a product of similar composition
Ecotoxicology Assessment Chronic aquatic toxicity	: This product has no known ecotoxicological effects.
Persistence and degradability	Y
Product: Biodegradability	: Remarks: no data available
Components: Nickel monoxide: Biodegradability	: Remarks: The methods for determining biodegradability are not applicable to inorganic substances.
Aluminium oxide: Biodegradability	: Remarks: Not applicable
Magnesium oxide: Biodegradability	<ul> <li>Remarks: The methods for determining biodegradability are not applicable to inorganic substances.</li> </ul>
Amorphous silicon dioxide: Biodegradability	: Remarks: Not applicable
Calcium oxide: Biodegradability	Remarks: The methods for determining biodegradability are

not applicable to inorganic substances

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environmental compartments Remarks: Not expected to adsorb on soil

: Remarks: Not applicable

: Remarks: Test data for the substance are not available

: Do not allow to enter ground water, waterways or waste water.

: No data is available on the product itself.

Amorphous silicon dioxide: Distribution among environmental compartments

## Calcium oxide:

Distribution among environmental compartments

# Other adverse effects Product: Additional ecological information

#### Components:

Nickel monoxide: Environmental fate and pathways

## Results of PBT and vPvB

Additional ecological : slightly water endangering information The product should not be allowed to enter drains, water courses or the soil.

: not available

: not available

: Remarks: Not applicable

#### Aluminium oxide: Environmental fate and pathways

Results of PBT and vPvB : Remarks: Not applicable assessment

## Additional ecological information

Magnesium oxide:

#### Environmental fate and pathways Results of PBT and vPvB

: Remarks: Not applicable assessment Additional ecological : The product should not be allowed to enter drains, water

: not available

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Substance key: SC0000101020 Version : 2 - 4 / USA Revision Date: 03/07/2018 Date of printing :01/26/2022 Bioaccumulative potential Product: Bioaccumulation : Remarks: no data available

#### Components: Nickel monoxide Species: Pimephales promelas (fathead minnow) Bioconcentration factor (BCF): 47 - 106 Bioaccumulation Exposure time: 30 d Concentration: 0.021 - 0.109 mg/l, Ni Method: Other GLP: No information available. Remarks: By analogy with a product of similar composition Aluminium oxide: Bioaccumulation : Remarks: Not applicable

: Remarks: Not applicable

: Remarks: no data available

adsorption Medium: water - soil log Koc: 2.84 - 5.49

: Remarks: Test data for the substance are not available.

Magnesium oxide:

Bioaccumulation Remarks: Not applicable

#### Amorphous silicon dioxide Bioaccumulation

Calcium oxide: Bioaccumulation

#### Mobility in soil Product: Distribution among

environmental compartments Components:

Nickel monoxide: Distribution among environmental compartments

Aluminium oxide: Distribution among environmental compartments

Magnesium oxide:

Distribution among

information

assessmen

information

information

Additional ecological

: Remarks: Not applicable

Remarks: Not applicable

Revision Date: 03/07/2018 Date of printing :01/26/2022 courses or the soil Amorphous silicon dioxide: Environmental fate and pathways : not available Results of PBT and vPvB : Remarks: Not relevant for inorganic substances : Do not allow to enter ground water, waterways or waste water.

Calcium oxide Results of PBT and vPvB assessment The substance is not identified as a PBT or as a vPvB substance Additional ecological : slightly water endangering

SECTION 13. DISPOSAL CONSIDERATIONS

#### Disposal methods RCRA - Resource This product, if discarded as sold, is not a Federal RCRA This product, if discarded as sold, is not a rederal KCHA hazardous waste. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Conservation and Recovery Authorization Act Waste Code : NONE Dispose of this product in accordance with applicable local, state and federal regulations. Recover metal components by reprocessing whenever possible. Used catalysts may have different hazards or properties than the original product. This SDS does not apply to used catalysts. Waste from residues Contaminated packaging : Dispose of as unused product. SECTION 14. TRANSPORT INFORMATION

DOT	not restricted
IATA	not restricted
IMDG	not restricted

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Substance key: SC000010102	20 Revision Date: 03/07/2018
Version : 2 - 4 / USA	Date of printing :01/26/2022
SECTION 15. REGULATORY IN	FORMATION
Act	EPCRA - Emergency Planning and Community Right-to-Know
CERCLA Reportable Quan	tity
This material does not conta	in any components with a CERCLA RQ.
SARA 304 Extremely Haza	rdous Substances Reportable Quantity
This material does not conta	in any components with a section 304 EHS RQ.
SARA 311/312 Hazards	: Acute Health Hazard Chronic Health Hazard
SARA 313	: This product contains the chemical or chemicals listed below which are subject to the supplier notification requirements of

Section 313 of the Superfund Amendments and Reauthorization Act of 1986 ("SARA") and the requirements of 40 CFR Part 372:			
Nickel compounds	Not Assigned	50 - 60 %	
Nickel	7440-02-0	39.5 - 47.4 %	
	5		

#### Clean Water Act

Contains the following Priority Pollutant(s) at concentrations greater than 0.1%:, Nickel The components of this product are reported in the following inventories: TSCA : On TSCA Inventory

#### SECTION 16. OTHER INFORMATION



Full text of other abbreviations : USA. ACGIH Threshold Limit Values (TLV) ACGIH

#### SAFETY DATA SHEET



#### ReforMax® 100 Tab 4.7x4.7

Revision Date: 03/07/2018 Date of printing :01/26/2022

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US / EN

#### SAFETY DATA SHEET



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Substance key: SC0000101		
	020	Revision Date: 03/07/201
/ersion : 2 - 4 / USA		Date of printing :01/26/202
NIOSH REL	: USA. NIOSH Recomme	nded Exposure Limits
OSHA P0		1 Limits for Air Contaminants -
OSHA Z-1		osure Limits (OSHA) - Table Z-1
OSHA Z-3		osure Limits (OSHA) - Table Z-3
ACGIH / TWA	: 8-hour, time-weighted a	verage
NIOSH REL / TWA	: Time-weighted average workday during a 40-ho	concentration for up to a 10-hour ur workweek
OSHA P0 / TWA	: 8-hour time weighted av	erage
OSHA Z-1 / TWA	: 8-hour time weighted av	
OSHA Z-3 / TWA	: 8-hour time weighted av	
		M - American Society for the Testing rehensive Environmental Response
Extremely Hazardous St. Emergency Schedule; E Concentration associated GHS - Globally Harmon Materials Identification S International Air Transpy Equipment of Ships can concentration; ICAO - In Chemical Substances in International Maritime Or International Maritime Or Lethal Concentration to pollution (Median Leth Pollution from Ships; MS	bistance; ELX - Loading rate : NICS - Existing and New Cl with x% growth rate response ized System; IARC - International Ag ystem; IARC - International Ag ying Dangerous Chemicals in fermational Civil Aviation Organ Ochina; IMDG - International ganization; ISHL - Industrial S for Standardization; KECI - Kor 5 50 % of a test population; L 10 Dose); MARPOL - International Dose; NaRPOL - International Dose; NaRPOL - International Dose; Nare Composition; Co	a associated with x% response; EHS sesociated with x% response; EmS lemical Substances (Japan); ErCx ERG - Emergency Response Guid boratory Practice; HMIS - Hazardou nord Code for the Construction ar Bulk; ICS0 - Half maximal inhibito tzation; IECS0 - Inventory of Existir Maritime Dangerous Goods; IMO afety and Health Law (Japan); ISO ae Existing Chemicals Inventory; LCS DS0 - Lethal Dose to 50% of a te nal Convention for the Prevention . co.s Not Otherwis

Revision Date : 03/07/2018

This information corresponds to the present state of our knowledge and is intended as a general description of our products and their possible applications. Clariant makes no warranties, express or implied, as to the information's accuracy, adequacy, sufficiency or freedom from defect and

#### SAFETY DATA SHEET

ReforMax® 330 LDP 19x12

Substance key: SC0000100279	Revision Date: 06/05/2015
Version : 2 - 1 / USA	Date of printing :12/06/2016

SECTION 1. IDENTIFICATION

Identification of the	Clariant Produkte (Deutschland) GmbH		
company:	Lenbachplatz 6 München, 80333		
		Information of the substance/preparation:	
	Product Stewardship +1-704-331-7710		
	Emergency tel. number: +1 800-424-9300 CHEMTREC		
Trade name:	ReforMax® 330 LDP 19x12		
Material number:	251328		
Primary product use:	Catalyst		
Chemical family:	Nickel oxide on carrier		
TION 2. HAZARDS IDEN	TIFICATION		
GHS Classification			

	• ,
Serious eye damage	: Category 1
Skin sensitisation	: Category 1
Carcinogenicity (Inhalation)	: Category 1A
Specific target organ toxicity - single exposure	: Category 3 (Respiratory system)
Specific target organ toxicity - repeated exposure	: Category 1

GHS Label element Hazard pictograms

Signal word Hazard statements Danger H315 Causes skin irritation.

H315 Qualese skin imitation. H317 May cause an allergic skin reaction. H318 Qualese serious eye damage. H335 May cause respiratory imitation. H350 May cause cancer by inhalation. H372 Qualese damage to organs through prolonged or repeated

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Substance key: SC0000101020 Version : 2 - 4 / USA



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#### ReforMax® 330 | DP 19x12

Substance key: SC0000100279 Version: 2 - 1 / USA Revision Date: 06/05/2015 Date of printing :12/06/2016 exposure. Precautionary statements Prevention: Provention: P201 Obtain special instructions before use. P202 Do not handle until all safety precautions have been read and understood. P260 Do not breathe dust/fume/ gas/ mist/vapours/ spray. P264 Wash skin thoroughy after handling. P270 Do not eat, drink or smoke when using this product. P271 Use only outdoors or in a well-wentilated area. P272 Contaminated work clothing should not be allowed out of the workplace. P272 Contaminated work clothing should not be allowed out of the workplace. P280 Wear eye protection/ face protection. P280 Wear protective glowes. P281 Use personal protective equipment as required. **Response:** P302 + P332 IF DN SKIN: Wash with plenty of soap and water. P304 + P340 + P312 IF INHALED. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell. P305 + P331 + P338 + P310 IF IN EYES Finse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician. P308 + P313 IF exposed or concerned: Get medical advice/ attention. attention. P333 + P313 If skin irritation or rash occurs: Get medical advice/

attention. P362 Take off contaminated clothing and wash before reuse.

Storage: P403 + P233 Store in a well-ventilated place. Keep container

tightly closed. P405 Store locked up.

Disposal: P501 Dispose of contents/ container to an approved waste disposal plan

#### Other hazards

The substance does not meet the criteria for PBT or vPvB substance.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous components		
Chemical Name	CAS-No.	Concentration (%)
Aluminium oxide	1344-28-1	57 - 87
Nickel monoxide	1313-99-1	10 - 25
Calcium oxide	1305-78-8	3 - 18
Any concentration shown as a range is to protect confidentiality or is due to batch variation.		

SECTION 4. FIRST AID MEASURES

#### SAFETY DATA SHEET



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## ReforMax® 330 LDP 19x12

Substance key: SC0000100279	Revision Date: 06/05/2015
Version : 2 - 1 / USA	Date of printing :12/06/2016

Special protective equipment : In the event of fire, wear self-contained breathing apparatus. for firefighters

#### SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	: Ensure adequate ventilation. Avoid dust formation. Use personal protective equipment. Avoid contact with skin, eyes and clothing. Wearing appropriate personal protective equipment, contain spill and collect into a suitable container. Minimize almoome particulates. Keep container tightly closed. Material should be swept up or vacuumed, using ventilation to control the level of airborne dust. Avoid using compressed air or any method that creates airborne dust. If cleanup may create airborne dust, personnel should wear eye, skin, and respiratory protection. Refer to Section 8 for more information.
Environmental precautions	: Do not flush into surface water or sanitary sewer system.
Methods and materials for containment and cleaning up	Take up uncontaminated material and pass on for further processing. Take up contaminated material by mechanical means, load into clean containers, and dispose of in accordance with legal regulations.

SECTION 7 HANDLING AND STORAGE

Advice on protection against fire and explosion	:	In case of inappropriate handling, spent catalyst can be self- heating when in contact with air.
Advice on safe handling	:	Avoid contact with skin, eyes and clothing. Do not breathe dust/ fume/ gas/ mist/ vapours/ spray. Minimize dust generation and accumulation.
Conditions for safe storage	;	Keep tightly closed in a dry and cool place.
Technical measures/Precautions	:	Keep container tightly closed and dry.
		Keep container tightly closed. Keep container dry.
Materials to avoid	:	No materials to be especially mentioned.

#### SAFETY DATA SHEET



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## ReforMax® 330 LDP 19x12

Celonwax@ 550 EDF 19x12	rage o
Substance key: SC0000100279	Revision Date: 06/05/2015
/ersion : 2 - 1 / USA	Date of printing :12/06/2016
General advice	: Take off all contaminated clothing immediately. Show this safety data sheet to the doctor in attendance.
If inhaled	: INHALATION: If exposed to excessive levels of dust or fumes, remove to fresh air and get medical attention. Get medical attention if cough and other symptoms develop. Remove to fresh air.
In case of skin contact	: Avoid contact with skin. Wash area with mild scap and copious amounts of water. Remove contaminated clothing and shoes. Wash clothing before reuse. If skin irritation occurs: Cet medical advice/ attention.
In case of eye contact	: Do not rub affected area. Rinse immediately with plenty of lukewarm water, also under the eyelids, for at least 15 minutes. Obtain medical attention.
If swallowed	: Do NOT induce vomiting. Call your local Poison Control Center (In the U.S. call 1-800- 222-1222).
Most important symptoms and effects, both acute and delayed	: The possible symptoms known are those derived from the labelling (see section 2). No additional symptoms are known.
Notes to physician	: Skin sensitization may lead to chronic eczema "nickel itch". Lung damage is cumulative and may include cancer of lung, nasal cavity and larynx. May cause pulmonary eosinophilia (Loeffler's Syndrome).

#### SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	:	The product itself does not burn. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	:	Do not use a solid water stream as it may scatter and spread fire.
Specific hazards during firefighting	:	In case of fire can be formed: Breathable nickel oxide dust
		None known.
Further information	:	Wear full protective clothing and NIOSH/MSHA-approved positive pressure, self-contained breathing apparatus. Evacutate area. Fight fire with normal precautions from a reasonable distance.

#### SAFETY DATA SHEET

#### ReforMax® 330 LDP 19x12

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#### SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis			
Aluminium oxide	1344-28-1	TWA (total dust)	15 mg/m3	OSHA Z-1			
		TWA (respirable fraction)	5 mg/m3	OSHA Z-1			
		TWA (Total)	10 mg/m3	OSHA P0			
		TWA (Respirable fraction)	5 mg/m3	OSHA PO			
		TWA (Respirable fraction)	1 mg/m3	ACGIH			
		sis, Neurotoxicit	spiratory Tract irritat y, Not classifiable as				
Calcium oxide	1305-78-8	TWA	2 mg/m3	ACGIH			
	Further inform	nation: Upper Re	spiratory Tract irrital	tion			
		TWA	2 mg/m3	NIOSH REL			
		TWA	5 mg/m3	OSHA Z-1			
		TWA	5 mg/m3	OSHA P0			
	result of reco mg/m3 remain below that le	Further information: The TWA PEL of 5 mg/m3 is not in effect as a result of reconsideration. The calcium oxide Transitional Limit of mg/m3 remains in effect and employee exposures shall be kept below that level pursuant to the methods of compliance specified in 29 CFR 1910.1000(e).					
Nickel monoxide	1313-99-1	TWA	1 mg/m3 (Nickel)	OSHA Z-1			
		TWA	1 mg/m3 (Nickel)	OSHA P0			
		TWA	0.015 mg/m3 (Nickel)	NIOSH REL			
	Appendix A		Occupational Carcin	5 /			
All inert or nuisance dusts substance name are cover 5 mg/m3 for respirable fraction and 15	red by the Particulate	s Not Otherwise	Regulated (PNOR)	limit which is			

respirable fraction and 15 mg/m3 for total dust. ACGIH exposure guidelines of less than 3 m (respirable) and 10 mg/m3 (inhalable) have been established for particles (insoluble/poorty soluble) not otherwise specified (PNOS).

Engineering measures

: Use ventilation adequate to keep exposures below recommended exposure limits. See the safety datasheet.



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#### ReforMax® 330 LDP 19x12

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# Personal protective equipment Respiratory protection Year NIOSH approved particulate filtering respirator rated N, R, or PS or 100 or equivalent in the absence of proper environmental control. Type of respirator depends on level of exposure. Hand protection Eventsory of the provide provide particulate filtering respirator rated N, R, or program of the provide pro

#### SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

CTION 9. PHYSICAL AN	D CHEMICAL PROPERTIES
Appearance	: 10-hole Tablet
Particle size :	not tested.
Colour	: grey
Odour	: none
Odour Threshold	: cannot be determined
pН	: not tested.
Melting point	: > 1,500 °C
Boiling point	: Not applicable

#### SAFETY DATA SHEET

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Possibility of hazardous reactions	Nickel catalysts can form nickel tetracarboly Ni(CO)4 in the presence of carbon monoxide. Nickel carbonyl is highly flammable and highly toxic and can cause cyanosis and chemical pneumonia which can be fatal. Symptoms may be delayded for several hous or days. Extreme care and specialized handling is required if carbon monoxide is present in the catalyst process. Hazardous reactions are possible at temperatures including, but not limited to, ambient temperatures depending on pressure and carbon monoxide concentrations.
Conditions to avoid	: Avoid dust formation.
Incompatible materials	: Acids and bases
Hazardous decomposition products	No decomposition if stored and applied as directed. In case of fire hazardous decomposition products may be produced such as: see heading 5
SECTION 11. TOXICOLOGICAL INF	ORMATION
Information on likely routes of Eye contact Skin contact	exposure

#### Skin contac Ingestion Inhalation Acute toxicity Product: Acute oral toxicity : Remarks: no data available Acute inhalation toxicity : Remarks: no data available Acute dermal toxicity : Remarks: no data available Components Aluminium oxide: Acute oral toxicity LD50 (Rat, male and female): > 10,000 mg/kg Method: OECD Test Guideline 401 GLP: No information available. LC50 (Rat, male and female): > 2.3 mg/l Exposure time: 4 h Method: OECD Test Guideline 403 GLP: yes Acute inhalation toxicity Acute dermal toxicity : Remarks: Not applicable Nickel monoxide: Acute oral toxicity : LD50 (Rat, female): > 11,000 mg/kg

SAFETY DATA SHEET



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Version . 2 - 17 OOA		Date of printing . 12/00/2010
Flash point	: Not applicable	
Evaporation rate	: Not applicable	
Upper explosion limit	: not tested.	
Lower explosion limit	: not tested.	
Combustion number :	not determined	
Vapour pressure	: Not applicable	
Relative vapour density	: Not applicable	
Relative density	: not tested.	
Density	: not tested.	
Bulk density	: 850 kg/m3	
Solubility(ies) Water solubility	: insoluble	
Solubility in other solvents	: not tested.	
Partition coefficient: n- octanol/water	: not determined	
Auto-ignition temperature	: Not applicable	
Decomposition temperature	: no data available	
Viscosity Viscosity, dynamic	: Not applicable	
Viscosity, kinematic	: Not applicable	
Flow time	: Not applicable	
Explosive properties	: no data available	
Oxidizing properties	: not tested.	
Sublimation point	: not determined	

#### SECTION 10. STABILITY AND REACTIVITY

Reactivity

Chemical stability

: No dangerous reaction known under conditions of normal use.

: The product is chemically stable.

#### SAFETY DATA SHEET

#### ReforMax® 330 LDP 19x12

Substance key: SC0000100279 Version : 2 - 1 / USA

Revision Date: 06/05/2015 Date of printing :12/06/2016 Method: OECD Test Guideline 425 Test substance: nickel oxide, black

Acute inhalation toxicity

: LC50 (Rat): > 5.15 mg/l Exposure time: 4 h Method: OECD Test Guideline 403 Test substance: nickel oxide, black

· Remarks: Test data for the substance are not available

Calcium oxide: Acute oral toxicity

Skin corrosion/irritation

Product: Remarks: no data available

Components: Aluminium oxide: Species: Rabbit Exposure time: 24 h Method: OECD Test Guideline 404 Result: No skin initiation GLP: No information available.

Nickel monoxide: Species: Rabbit Assessment: No skin irritation Method: OECD Test Guideline 404 Result: Mild skin irritation

Serious eye damage/eye irritation <u>Product:</u> Remarks: no data available

Components: Aluminium oxide: Species: rabbit eye Result: No eye irritation Method: FDA guideline GLP: No information available.

Nickel monoxide: Species: Rabbit Result: Moderate eye irritation Assessment: No eye irritation Method: OECD Test Guideline 405

Respiratory or skin sensitisation Product:



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## SAFETY DATA SHEET ReforMax® 330 | DP 19x12

Substance key: SC0000100279 Version : 2 - 1 / USA Remarks: no data available Components:

Aluminium oxide: Test Type: Draize Test Exposure routes: Dermal Species: Guinea pig Method: Draize Test Result: non-sensitizing GLP: no

Result: non-sensitizing GLP: no Nickel monoxide: Species: Guinea pig Method: OECD Test Guideline 406 Result: non-sensitizing Germ cell mutagenicity Components: Aluminium oxide: Genotoxicity in vitro

Genotoxicity in vivo

Test Type: Respiratory system Exposure routes: inhalation (dust/mist/fume) Species: Mouse Method: Other



#### SAFETY DATA SHEET



Page	ReforMax® 330 LDP 19x12	Page 11
Revision Date: 06/05/20 Date of printing :12/06/20		9 Revision Date: 06/05/2015 Date of printing :12/06/2016
		Exposure time: Single exposure Dose: 500 - 1000 - 2000 mg/kg Method: OECD Test Guideline 474 Result: positive GLP: No information available.
	Germ cell mutagenicity - Assessment	: Weight of evidence does not support classification as a germ cell mutagen.
mist/fume)	Nickel monoxide: Genotoxicity in vitro	: Test Type: In vitro gene mutation study in mammalian cells Method: OECD Test Guideline 476 Result: negative
ino dano,	Carcinogenicity	
	Components: Aluminium oxide : Carcinogenicity - Assessment	: Carcinogenicity classification not possible from current data.
5	IARC	Listed
	OSHA	Not listed
	NTP	Listed
Test Type: In vitro gene mutation study in mammalian cells Species: mouse lymphoma cells Concentration: 61 - 780 µg/ml Metabolic activation: with and without Method: OCC Test Guideline 476 Result: negative GLP: yes Remarks: By analogy with a product of similar composition Test Type: Chromosome Aberration Test Species: Rat (female) Strain: wistar Cell type: Bone marrow cells Application Route: oral (gavage) Exposure time: Single exposure Dose: 500 - 1000 - 2000 mg/kg Method: OCC Test Guideline 475 Result: positive GLP: No information available.	Reproductive toxicity <u>Components:</u> Aluminium oxide: Effects on fertility	Species: Rat Sex: male and female Dose: 57 - 189 - 567 mg/kg Frequency of Treatment: daily Sprague-Dawley Test period: 1 a Group: yes NOAEL: ca. 567 mg/kg, F1: ca. 57 mg/kg, Method: Other GLP: yes Remarks: By analogy with a product of similar composition : Species: Rat
Test Type: Micronucleus test Species: Rat (lemale) Strain: wistar Cell type: Bone marrow cells Application Route: oral (gavage)	development	Application Route: oral (gavage) Exposure time: gestation day 6 to 15 Dose: 126 - 251 - 503 mg/kg Group: yes 503 mg/kg > 100 mg/kg Number of exposures: twice daily

#### SAFETY DATA SHEET

# ReforMax® 330 LDP 19x12 Substance key: SC0000100279 Version : 2 - 1 / USA

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Method: OECD Test Guideline 414 GLP: No information available. Remarks: By analogy with a product of similar composition

Classification as "toxic for reproduction" is not justifiable. No teratogenic effects to be expected.

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Reproductive toxicity -Assessment

STOT - single exposure Components:

Assessment: The substance or mixture is not classified as specific target organ toxicant, single exposure.

#### STOT - repeated exposure

Components: Aluminium oxide: Assessment: The substance or mixture is not classified as specific target organ toxicant. repeated exposure.

#### Repeated dose toxicity

Components: Components: Aluminium oxide: Species: Rat, male and female NOAEL: 57 mg/kg Application Route: Drinking water Exposure time: 1 a Number of exposures: continuously Dose: 57 - 189 - 567 mg/kg Group: yes Method: OECD Test Guideline 426 CH Pruse GLP: yes Remarks: By analogy with a product of similar composition

Species: Rat Application Route: Inhalation Exposure time: 6 m Number of exposures: 6 hr/day; 5 days a week Dose: 15-30-50-70-100 mg/m3 Method: OECD Test Guideline 413 GLP: No information available.

Application Route: Skin contact Remarks: The study is not necessary from a scientific perspective.

Nickel monoxide: Species: Rat NOAEL: 2.2 mg/kg Application Route: Oral Application Route: Orai Test substance: Nickel sulphate x 6 H2O

#### SAFETY DATA SHEET

# ReforMax® 330 LDP 19x12 Substance key: SC0000100279 Version : 2 - 1 / USA

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Species: Rat LOAEL: 0.5 mg/kg Application Route: Inhalation

Aspiration toxicity Components:

Aluminium oxide: No aspiration toxicity classification

Experience with human exposure Product: General Information

: The possible symptoms known are those derived from the labelling (see section 2).

Further information Product: Remarks: No data is available on the product itself. Handle in accordance with good industrial hygiene and safety practice.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity Product: Toxicity to fish

Remarks: no data available

#### Components: Aluminium oxide: Toxicity to fish

Toxicity to daphnia and other aquatic invertebrates

Toxicity to algae

NOEC (Daphnia magna (Water flea)): > 0.071 mg/l Exposure time: 48 h Test Type: static test Analytical monitoring: yes Method: OECD Test Guideline 202 GLP: yes NOEC (Pseudokirchneriella subcapitata (green algae)): >= 0.052 mg/l End point: Growth rate Exposure time: 72 h Test Type: static test

NOEC (Salimo trutta (brown trout)): > 0.072 mg/l Exposure time: 96 h Test Type: semi-static test Analytical monitoring: yes Method: OECD Test Guideline 203 GLP: yes



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ReforMax® 330 LDP 19x12	

ostance key: SC0000100279	Revision Date: 06/05/2015
sion : 2 - 1 / USA	Date of printing :12/06/2016
	Analytical monitoring: yes Method: OECD Test Guideline 201 GLP: yes
	EC50 (Pseudokirchneriella subcapitata (green algae)): 1.05 mg/l End point: Growth rate Exposure time: 72 h Test Type: static test Analytical monitoring: yes Method: OECD Test Guideline 201 GLP: yes
	Remarks: By analogy with a product of similar composition
Toxicity to fish (Chronic toxicity)	: NOEC (Pimephales promelas (fathead minnow)): 56.48 mg/l Exposure time: 7 d Test Type: semi-static test Analytical monitoring: yes Method: Other GLP: yes Remarks: By analogy with a product of similar composition
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	: NOEC (Daphnia magna (Water flea)): 0.076 mg/l Exposure time: 21 d End point: Reproduction rate Test Type: semi-static test Analytical monitoring: yes Method: OECD Test Guideline 211 GLP: yes Remarks: By analogy with a product of similar composition
Toxicity to bacteria	: GLP: Remarks: Not applicable
Toxicity to soil dwelling organisms	: Remarks: Not applicable
Plant toxicity	: Remarks: Not applicable
Sediment toxicity	: Remarks: Not applicable
Toxicity to terrestrial organisms	: Remarks: Not applicable
Nickel monoxide: Toxicity to fish	: LC50 (Pimephales promelas (fathead minnow)): 0.23 mg/l 0,23 Exposure time: 96 h
	LC50 (Brachydanio rerio (zebrafish)): 320 mg/l 320 Exposure time: 96 h

#### SAFETY DATA SHEET



ubstance key: SC0000100279	Revision Date: 06/05/2015
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Components:	
Aluminium oxide:	
Distribution among	: Remarks: Not applicable
environmental compartments	. Remarks. Hor approable
Nickel monoxide:	
Distribution among	: Adsorption/Soil
environmental compartments	log Koc: 2.86
Calcium oxide:	Remarks: Test data for the substance are not available.
Distribution among environmental compartments	: Remarks: lest data for the substance are not available.
Other adverse effects	
Components:	
Aluminium oxide: Environmental fate and	not available
pathways	. not available
Results of PBT and vPvB	: Remarks: Not applicable
assessment	
Additional ecological	: Do not allow to enter ground water, waterways or waste water.
information	
Components:	
Nickel monoxide:	
Results of PBT and vPvB	: Remarks: The substance does not meet the criteria for PBT or
assessment	vPvB substance.
Additional ecological	: slightly water endangering
information	
Components:	
Calcium oxide:	
Results of PBT and vPvB	: Remarks: The substance does not meet the criteria for PBT or
assessment	vPvB substance.
Additional ecological	: slightly water endangering
information	

Disposal methods : Although not a RCRA hazardous waste, check with local and state regulations for proper disposal. RCRA - Resource Conservation and Recovery Authorization Act Waste Code : NONE

#### SAFETY DATA SHEET



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Substance key: SC0000100279 Version : 2 - 1 / USA	Revision Date: 06/05/2015 Date of printing :12/06/2016
Toxicity to daphnia and other : aquatic invertebrates	LC50 (Daphnia dubia (water flea)): 0.013 mg/l 0.013 Exposure time: 48 h
	LC50 (Daphnia magna (Water flea)): 4,970 mg/l 4970 Exposure time: 48 h
Calcium oxide: Toxicity to fish :	Remarks: Test data for the substance are not available.
Persistence and degradability	
Product: Biodegradability :	Remarks: no data available
Components: Aluminium oxide: Biodegradability :	Remarks: Not applicable

: Remarks: The methods for determining biodegradability are not applicable to inorganic substances.

: Remarks: The methods for determining biodegradability are not applicable to inorganic substances.

: Remarks: Test data for the substance are not available.

Bioaccumulative potential

Nickel monoxide: Biodegradability

Calcium oxide: Biodegradability

Product: Bioaccumulation

#### Components: Aluminium oxide: Bioaccumulation

Nickel monoxide: Bioaccumulation

Calcium oxide: Bioaccumulation

Mobility in soil Product: Distribution among environmental compartments

: Remarks: no data available

: Remarks: no data available

: Remarks: Not applicable

: Species: Water organisms Bioconcentration factor (BCF): 270 Concentration: > 0,0012 mg Ni/I

# CLARIANT

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## ReforMax® 330 LDP 19x12

SAFETY DATA SHEET

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Waste from residues	: Dispose of this product in accordance with applicable local, state and federal regulations. Recover metal components by reprocessing whenever possible.
Contaminated packaging	: Dispose of as unused product.

#### SECTION 14. TRANSPORT INFORMATION

DOT	not restricted
IATA	not restricted
IMDG	not restricted

SEC

CTION 15. REGULATORY INFORMATION				
EPCRA - Emergency Planning	and Community Right-to-K	now Act		
CERCLA Reportable Quantity				
This material does not contain a SARA 304 Extremely Hazardon	, ,			
This material does not contain a		•		
SARA 311/312 Hazards	: Acute Health Hazard Chronic Health Hazard			
SARA 302	: No chemicals in this materi requirements of SARA Title		eporting	
SARA 313	: This product contains the c which are subject to the su Section 313 of the Superfur Reauthorization Act of 1984 40 CFR Part 372:	pplier notification requind Amendments and	irements of	
	Nickel compounds	Not Assigned	25 %	
	Nickel	7440-02-0	19.75 %	
0				

Clean Water Act

Contains the following Priority Pollutant(s) at concentrations greater than 0.1%:, Nickel . . ..... 

The components of th	his product are reported in the following inventories:
TSCA	: All components of this product are listed or excluded from listing on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) Inventory.



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## **Safety Data Sheet**

Acetylene Red Ball Oxygen Co., Inc. P.O. Box 7316 Shreveport, LA 71137-7316 Phone: 318-425-6302 http://www.redballoxygen.com

#### Section 1: Product and Company Identification

Red Ball Oxygen Co., Inc. P.O. Box 7316 P.O. Box 7316 Shreveport, LA 71137-7316 Phone: 318-425-3211 Fax: 318-425-6302 http://www.redballoxygen.com Product Code: Acetylene

#### Section 2: Hazards Identification



Hazard Classification: Aspiration Hazard (Category 1) Flammable (Category 1) Flammable Aerosol (Category 1) Gases Under Pressure

Hazard Statements: Contains gas under pressure; may explode if heated Extremely flammable aerosol Extremely flammable gas May be fatal if swallowed and enters airways

Precautionary Statements

Prevention: Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Pressurized container: Do not pierce or burn, even after use. Do not spray on an open flame or other ignition source.

Response: Do NOT induce vomiting. Eliminate all ignition sources if safe to do so. If swallowed: Rinse mouth. Do NOT induce vomiting. Immediately call a poison center or doctor. Leaking gas fire: Do not extinguish, unless leak can be stopped safely.

Storage: Red Ball Oxygen Co., Inc. Generated by the SDS Manager from AsteRisk, LLC. All Rights Reserved

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Protect from sunlight. Store in well-ventilated place. Store locked up. Do not expose to temperatures exceeding 50C/122F.

Disposal: Dispose of contents and/or container in accordance with applicable regulations.

SAFETY DATA SHEET

ReforMax® 330 | DP 19x12

Substance key: SC0000100279 Version: 2 - 1 / USA

SECTION 16. OTHER INFORMATION

Flamm ability

Special hazard

Further information

AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIOC (New Zealand), PICCS (Philippines), TSCA (USA)

: 06/05/2015

This information is supplied under the OSHA Hazard Communication Standard, 29 CFR 1910.1200, and is offered in good faith based on data available to us that we believe to be true and accurate. The recommended industrial hygiene and ask handling procedures are believed to be generally applicable to the material. However, each user should revew these recommendations in the specific context of the intended use and determine whether they are appropriate for that use. No warranty, express or implied, is made regarding the accuracy of this data, the hazards connected with the use of the material, or the results to be obtained from the use thereof. We assume no responsibility for damage or injury from the use of the product described herein. Data provided here are typical and not intended for use as product sepecifications.

Inventories

NFPA:

Revision Date

US / USA

Section 3: Composition/Information on Ingredients



Chemical Substance	Chemical Family	Trade Names
ACETYLENE,	hydrocarbons,	ACETYLENE; ETHYNE; WELDING GAS; ACETYLEN; ETHINE; NARCYLEN; VINYLENE;
DISSOLVED	aliphatic	UN 1001; C2H2

#### Section 4: First Aid Measures

Skin Contact	Eye Contact	Ingestion	Inhalation	Note to Physicians
Gas: Not applicable. Liquid: Wash exposed skin with soap and water.	Gas: Not applicable. Liquid: Flush eyes with plenty of water.	Not applicable.	If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.	For inhalation, consider oxygen.

#### Section 5: Fire Fighting Measures

Suitable Extinguishing Media	Products of Combustion	Protection of Firefighters
Carbon dioxide, regular dry chemical Large fires: Use regular foam or flood with fine water spray.	Oxides of carbon	<ul> <li>Respiratory protection may be needed for frequent or heavy exposure.</li> <li>Any self-contained breathing apparatus with a full forceniace.</li> </ul>

#### Section 6: Accidental Release Measures

Personal Precautions	Environmental Precautions	Methods for Containment	
Keep unnecessary people away, isolate hazard area and deny entry. Ventilate closed spaces before entering.	Avoid heat, flames, sparks and other sources of ignition.	Stop leak if possible without personal risk. Reduce vapors with water spray. Remove sources of ignition.	
Methods for Cleanup	Other Information		
Evacuate, stop leak if possible. Remove sources of ignition	on. None		

#### Section 7: Handling and Storage

Handling

Storage

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Handling	Storage
Avoid heat, flames, sparks and other sources of ignition. Grounding	Store and handle in accordance with all current regulations and standards.
and bonding required. Secure to prevent tipping. Subject to storage	Protect from physical damage. Store outside or in a detached building.
regulations: U.S. OSHA 29 CFR 1910.101. Keep separated from	Keep separated from incompatible substances. Store in a cool, dry place.
incompatible substances.	Store in a well-ventilated area.

Section 8: Exposure Controls/Personal Protection

VED: ACETYLENE: ACGIH (simple asphyxiant) 2500 ppm (2662 mg/m3) NIOSH re

#### Engineering Controls

Handle only in fully enclosed systems.		
Eye Protection	Skin Protection	Respiratory Protection
Eye protection not required, but recommended.	Protective clothing is not required.	Respiratory protection may be needed for frequent or heavy exposure.

General Hygiene considerations

Avoid breathing vapor or mist
 Avoid contact with eyes and skin
 Wash thoroughly after handling and before eating or drinking

Section 9: Physical and Chemical Properties

#### Physical State Appearance Color Change in Appearance Physical Form Odor

Flash Po	int		Flammab		Partitic Coeffic		Autoignitio Temperatu		Upper	Explosive	e Limit	s	Lower Explosive Limits
all norma	I temperatu F (-18 C) (	be ignited at res. A flash CC) has		1			581 F (305	C)	energy certain	00% if the ignition so conditions or size an	ource, a s of pre	ssure,	0.025
Boiling Point	Freezing Point	Vapor Pressure	Vapor Density	Spec Gravi		Water Solubility	pH	Odo Thre	or eshold	Evapor Rate	ation	Viscosity	1
-103 F (-75 C) @ 170 kPa abs (24.7 psi abs) or 69 kPa gage (10 psi gage)	Not available	760 mmHg @ -84 C	0.9 (Air=1)	Not applic	able	0.94% @ 25 C	Not applicable	(226 (det (4); (620 (not \$pec (8) 1 2750 mg/i (122 ppm	m3 ) ppm) cified) 1300- 0	Not applicat	le	0.010 cP @ 20 C	
Molecula Weight		lolecular ormula	Density	'	Wei Gall	ght per on	Volatility by Volume	'	Volati	lity	Solven	t Solubility	
26.04	н	-C-C-H	1.1747 0 C	g/L @	Not	available	Not available	9	Not applica			: Acetone, be orm. ether	enzene,

#### Section 10: Stability and Reactivity

Stability Conditions to Avoid Incompatible Materials

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Taste

Stability	Conditions to Avoid	Incompatible Materials
May decompose violently on heating. May explode when heated.	May decompose violently on heating. May explode when heated.	Metals, halogens, oxidizing materials, metal carbide, reducing agents, halo carbons BRASS, CALCIUM HYPOCHLORITE, COPPER, MERCURY AND SILVER SALTS, HALOGENS, HEAVY METALS, HYDRIDES, LIQUID NITROGEN, NITRIC ACID, OXYGEN, OZONE, PERCHLORIC ACID, POTASSIUM

Hazardous Decomposition Products Possibility of Hazardous Reactions Hydrogen Polymerizes with evolution of heat. Av

#### Section 11: Toxicology Information

Oral LD50	Dermal LD50	Inhalation					
Not	Not	Nausea, vo	miting, chest pai	n, wheezing, headache, dro	owsiness, dizziness, loss of coordination, bluish skin		
established	established	color, suffocation, lung congestion, coma					
			-				
Eye Irritation			Skin Irritation	Sensitization			
No information	n on significant adv	erse effects	Rash	Central nervous system	depression, difficulty breathing, asphyxiant		
	lin a ha						
Chronic Ef							
Chronic Ef Carcinogenic		Reproc	luctive Effects	Developmental Effects	]		

#### Section 12: Ecological Information

Fate and Transport	rt		
Eco toxicity	Persistence / Degradability	Bioaccumulation / Accumulation	Mobility in Environment
Fish toxicity: Not available Invertibrate toxicity: Not available Algal toxicity: Not available Phyto toxicity: Not available Other toxicity: Not available	Relatively non-persistent in the environment. Highly volatile from water.	Accumulates very little in the bodies of living organisms.	Not expected to leach through the soil or the sediment.

#### Section 13: Disposal Considerations

Dispose in accordance with all applicable regulations. Subject to disposal regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): D00 0003.

#### Section 14: Transportation Information

U.S. DOT 49	CFR 172	.101					
Proper Shipping Name	ID Number	Hazard Class or Division	Packing Group	Labeling Requirements	Passenger Aircraft or Railcar Quantity Limitations	Cargo Aircraft Only Quantity Limitations	Additional Shipping Description
Acetylene, dissolved	UN1001	2.1	Not applicable	2.1	Forbidden	15 kg	N/A

Material Safety Data Sheet

Revision date: 01/21/2010

Concentration

47.0 - 56.0%

44.0 - 53.0%

Revision date 01/21/2010

# Canadian Transportation of Dangerous Goods Shipping Name UN Number Class Packing Group / Risk Group Acetylene, dissolved UN1001 2.1 Not applicable

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Dow

Supplier

Component

Water

Colour

Odour

Page 1 of 6

1. PRODUCT AND COMPANY IDENTIFICATION

For non-emergency information contact: 215-592-3000

2. COMPOSITION/INFORMATION ON INGREDIENTS

Beads

Odoriess

black opaque

Emergency telephone number 1 800 424 9300 Local Emergency telephone number 989-636-4400

Strong acid cation exchange polymer, hydrogen ion form

3. HAZARDS IDENTIFICATION Emergency Overview App Form

Hazard Summary

AMBERLYST™ 40 WET Resin

ROHM AND HAAS CHEMICALS LLC

A Subsidiary of The Dow Chemical Company 100 INDEPENDENCE MALL WEST PHILADELPHIA, PA 19106-2399 United States

CAS-No.

39389-20-3

7732-18-5

DANGERI MATERIAL CAN CAUSE THE FOLLOWING: CORROSION TO EVES IRRITATING TO RESPIRATORY SYSTEM AND SKIN.

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#### Section 15: Regulatory Information

U.S. Regulations CERCLA Sections SARA 355.30 SARA 355.40 Not regulated. Not regulated. Not regulated. SARA 370.21 
 Acute
 Chronic
 Fire
 Reactive
 Sudden Release

 Yes
 No
 Yes
 Yes
 Yes
 SARA 372.65 Not regulated. OSHA Process Safety Not regulated. State Regulation CA Proposition 65 Not regulated.

Canadian Regulations WHMIS Classification A, B1

 National Inventory Status

 US Inventory (TSCA)
 TSCA 12b Export Notification
 Canada Inventory (DSL/NDSL)

 Listed on inventory.
 Not listed.
 Not determined.

#### Section 16: Other Information

NFPA Rating

 NFPA Rating

 HEALTH=1FIRE=4 REACTIVITY=3

 0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard

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AMBERLYST™ 40 WET Resin
Potential Health Effects Primary Routes of Entry: Inhalation Skin contact Eye contact
Eyes: Material can cause the following: corrosion to eyes reddening tearing May cause permanent eye injury.
Skin: Prolonged or repeated skin contact can cause the following: slight irritation Inhalation: Inhalation of dust can cause the following: irritation of nose, threat, and lungs
4. FIRST AID MEASURES
Inhalation: Move to fresh air. Skin contact: Wash off with scop and water. If skin initiation persists, call a physician. Eye contact: Immediately flush the eye with plenty of water for at least 15 minutes, holding the eye open. Get prompt medical attention.
5. FIRE-FIGHTING MEASURES
Flash point     not applicable       Ignition temperature     ca.500.0 ℃ (932.00 ♥)       Lower explosion limit     not applicable       Upper explosion limit     not applicable
Suitable extinguishing media:Use the following extinguishing media when fighting fires involving this material: Water spray Carbon dioxide (CO2) Foam Dry chemical
Specific hazards during fire fighting: Toxic turnes are generated when material is exposed to fire or fire conditions. Cool closed containers exposed to fire with water spray. Special protective equipment for fire-fighters: In the event of fire, wear self-contained breathing apparatus. Further information: Breain upwind. Avoid breathing smoke.
6. ACCIDENTAL RELEASE MEASURES
Personal precautions           Appropriate protective equipment must be worn when handling a spill of this material. See SECTION 8, Exposer Control®-Personal Protection, for recommendations.           If exposed to material during clean-up operations, see SECTION 4, First Aid Measures, for actions to follow.           Methods for cleaning up Reep spectators away.           Floor may be sippery; use care to avoid falling.           Page 2 of 6         Bevision date         01/21/2010

Transfer spilled material to suitable containers for recovery or disposal.

	-	_			_	_	-
7. HANDLING AND STORAGE			STOPACE	AND	INC	HANDI	7

Handling Avoid repeated freaze-thaw cycles; beads may fracture. If frozen, thaw at room temperature. Avoid contact with skin, eyes and clothing. Corrosive to eyes. See SECTION 8, Exposure Controls/Personal Protection, prior to handling. Storage

Protection, prior to nariong. Storage Further Information: CAUTION: Do not pack column with dry ion exchange resins. Dry beads expand when wetted; this expansion can cause glass column to shatter.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure limit(s) Exposure limits are listed below, if they exist. Exposure limits are listed below, if they exist. Exposure interaction is the employed. Hand protection: Cotton or canvas gloves. Respiratory protection: No tero and respiratory protective equipment normally required. Protective messures: Facilities storing or utilizing this material should be equipped with an eyewash facility.

## facility. Engineering measures: None required under normal operating conditions.

#### 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	
Form	Beads
Colour	black opaque
Odour	Odorless
pH	3.0 - 5.0 Aqueous slurry
Boiling point/boiling range	100 °C (212.00 °F) Water
Melting point/range	0 °C (32 °F) Water
Flash point	not applicable
Ignition temperature	ca.500 °C (932.00 °F)
Lower explosion limit	not applicable
Upper explosion limit	not applicable
Vapour pressure	17.0 mmHg at 20 °C (68.00 °F) Water
Relative vapour density	<1.0Water
Water solubility	practically insoluble
Relative density	1.25
Evaporation rate	<1.00 Water
Percent volatility	44 - 53 %

NOTE: The physical data presented above are typical values and should not be construed as a

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#### 10. STABILITY AND REACTIVITY

dous reactions Stable under normal conditions.

Materials to avoid Avoid contact with the following: Strong Oxidizers

Hazardous Thermal decomposition may yield the following:, monomer vapors, decomposition products

Product will not undergo polymerization. polymerisation

#### 11. TOXICOLOGICAL INFORMATION

No data are available for this material. The information shown is based on profiles of compositionally Co

Acute oral toxicity LD50 rat >2,000 mg/kg

Component: Strong acid cation exchange polymer, hydrogen ion form Acute inhalation toxicity LC50 rat 4 h 11 mg/l

Component: Strong acid cation exchange polymer, hydrogen ion form Skin irritation rabbit OECD Test Guideline 404.4 h non-imit

Component: Strong acid cation exchange polymer, hydrogen ion form Eye irritation rabbit OECD Test Guideline 405 24 h Corros

Component: <u>Strong acid cation exchange polymer, hydrogen ion form</u> Mutagenicity Reverse mutation test using bacteria: Non-mutagenic with and without metabolic activation

12. ECOLOGICAL INFORMATION

There is no data available for this product.

13. DISPOSAL CONSIDERATIONS

Disposal Waste Classification: When a decision is made to discard this material as supplied, it does not n RCRA's characteristic definition of ignitability, corrosivity, or reactivity, and is not listed in 40 CFR 261.33. The toxicity characteristic (TC), however, has not been evaluated by the Toxicity Characte Leaching Proceedure (TCLP). Unused material may be incinerated or landtilled to familiate

Virused material may be incinerated or landilied in facilities meeting local, state, and federal regulations. (See 40 CFR 268) Contaminated packaging: Empty containers should be taken to local recyclers for disposal. Refer to applicable federal, state, and local regulations.

Not regulated for transport

14. TRANSPORT INFORMATION

DOT

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#### IMO/IMDG

Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations

Not regulated (Not dangerous for transport)

15. REGULATORY INFORMATION

Workplace Classification OSHA: This product This product is considered hazardous under the OSHA Hazard Communication Standard (29 CFR 1910.1200).

WHMIS: This product is a 'controlled product' under the Canadian Workplace Hazardous Materials Information System (WHMIS).

SARA TITLE III: Section 311/312 Categorizations (40CFR370): Acute Health Hazard SARA TITLE III: Section 313 Information (40CFR372) This product does not contain a chemical which is listed in Section 313 at or above de minimis

concentrations. CERCLA Information (40CFR302.4)

CETALLA Information (40CFR302.4) Releases of this material to air, land, or water are not reportable to the National Response Center under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) or to state and local emergency planning committees under the Superfund Amendments and Reauthorization Act (SARA) Titel III Section 30.4 US. Toxic Substances Control Act (TSCA): All components of this product are in compliance with the inventory listing requirements of the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

16. OTHER INFORMATION

Hazard F		

Hazard R	ating				
		Health	Fire	Reactivity	
HMIS		3	1	0	
Legend					
ACGIH	America	n Conference of Gov	emmental Industria	I Hygionists	
BAc	Butyl ace	state		20.00	
OSHA	Occupat	ional Safety and Hea	th Administration		
PEL	Permissi	ble Exposure Limit			
STEL	Short Te	rm Exposure Limit (S	TEL):		
TLV	Threshol	d Limit Value	NAME AND A DECIMAL OF A DECIMAL		
TWA	Time We	ighted Average (TW)	A):		
L	Bar deno	tes a revision from p	for MSDS		

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unles specified in the text.

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01/21/2010





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**Revision** date



BRENNTAG	SAFETY DATA SH	EET		4. First-aid measures	
-300				inhalation	Move to fresh air. Call a physician if symptoms develop or persist.
				Skin contact	Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a physician or poison control center immediately. Chemical burns must be treated by a physician. Wash contaminated lothing before reuse.
1. Identification Product identifier	AQUACHLOR 12.5% NSF SODIUM HYPOC	NI OBITE		Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing, Call a physician or poison control center immediately.
Other means of identification	None.	ALORITE		Ingestion	Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting, if vomiting occurs, keep head low so that stomach content doesn't get into the lungs
Recommended use	ALL PROPER AND LEGAL PURPOSES			Most important	Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may
Recommended restrictions	None known.			symptoms/effects, acute and	Include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including
Manufacturer/Importer/Supplier	/Distributor information			delayed	blinchess could result
Manufacturer				Indication of immediate medical attention and special	Provide general supportive measures and treat symptomatically. Chemical burns: Flush with wat immediately. While flushing, remove clothes which do not adhere to affected area. Call an
Company name Address	Brenntag Southwest, Inc. 610 Fisher Road			treatment needed	ambulance. Continue flushing during transport to hospital. Keep victim under observation. Symptoms may be delayed.
Telephone E-mail	Longview, TX 75604 903-759-7151 Not available.			General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.
Emergency phone number	S00-424-9300 CHEMTREC			5. Fire-fighting measures	
				Suitable extinguishing media	Foam, Powder, Carbon dioxide (CO2)
2. Hazard(s) identification	I			Unsuitable extinguishing	Do not use water jet as an extinguisher, as this will spread the fire.
Physical hazards	Not classified.			media	
Health hazards	Skin corresion/irritation Serious eye damage/eye irritation	Category 1 Category 1		Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Environmental hazards OSHA defined hazards	Not classified Not classified			Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Label elements	hat on annov.			Fire fighting equipment/instructions	Move containers from fire area if you can do so without risk.
	$\wedge$			Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
	(23)			General fire hazards	No unusual fire or explosion hazards noted.
	$\sim$			<ol><li>Accidental release measure</li></ol>	
Signal word	Danger			Personal precautions, protective equipment and	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor. Do
Hazard statement					not touch damaged containers or spilled material unless wearing appropriate protective clothing.
Precautionary statement				emergency procedures	Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Prevention	Do not breathe mist or vapor. Wash thorough clothing/eye protection/face protection.	ly after handling. Wear protect	ive gloves/protective	Methods and materials for	Use water spray to reduce vapors or divert vapor cloud onit. Prevent entry into waterways, sewe
Response	If swallowed Rinse mouth, Do NOT induce v contaminated clothing, Rinse skin with water			containment and cleaning up	basements or confined areas. Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this i
	keep comfortable for breathing. If in eyes: Ri Remove contact lenses, if present and easy t center/doctor. Wash contaminated clothing b	ise cauliously with water for se o do. Continue rinsing. Immed	verai minutes		Large opinits step the new of interface in bins is which take. Drive the space interface while it is a possible. Absorb in vermicultie, dry sand or earth and place into containers. Following product recovery, flush area with water.
Storage	Store locked up.				Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to
Disposal	Dispose of contents/container in accordance	with local/regional/national/inte	emational regulations.		remove residual contamination.
Hazard(s) not otherwise classified (HNOC)	None known.				Never return spills to original containers for re-use. For waste disposal, see section 13 of the SD For waste disposal, see section 13 of the SDS.
Supplemental information	12.5% of the mixture consists of component( mixture consists of component(s) of unknown		kicity. 99.3% of the	Environmental precautions	Avoid discharge into drains, water courses or onto the ground.
3. Composition/information	on inpredients			7. Handling and storage	
Mixtures				Precautions for safe handling	Do not breathe mist or vapor. Do not get in eyes, on skin, or on clothing. Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment. Obser good industrial hygiene practices.
Chemical name	Common name and synonyms	CAS number	%	Conditions for safe storage,	Store locked up. Store in original tightly closed container. Store away from incompatible materials
HYPOCHLOROUS ACID. SOC SALT (1:1)		7681-52-9	12.5	including any incompatibilities	(see Section 10 of the SDS). Store away from incompatible materials (see Section 10 of the SDS
SODIUM HYDROXIDE (NA(O		1310-73-2	0.7		
Other components below repo-		a has a subhistid sa a far de sur	86.8		
Designates that a specific chemic Material name: AQUACHLOR 12.5%	cal identity and/or percentage of composition ha	e deen wanneid as a tradé sec	101. SUS US	Material name: AQUACHLOR 12.5%	NSF SOORM HYPOCHLORITE. S03
	NSF SUDIOM HYPOCHLON It: ats: 10-24-2018 Issue date: 07-02-2015		1/8	200001 Version # 17 Revision da	

	Upper/lower flammability or exp	losive limits
	Flammability limit - lower	Not available.
	(%)	
	Flammability limit - upper (%)	Not available.
	Explosive limit - lower (%)	Not available.
	Explosive limit - upper (%)	Not available.
	Vapor pressure	Not available
	Vapor density	Not available.
	Relative density	Not available.
	Solubility(ies)	
	Solubility (water)	Not available.
	Partition coefficient (n-octanol/water)	Not available
	Auto-ignition temperature	Nof available
	Decomposition temperature	Not available.
·	Viscosity	Not available.
	Other information	
	Density	10. t 4 ibsigat
	Explosive properties	Not explosive.
ion.	Oxidizing properties	Not oxidizing.
. If	Percent volatile	86.8 % estimated
ye	Specific gravity	1 22
	10. Stability and reactivity	
am a	Reactivity	Reacts violently with strong acids. This product may react with oxidizing agents.
use	Chemical stability	Material is stable under normal conditions.
	Possibility of hazardous reactions	Hazardous polymerization does not occur.
	Conditions to avoid	Contact with incompatible materials. Do not mix with other chemicals.
ve	Incompatible materials	Acids. Oxidizing agents.
	Hazardous decomposition products	No hazardous decomposition products are known.
	<ol> <li>Toxicological informat</li> </ol>	ion
	Information on likely routes of e	xposure
al	Inhalation	May cause irritation to the respiratory system. Prolonged inhalation may be harmful.
	Skin contact	Causes severe skin burns.
	Eye contact	Causes serious eye damage.
	Ingestion	Causes digestive tract burns.
	Symptoms related to the physical, chemical and toxicological characteristics	Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelting, and blurred vision. Permanent eye damage including bindness could result.
	Information on toxicological effe	ects
	Acute toxicity	Not known.
	Skin corrosion/irritation	Causes severe skin burns and eye damage.
	Serious eye damage/eye irritation	Causes serious eye damage.
	Respiratory or skin sensitization	
	Respiratory sensitization	Not a respiratory sensitizer.
	Skin sensitization	This product is not expected to cause skip sensitization.
	Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
SUS US	Material name: AQUACHLOR 12.5%	NSF SC/JUM HYPOCHLORITE Sos as

#### 8. Exposure controls/personal protection

Accupational	avaoouro	limite

Occupational exposure limits	for Six Contaminants (SS CED 4546 4556)	
Components	for Air Contaminants (29 CFR 1910.1000) Type	Value
SODIUM HYDROXIDE (NA(OH)) (CAS 1310-73-2)	PEL	2 mg/m3
US. ACGIH Threshold Limit Components	Values Type	Value
SODIJM HYDROXIDE (NA(OH)) (CAS 1310-73-2)	Ceiling	2 mg/m3
US. NIOSH: Pocket Guide to Components	o Chemical Hazards Type	Value
SODIUM HYDROXIDE (NA(DH)) (CAS 1310-73-2)	Çeiling	2 mg/m3
US. Workplace Environmen Components	tal Exposure Level (WEEL) Guides Type	Value
HYPOCHLOROUS ACID, SODIUM SALT (1:1) (CAS 7661-52-9)	STEL	2 mg/m3
Biological limit values	No biological exposure limits noted for the	ingrecient(s).
Appropriate engineering controls	should be matched to conditions. If application of other engineering controls to maintain a	hanges per hour) should be used. Ventilation rates able, use process enclosures, local exhaust ventilation, informe levels below recommenced exposure limits, if , maintain arithorne levels to an acceptable level. Eye st be available when handling this product.
The following are recommend Hazard Assessment of the wo		PPE). The employer/user of this product must perform FR 1910.132 to determine the appropriate PPE for us
Eye/face protection	Wear safety glasses with side shields (or g	oggles) and a face shield.
Skin protection		
Hand protection	Wear appropriate chemical resistant glove supplier.	s. Suitable gloves can be recommended by the glove
Other	Wear appropriate chemical resistant clothi	ng.
Respiratory protection	In case of insufficient ventilation, wear suit	able respiratory equipment.
Thermal hazards	Wear appropriate thermal protective clothi	ng, when necessary.
General hygiene considerations		easures, such as washing after hanoting the material g. Routinely wash work clothing and protective
9. Physical and chemical	properties	
opearance		
Physical state	Liquid.	
Form	Liquid.	
Color	Not available	
dor	CHLORINE	
dor threshold	Not available	
н	115-13.5	
Auting point/freezing point	10 °F (-12 22 °C)	
nitial boiling point and boiling ange	230.55 °F (110.3 °C) estimated	
lash point	Not available	

Not available Not applicable.

Evaporation rate Flammability (solid, gas)

	A	1 I.	
Darcinogenicity		as to carchogenicity to humans.	
IARC Monographs, Overall E Not listed.	valuation of Ca	srcinogenicity	
OSHA Specifically Regulated	i Substances (i	29 CFR 1910.1001-1052)	
Not regulated. US. National Toxicology Prog	yram (NTP) Rej	port on Carcinogens	
Not listed. Reproductive toxicity	This would be be	not expected to cause reproductive or de-	
Reproductive toxicity Specific target organ toxicity -	Not classified	Hot expected to cause reproductive of de-	velopmentar ellecis.
single exposure			
Specific target organ toxicity - epeated exposure	Not classified.		
Aspiration hazard	Not an aspirati		
Chronic effects	Prolonged inha	liation may be harmful	
12. Ecological information			
Ecotoxicity		not classified as environmentally hazardo large or frequent spills can have a harmfu	
Components		Species	Test Results
HYPOCHLOROUS ACID. SOE	DIVM SALT (1:1	) (CAS 7681-52-9)	
Aquatic			
Fish L	.C50	Chinook salmon (Oncorhynchus tshawytscha)	0.038 - 0 065 mg/l, 96 hours
SODIUM HYDROXIDE (NA(OF	4)) (CAS 1310-1	3.2)	
Aquatic			
	EC50	Water flea (Ceriodaphnia dubia)	34 59 - 47.13 mg/l, 48 hours
	.C50	Western mosquitofish (Gambusia affinis)	125 mg/l, 96 hours
Persistence and degradability		lable on the degradability of this product.	
Bioaccumulative potential	No data availa		
Nobility In soli	Ne data availat		
Other adverse effects	No other adver potential, endo	se environmental effects (e.g. ozone depli crine disruption, global warming potential)	etion, photochemical ozone creation are expected from this component.
13. Disposal consideration	5		
Disposal instructions		laim or dispose in sealed containers at lic iner in accordance with local/regional/nation	
ocal disposal regulations		ordance with all applicable regulations.	
fazardous waste code	disposal comp.		
Naste from residues / unused products		coordance with local regulations. Empty c es. This material and its container must be ctions).	
Sontaminated packaging	Since emptied emptied. Empt disposal.	containers may retain product residue, fol y containers should be laken to an approv	tow labet warnings even after container is ed waste handling site for recycling or
14. Transport information			
тос			
UN number UN proper shipping name Transport hazard class(es)	UN1791 HYPOCHLORI	TE SOLUTIONS MARINE POLLUTANT	(SODIUM HYPOCHLORITE) RQ
Class	8		
Subsidiary risk	101		
Packing group Special precautions for user ERG number		structions, SDS and emergency procedure	es before handling.
	ISF SODIUM HYP	POCHLORITE.	sos o
Material name: AQUACHLOR 12.5% N		sue date: 07-02-2015	5/8

#### 15, Regulatory information

15. Regulatory informat			
US federal regulations	This product is a "Hazardou Standard, 29 CFR 1910.120	s Chemical" as defined by the OSHA H X0.	azaro' Communication
	rt Notification (40 CFR 707, Su	bpt. D)	
Not regulated.	stance List (40 CFR 302.4)		
	ID. SODIUM SALT (1:1) (CAS	Listed.	
76B1-52-9)			
SARA 304 Emergency rel	E (NA(OH)) (CAS 1310-73-2) ease notification	Listed.	
Not regulated.	ated Substances (29 CFR 1910	1001 1050)	
Not regulated.	aed oubstances (25 CFR 1810	1001-1032)	
-	Reauthorization Act of 1986 (S	ARA)	
SARA 302 Extremely haz Not listed.			
SARA 311/312 Hazardous chemical	; Yes		
Classified hazard categories	Skin corrosion or irritation Serious eye damage or eye	Irritation	
SARA 313 (TRI reporting) Not regulated.			
Other federal regulations			
Clean Air Act (CAA) Sect	on 112 Hazardous Air Pollutar	its (HAPs) List	
Not regulated. Clean Air Act (CAA) Sect	on 112(r) Accidental Release F	revention (40 CFR 68.130)	
Net regulated.			
Safe Drinking Water Act (SDWA)	Not regulated.		
US state regulations			
California Propositio			
is not known to co		rent Act of 2016 (Proposition 65): This r led as carcinogens or reproductive toxin	
subd. (a))		sumer Products Regulations (Cal. C	ode Regs, tit. 22, 69502.3,
	XIDE (NA(OH)) (CAS 1310-73-2	)	
International Inventories			
Country(s) or region Australia	Inventory name Australian Inventory of Cher	- leal extension (\$100)	On inventory (yes/no) Ye
Canada	Domestic Substances List (i		re Ye
Canada	Non-Domestic Substances I	,	/G
China		cal Substances in China (IECSC)	Ye
Europe	European inventory of Exist Substances (EINECS)		Ye
-	European List of Notified Ch	emical Substances (ELINCS)	N
Europe	Invectory of Existing and Ne	w Chemical Substances (ENCS)	Ye
Lumpe Japan		1.3	Ye
Japan Korez	Existing Chemicals List (EC	u)	
Japan Korez New Zealand	New Zealand Investory		Ye
Japan Korez	New Zealand Investory	nicals and Chemical Substances	

# Transport information on packaging may be different from that listed. Transportation information on packaging may be different from that listed. JATA UN number UN1791 HYPOCHLORITE SOLUTIONS MARINE POLLUTANT (SODIUM HYPOCHLORITE) RO UN number UM1791 UN proper shipping name HYPOCHLORITE SOLUTIONS MARINE POLLUTANT (SODIUM HYPOCH Transport hazard class(es) Class 8 Subbidiary risk Packing group III Environmental hazards No ERK0 Code 154 Special precautions for user Read safety instructions, SDS and emergency procedures before handling. IM member UN2087 UN3082 UN number UN proper shipping name ENVIRONMENTALLY HAZARDOUS SUBSTANCE. LIQUID, N.O.S. (HYPOCHLOROUS ACID, SODIUM SALT (1:1)), MARINE POLLUTANT Transport hazard class(es) Iransport hazato cass(s) Class 9 Subsidiary risk -Packing group III Environmental hazards Marine pollutant Yes EmS F-A, S-F Special precautions for user Read safety instructions, SDS and emergency procedures before handling. DOT; IATA IMDG 9 Marine pollutant General information IMDG Regulated Marine Pollutant Material name: AQUACHLOR 12.5% NSF SCORUM HYPOCHLORITE 200001 Version # 17 Revision date: 10-24-2018 Issue date: 07-02-2015 sus us 6 / 8 Country(s) or region Inventory name On inventory (yes/no) United States & Puerto Rico Toxic Substances Control Act (TSCA) Inventory Yet "A" "ref" indicates that all components of the product comply with the inventory ingurerenaits administered by the governing country(s) A "No" indicates that one or more components of the product are not listed or exempt from issing on the inventory administered by the governing country(s) Country(s) or region On inventory (yes/no)\* Yes.

16. Other information, including date of preparation or last revision 07-02-2015

17 Health: 3 Flammability. 0 Physical hazard: 0 Health: 3 Flammability: 0 Instability: 0

Instability: 0 While Brenntag believes the information contained herein to be accurate. Brenntag makes no representation or warrardy, express or implied, regarcing, and assumes no tability for, the accuracy or completeness of the information. The Buyer assumes all responsibility for handling, using and/or revealing the Product in accordance with applicable federal, state, and local law. This SDS shall not in any way limit or preclude the operation and effect of any of the provisions of Brentag's terms and conditions of sale. Hazard(s) identification: Response Hazard(s) identification: Response Hazard(s) identification: Supplemental information Physical and chemical properties: Color Toxicological information: Acute toxicity

10-24-2018

17

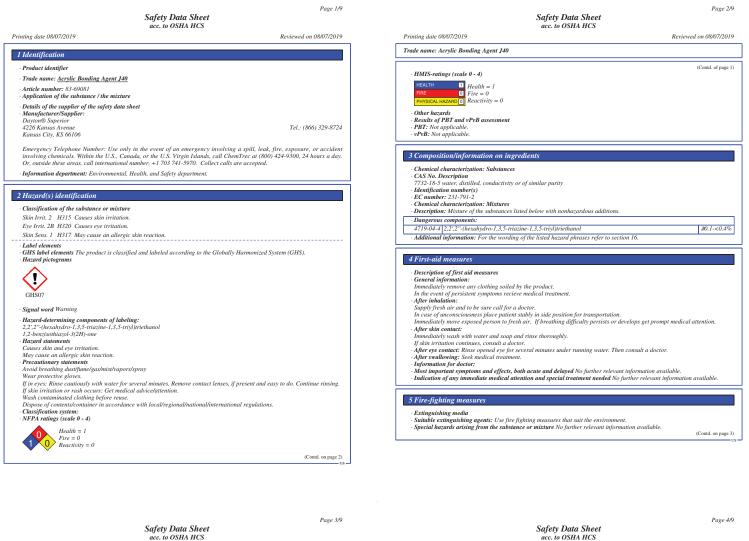
issue date Revision date

Version#

Disclaimer

Revision information

HMIS® ratings NFPA ratings



Printing date 08/07/2019

Sajety Data Sheet acc. to OSHA HCS	
nting date 08/07/2019	Reviewed on 08/07/201
de name: Acrylic Bonding Agent J40	
Advice for firefighters	(Contd. of page
Annee op in programs Protective equipment: Because fire may produce thermal decomposition products, wear a self-contained breathing a piece operated in pressure-demand or positive-pressure mode.	pparatus (SCBA) with a full fac
Accidental release measures	
Personal precautions, protective equipment and emergency procedures	
Wear protective equipment. Keep unprotected persons away. Environmental precautions:	
Dilute with plenty of water.	
Do not allow product to reach sewage system or any water course.	
Inform respective authorities in case of seepage into water course or sewage system. Do not allow to enter sewers/ surface or ground water.	
Methods and material for containment and cleaning up:	
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust	r).
Ensure adequate ventilation. Reference to other sections	
See Section 7 for information on safe handling.	
See Section 8 for information on personal protection equipment.	
See Section 13 for disposal information. Protective Action Criteria for Chemicals	
Protective Action Criteria for Chemicais PAC-1:	
4719-04-4 2,2',2"-(hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol	2.3 mg/m
1310-73-2 sodium hydroxide	0.5 mg/m
PAC-2:	
4719-04-4 2,2',2"-(hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol	25 mg/m
1310-73-2 sodium hydroxide	5 mg/m <sup>3</sup>
PAC-3:	5
4719-04-4 2,2',2"-(hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol	150 mg/m
1310-73-2 sodium hydroxide	50 mg/m <sup>3</sup>
1510-75-2 souran nyuroxue	50 mg/m
Handling and storage	
Handling:	
Precautions for safe handling	
Wear appropriate personal protective clothing to prevent eye and skin contact. Avoid br	reathing vapors or mists of th
product. Use with adequate ventilation. Do not take internally. Information about protection against explosions and fires: No special measures required.	
Conditions for safe storage, including any incompatibilities	
Storage: cool and dry Requirements to be met by storerooms and receptacles: No special requirements.	
Information about storage in one common storage facility: Store away from foodstuffs.	
Information about storage in one common storage facility: Store away from foodstuffs. Further information about storage conditions: Keep receptacle tightly sealed. Specific end use(s) No further relevant information available.	

Trade name: Acrylic Bonding Agent J40 (Contd. of page 3) 8 Exposure controls/personal protection Additional information about design of technical systems: No further data; see item 7. Control parameters Components with limit values that require monitoring at the workplace: The product does not contain any relevant quantities of materials with critical values that have to be monitored at the Additional information: The lists that were valid during the creation were used as basis. Additional information: The lists that were valid during the creation were us
 Exposure controls
 Personal protective equipment:
 General protective and hygienic measures:
 Keep away from foodstuffs, beverages and feed.
 Immediately remove all solied and contaminated clothing.
 Wash hands before breaks and at the end of work.
 Avoid contact with the eyes and skin.
 Pretathing equipments:
 Personal situates and solid respiratory protective device recommended.
 Protection of hands: Protective gloves The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. The glove material has to be impermeable and resistant to the product the substance the preparation. Material of gloves The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. Penetration time of glove material The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed. Experiation: Wear appropriate eye protection to prevent eye contact. 9 Physical and chemical properties Information on basic physical and chemical properties General Information Appearance Form: Color: Liquid White Odorless Not determined. Odor: Odor threshold: · pH-value: Not determined. Change in condition
 Melting point/Melting range:
 Boiling point/Boiling range:  $\begin{array}{c} 0 \ ^{\circ}C \ (32 \ ^{\circ}F) \\ 100 \ ^{\circ}C \ (212 \ ^{\circ}F) \end{array}$ Not applicable. · Flash point: · Flammability (solid, gaseous): Not applicable. · Decomposition temperature: Not determined Auto igniting: Product is not selfigniting. (Contd. on page 5)

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Printing date 08/07/2019

Trade name: Acrylic Bonding Agent J40

11 Toxicological information

Acute toxicity

Information on toxicological effects

Acute usative: Primary irritant effect: on the skin: May cause skin irritation. on the eye: Strong irritant with the danger of severe eye injury. Irritating effect.

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(Contd. on page 6)

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#### Safety Data Sheet acc. to OSHA HCS

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(Contd. of page 5)

	(Contd. of	page 4
· Danger of explosion:	Product does not present an explosion hazard.	
· Explosion limits: Lower: Upper:	Not determined. Not determined.	
· Vapor pressure at 20 °C (68 °F):	23 hPa (17.3 mm Hg)	
Density at 20 °C (68 °F):     Relative density     Vapor density     Evaporation rate	1.03573 g/cm <sup>3</sup> (8.64317 lbs/gal) Not determined. Not determined. Not determined.	
<ul> <li>Solubility in / Miscibility with Water:</li> </ul>	Not miscible or difficult to mix.	
· Partition coefficient (n-octanol/wate	r): Not determined.	
· Viscosity: Dynamic: Kinematic:	Not determined. Not determined.	
· Solvent content: Water:	48.5 %	
Solids content: • Other information	25.0 % No further relevant information available.	
· Volatile Organic Compounds:	Contains less than 50 g/L.	
Possibility of hazardous reactions No Conditions to avoid Keep away from Incompatible materials: No further r	if stored and applied as directed to be avoided: No decomposition if used according to specifications. o daggerous reactions known. heat and sources of ignition.	

, manung especi. Sensitization: Sensitization possible through skin contact. Additional toxicological information: The product shows the following dangers according to internally approved calculation methods for preparations: Irritant

# 13 Disposal consideratio

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Trade name: Acrylic Bonding Agent J40

NTP (National Toxicology Program) of the ingredients is list

None of the ingredients is listed. 12 Ecological information

• IARC (International Agency for Research on Cancer) None of the ingredients is listed.

· OSHA-Ca (Occupational Safety & Health Administration)

Carcinogenic categories

Waste treatment methods Recommendation: Must not be disposed of as normal garbage. Do not allow product to reach sewage system. It is the generator's responsibility to determine if the waste meets applicable definitions of hazardous waste. State and local regulations may differ from federal disposal regulations. Dispose of waste material according to local, state, federal, and provincial environmental regulations.

Uncleaned packagings: Recommendation: Disposal must be made according to Federal, State, and Local regulations.

14 Transport information		
Not Regulated		
Not Regulated		
	0	

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	Data Sheet OSHA HCS
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Trade name: Acrylic Bonding Agent J40	
	(Contd. of page 6)
· Transport hazard class(es)	
· DOT, ADR, ADN, IMDG, IATA · Class	Not Regulated
· Packing group · DOT, ADR, IMDG, IATA	Not Regulated
Environmental hazards: Marine pollutant:	No
Transport in bulk according to Annex II of MARPOL73/ and the IBC Code	78 Not applicable.
	Noi uppicable.
Transport/Additional information:	
ADR U.S. Domestic Ground Shipments: U.S. Domestic Ground Non-Bulk (119 gal or less per	Same as listed for Standard Shipments above.
container) Shipments:	Same as listed for Standard Shipments above.
Emergency Response Guide (ERG) Number:	Not determine
· UN "Model Regulation":	Not Regulated
15 Regulatory information	
Safety, health and environmental regulations/legislation     Sara	specific for the substance or mixture
Section 355 (extremely hazardous substances):	
None of the ingredient is listed.	
	ject to the reporting requirements of Section 313 of Title III of the of 1986 and 40 CFR part 372. If so, the chemicals are listed below.
None of the ingredients is listed.	
TSCA (Toxic Substances Control Act):	
4719-04-4 2,2',2"-(hexahydro-1,3,5-triazine-1,3,5-triyl)tr	iethanol
1310-73-2 sodium hydroxide	
2634-33-5 1,2-benzisothiazol-3(2H)-one 7732-18-5 water, distilled, conductivity or of similar puri	4u
Proposition 65	y
Chemicals known to the State of California (Prop. 65) to	cause cancer:
None of the ingredients is listed.	
Chemicals known to cause reproductive toxicity for fema	les:
None of the ingredients is listed.	
· Chemicals known to cause reproductive toxicity for male	s:
None of the ingredients is listed.	
· Chemicals known to cause developmental toxicity:	
None of the ingredients is listed.	
-	(Contd. on page 8)

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rade name: Acrylic Bonding Agent J40	
	(Contd. of page
· Cancerogenity categories	
· EPA (Environmental Protection Agency)	
None of the ingredients is listed.	
· TLV (Threshold Limit Value established by ACGIH)	
None of the ingredients is listed.	
MAK (German Maximum Workplace Concentration)	
None of the ingredients is listed.	
· NIOSH-Ca (National Institute for Occupational Safety and Health)	
None of the ingredients is listed.	
GHS label elements The product is classified and labeled according to the Glo Hazard pictograms	bally Harmonized System (GHS).
GHS07	
Signal word Warning	
Hazard-determining components of labeling:     2.2.2 <sup>2</sup> (hexaliyatro-1,3,3-rritatine-1,3,3-trity]triethanol     1.2-hereistohiazol-3(2H)-one     Hazard statements     Causes skin and eye irritation.     May cause an allergic skin reaction.     Precautionary statements     Avoid breathing dustfjume/gas/mist/vapors/spray     Wear protective gloves.     If in eyes: Rinse cautionsly with water for several minutes. Remove contact len.     If skin irritation or rash occurs: Get medical advice/attention.     Wash contaminated clothing hefore reuse.     Dispose of contents/container in accordance with local/regional/national/inter     . Chemical safety assessment: A Chemical Safety Assessment has not been carror	national regulations.
16 Other information	
This information is based on our present knowledge. However, this shall not features and shall not establish a legally valid contractual relationship.	constitute a guarantee for any specific produ
Department issuing SDS: Environmental, Health & Safety Department     Contact: Environmental, Health & Safety Manager     Date of preparation   last revision 08/07/2019 / 185     Abbr endoms and accorptics     Abbr endoms and accorptication     Abbr endoms according and accorptication     Abbr endoms according accord accord according accord acco	
rimis: riazaraous maieriais iaenujication system (USA)	(Contd. on page

Safety	Data	Shee
	OCHA	HCC

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Trade name: Acrylic Bonding Agent J40 PBT: Pervisione, Bioaccumulative and Taxie vPaE: very Persitaent and very Bioaccumulative NOSH: National hustine for Cocopational Safety OSH: A Cocupational Safety & Health PEL: Permissible Exposure Limit REL: Recommended Exposure Limit Skin Irriz : Skin corrosion/tratation – Category 2 Syn Priz: 2: Skin corrosion/tratation – Category 2B Skin Sens. 1: Skin sensitisation – Category 1 (Contd. of page 8)



# Safety Data Sheet (SDS) Com Standard 29 CFR 1910.1200(g) and C

/ I GHS Rev 03.

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Reviewed on 11/04/2019

Issue date 11/04/2019

OSHA HarCo

1 Identificatio Product Identifier Trade Name: Carbon Steel Electrodes and Rods for Gas Shielded Arc Welding ct Number Specification: A5.18 Classification: E70C-6M, ER70S-2, ER70S-2 (Copper Free), ER70S-3, ER70S-4, ER70S-6, ER70S-6 (Copper Free) (Copper Free) Carbon steel electrodes and rods for gas shielded arc welding Relevant identified uses of the substance or mixture and uses advised against: For professional use only. Use according to manufacturer's specification. Product Description: Carbon steel electrodes and rods for gas shielded arc welding. Application of the substance / the mixture: Industry specific application. Details of the Supplier of the Safety Data Sheet: Manufacturer/Supplier SOWESCO I, LLC 9384 Wallisville Road Houston, TX 77013 Telephone: 800-856-9353 Emergency telephone number: 713-688-9353 Classification of the substance or mixture: Health hazard Carc. 1A H350 May cause cancer. STOT RE 1 H372 Causes damage to organs through prolonged or repeated exposure. Corrosion Eye Dam. 1 H318 Causes serious eye damage. 



Iron Lithium

Skin Irrit. 2 H315 Causes skin irritation Skin Sens. 1 H317 May cause an allergic skin reaction. STOT SE 3 H335 May cause respiratory irritation. Label elements: Hazard pictogra

Hazard-determining components of labeling:

Signal word: Danger

(Contd. on page 2)

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# Trade Name: Carbon Steel Electrodes and Rods for Gas Shielded Arc Welding

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Safety Data Sheet (SDS)

d 29 CFR 1910.120

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Silica	
Nickel	
Titanium	
Hazard statements:	
H315 Causes skin irritation.	
H318 Causes serious eye damage.	
H317 May cause an allergic skin reaction.	
H350 May cause cancer.	
H335 May cause respiratory irritation.	
H372 Causes damage to organs through prolonged or repeated exposure.	
Precautionary statements:	
P201 Obtain special instructions before use.	
P202 Do not handle until all safety precautions have been read and understood.	
P260 Do not breathe dust/fume/gas/mist/vapors/spray.	
P264 Wash thoroughly after handling.	
P270 Do not eat, drink or smoke when using this product.	
P271 Use only outdoors or in a well-ventilated area.	
P272 Contaminated work clothing must not be allowed out of the workplace.	
P280 Wear protective gloves/protective clothing/eye protection/face protection.	
P302+P352 If on skin: Wash with plenty of water.	
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.	
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, in	t
present and easy to do. Continue rinsing.	
P308+P313 IF exposed or concerned: Get medical advice/attention.	
P312 Call a poison center/doctor if you feel unwell. P321 Specific treatment (see supplementary first aid instructions on this Safety Data Sheet).	
P333+P313 If skin irritation or rash occurs: Get medical advice/attention. P363 Wash contaminated clothing before reuse.	
P403+P233 Store in a well-ventilated place. Keep container tightly closed.	
P405 Store locked up.	
P501 Dispose of contents/container in accordance with local/regional/national/internationa	
regulations.	1
Unknown acute toxicity:	
This value refers to knowledge of known, established toxicological or ecotoxicological values.	

17 % of the mixture consists of component(s) of unknown toxicity.

17 % of the mixture consists of component(s) of unknown toxicity. Hazard description: Lithium may explode when in contact with water. Exposure to moist air may result in fire. Lithium can react with water to produce flammable hydrogen gas, which may create a fire and explosion hazard. Spontaneous ignition can occur if Lithium is heated to its melting point. Lithium dusts may ignite spontaneously in moist air. Lithium can react with moisture to produce corrosive compounds. NEVER purge open drums with nitrogen before resealing. Store and transport under argon or mineral oil. Classification system: NFPA/HMIS Definitions: 0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme NFPA ratings (scale 0 - 4)







(Contd. on page 3)

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Safety Data Sheet (SDS) OSHA Haz d 29 CFR 1910.1200(a) and GHS Rev 03. Issue date 11/04/2019 Reviewed on 11/04/2019 Trade Name: Carbon Steel Electrodes and Rods for Gas Shielded Arc Welding Hazard(s) not otherwise classified (HNOC): None known Non-hazardous components: 1317-61-9 Iron Oxide 0-12% Chemical characterization: Mixtures Description: Mixture of substances listed below with non-hazardous additions. . Dangerous Components: 
 CAS: 7439-86
 Iron

 RTECS: NO 4565500
 Flam. Sol. 2, H228; Skin Irrit. 2, H315; STOT SE 3, H335; Eye Irrit. 2B, H320; Combustible Dust
 85-99% CAS: 7440-39-3 RTECS: CQ 8370000 CAS: 13463-67-7 Titanium Dioxide 0-10% 0-10% 🕹 Carc. 2, H351 CAS: 1317-95-9 0-3% Silica 🚸 Carc. 1A, H350; 🚯 STOT SE 3, H335 CAS: 7439-93-2 RTECS: OJ 5540000 0-9% Lithium Water-react. 1, H260; Skin Corr. 1B, H314 CAS: 7429-90-5 RTECS: BD 0330000 0-5% 
 KTECS: D0 20000
 Ø Fallin: Sol. 2, H228

 CAS: 7439-95-4
 Magnesium

 RTECS: OM 2100000
 Ø Pyr. Sol. 1, H250; Water-react. 1, H260

 CAS: 7440-02-0
 Nickel
 0-3% 0-3% CAS: 7440-21-3 0-1.5% CAS: 1309-48-4 0-1% Acute Tox. 4. H302 CAS: 1344-28-1 0-1% Aluminium Oxide STOT SE 3, H335 Molybdenum RTECS: BD 1200000 CAS: 7439-98-7 RTECS: QA 4680000 0-1% 0-1% CAS: 7440-50-8 RTECS: GL 5325000 Coppe Fiam. Sol. 1, H228; () STOT SE 3, H335; Aquatic Acute 3, H402; Aquatic Chronic 4, H413 CAS: 7440-67-7 RTECS: ZH 7070000 CAS: 7631-86-9 Zirconium (\*) Pyr. Sol. 1, H250; Water-react. 1, H260 0-1% 0-2% Silicon Dioxide Skin Irrit. 2, H315; STOT SE 3, H335; Eye Irrit. 2B, H320 CAS: 7440-32-6 Titanium ≤2.5% RTECS: XR 1700000 🔅 Skin Irrit. 2, H315; Skin Sens. 1, H317; Eye Irrit. 2B, H320 Additional information: The exact percentages of the ingredients of this mixture are considered to be proprietary and are withheld in accordance with the provisions of paragraph (i) of §1910.1200 of 29 CFR 1910.1200 Trade Secrets. (Contd. on page 4)

#### Safety Data Sheet (SDS) Com Standard 29 CFR 1910.1200(g) and C GHS Rev 03

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120 mg/m<sup>3</sup>

170 ma/m<sup>3</sup>

330 mg/m<sup>3</sup>

330 mg/m<sup>3</sup>

33 mg/m<sup>3</sup> 83 mg/m<sup>3</sup>

740 mg/m<sup>3</sup> 330 mg/m

330 mg/m<sup>3</sup>

5.8 mg/m<sup>3</sup>

150 ma/m<sup>3</sup>

1,100 mg/m<sup>3</sup> 2,000 mg/m3

1,400 mg/m<sup>3</sup>

1,200 mg/m<sup>3</sup>

220 ma/m<sup>3</sup>

99 mg/m<sup>3</sup>

630 mg/m<sup>3</sup>

730 mg/m<sup>3</sup>

990 mg/m<sup>3</sup> 2,000 mg/m<sup>3</sup>

2,000 mg/m<sup>3</sup>

200 mg/m<sup>3</sup>

500 mg/m<sup>3</sup>

4,500 mg/m<sup>3</sup>

2,000 mg/m<sup>3</sup> 2,000 mg/m<sup>3</sup>

35 mg/m<sup>3</sup>

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#### OSHA HazC Issue date 11/04/2019

#### Trade Name: Carbon Steel Electrodes and Rods for Gas Shielded Arc Welding

Note: Certain chemical constituents listed in Section 3 may vary depending upon the Classification of the Carbon Steel Electrodes and Rods for Gas Shielded Arc Welding products.

#### Description of first aid measures

General information:

Symptoms of poisoning may occur after exposure to dust, fumes or particulates; seek medical attention if feeling unwell

After inhalation:

Supply fresh air; consult doctor in case of complaints. In case of unconsciousness place patient stably in the side position for transportation.

## After skin contact: Immediately wash with water and soap and rinse thoroughly.

If skin irritation occurs, consult a doctor

After eye contact:

After eye contact: Do NOT rub eyes. Immediately rinse opened eye(s) for at least 15 minutes under running water, lifting upper and lower lids occasionally. If symptoms persist, consult a physician.

After swallowing:

Rinse out mouth and then drink plenty of water

Ruise but mouth and used units pening by water. Do not induce vomiling without medical advice. Information for doctor Most important symptoms and effects, both acute and delayed: No further relevant information available. Indication of any immediate medical attention and special treatment needed: No further relevant information available.

OSHA HazO

Trade Name: Carbon Steel Electrodes and Rods for Gas Shielded Arc Welding

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1309-48-4 Magnesium Oxide

1344-28-1 Aluminium Oxide

7439-98-7 Molybdenum

7440-44-0 Carbon Fiber

7631-86-9 Silicon Dioxide 7440-32-6 Titanium

7440-39-3 Barium 13463-67-7 Titanium Dioxide

1317-61-9 Iron Oxide

7439-95-4 Magnesium

1309-48-4 Magnesium Oxide

1344-28-1 Aluminium Oxide 7439-98-7 Molybdenum

7440-44-0 Carbon Fiber

7631-86-9 Silicon Dioxide

7440-50-8 Copper

7440-67-7 Zirconiur

7440-32-6 Titanium

7440-03-1 Niobium 7440-62-2 Vanadium

7439-93-2 Lithium

7440-02-0 Nickel

7440-21-3 Silicon

7440-50-8 Copper 7440-67-7 Zirconium

7440-03-1 Niobium

7440-62-2 Vanadiun

PAC-3: 7439-89-6 Iron

Strige Highting Measures
 Extinguishing media
 Suitable extinguishing agents:
 CO<sub>2</sub>, extinguishing bader or water spray. Fight larger fires with water spray or alcohol resistant foam.
 Use fire fighting measures that suit the environment.
 For safety reasons unsuitable extinguishing agents: No further relevant information.
 Social hazards arising from the substance or mixture:
 Amorphous or crystalline silicon both react exothermically when heated with alkali-metal carbonates attaining
 incandescence and evolving carbon monoxide.
 Material in powder form, capable of creating a dust explosion. Mixture of silicon, aluminum, and lead oxide
 explodes when heated.
 Amorphous or crystalline silicon both react exothermically when heated with alkali-metal carbonates attaining
 incandescence and evolving carbon monoxide. Mixtures of silicon, aluminum, and lead explode when heated.
 If noincrated, product Will release the following toxic furnes: Oxides of silicon, aluminum, magnesium,
 manganese, iron, copper, molydenum, carbon, titanium, nickel, niobium, vanadium, barium, lithium, and
 izroonium, and fluorides and ozone.
 Advice for firefighters:
 Special protective equipment for firefighters:
 As in any fire, wear self-contained breating aparatus pressure-demand (NIOSH approved or equivalent) and
 full protective gains and toride is and oxide.
 Attemprestures above 200°C Zirconium reacts exothermically with the following; fluorine, chloride, bromide,
 iden, halocarbons, carbon tetrachioride, carbon, fleta fluoride and Freons.
 These lients are not reactive, flammable, or explosive and serveridy on thazardous at ambient temperatures.
 Weiding arcs and sparks can ignite combustibles and avariety of metal oxides. Emergency responders must wear
 personal protection equipment suitable for the situation. Use the extinguishing media recommended for the
 uuring materials and fire situation. See ANSI Z49.1 "Safety in Weiding and Cutting" and "Safe

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nd GHS Rev 03.

# Safety Data Sheet (SDS) Com Standard 29 CFR 1910.1200(g) and C

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7440-21-3 Silicon

OSHA HazO

Trade Name: C	arbon Steel Electrodes and Rods for Gas Shielded Arc Welding	
Code: SP, p	ublished by the American Welding Society.	
6 Accidenta	al Release Measures	
Ensure adec Avoid conta Wear protec Environme Methods ar Pick up mec Dispose cor Ensure adec Dispose of t Reference See Section See Section See Section	recautions, protective equipment and emergency procedures: uate ventilation. Unit equipment. Keep unprotected persons away. Itil a equipment. Keep unprotected persons away. Itil procautions: Do not allow to enter sewers/surface or ground water. It annically. Itaminated material as waste according to section 13. uate ventilation. the collected material according to regulations. It of Unit sections: 7 for information on personal protection equipment. 13 for disposal information. Action Criteria for Chemicals	
PAC-1:		
7439-89-6		3.2 mg/m <sup>3</sup>
7440-39-3		1.5 mg/m <sup>3</sup>
	Titanium Dioxide	30 mg/m <sup>3</sup>
	Iron Oxide	21 mg/m <sup>3</sup>
7439-93-2	Lithium	3.3 mg/m <sup>3</sup>
7439-95-4	Magnesium	18 mg/m <sup>3</sup>
7440-02-0	Nickel	4.5 mg/m <sup>3</sup>
7440-21-3	Silicon	45 mg/m <sup>3</sup>
1309-48-4	Magnesium Oxide	30 mg/m <sup>3</sup>
1344-28-1	Aluminium Oxide	15 mg/m <sup>3</sup>
7439-98-7	Molybdenum	30 mg/m <sup>3</sup>
7440-44-0	Carbon Fiber	6 mg/m <sup>3</sup>
7440-50-8	Copper	3 mg/m <sup>3</sup>
7440-67-7	Zirconium	10 mg/m <sup>3</sup>
7631-86-9	Silicon Dioxide	18 mg/m <sup>3</sup>
7440-32-6	Titanium	30 mg/m <sup>3</sup>
7440-03-1	Niobium	30 mg/m <sup>3</sup>
7440-62-2	Vanadium	3 mg/m <sup>3</sup>
PAC-2:		
7439-89-6	Iron	35 mg/m <sup>3</sup>
7440-39-3	Barium	180 mg/m <sup>3</sup>
13463-67-7	Titanium Dioxide	330 mg/m <sup>3</sup>
1317-61-9	Iron Oxide	230 mg/m <sup>3</sup>
7439-93-2	Lithium	36 mg/m <sup>3</sup>
7439-95-4	Magnesium	200 mg/m <sup>3</sup>
7440-02-0		50 mg/m <sup>3</sup>
		~

#### Safety Data Sheet (SDS) OSHA Haz d 29 CFR 1910.1200(a) and GHS Rev 03.

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100 mg/m<sup>3</sup> (Contd. on page 6)

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Trade Name: Carbon Steel Electrodes and Rods for Gas Shielded Arc Welding

## Specific end use(s): No further relevant information available. 8 E

Additional information about design of technical systems: No further data; see section 7.

Control parameters: All ventilation should be designed in accordance with OSHA standard (29 CFR 1910.94). Use local exhaust at filling zones and where leakage and dust formation is probable. Use mechanical (general) ventilation for storage areas. Use appropriate ventilation as required to keep Exposure Limits in Air below TLV & PEL limits. Components with occupational exposure limits. The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

At this	time, the other constituents have no known exposure limits.			
7440-	39-3 Barium			
PEL	Long-term value: 0.5 mg/m³ as Ba			
REL	Long-term value: 0.5 mg/m³ as Ba			
TLV	Long-term value: 0.5 mg/m <sup>3</sup> as Ba			
13463	-67-7 Titanium Dioxide			
PEL	Long-term value: 15* mg/m <sup>3</sup> *total dust			
REL	See Pocket Guide App. A			
TLV	Long-term value: 10 mg/m <sup>3</sup>			
1317-	95-9 Silica			
PEL	Long-term value: 0.05* mg/m <sup>3</sup> *resp. dust; 30mg/m3/%SiO2+2			
REL	Long-term value: 0.05* mg/m <sup>3</sup> *respirable dust; See Pocket Guide App. A			
TLV	TLV withdrawn			
7429-	90-5 Aluminium			
PEL	Long-term value: 15*; 5** mg/m <sup>3</sup> *Total dust; ** Respirable fraction			
REL	Long-term value: 10* 5** mg/m <sup>3</sup> as Al*Total dust**Respirable/pyro powd./welding f.			
TLV	Long-term value: 1* mg/m <sup>3</sup> as Al; *as respirable fraction			
7440-	02-0 Nickel			
PEL	Long-term value: 1 mg/m <sup>a</sup>			
REL	Long-term value: 0.015 mg/m <sup>3</sup> as Ni; See Pocket Guide App. A			
TLV	Long-term value: 1.5* mg/m³ elemental, *inhalable fraction			
7440-	21-3 Silicon			
PEL	Long-term value: 15* 5** mg/m <sup>3</sup> *total dust **respirable fraction			
	(Contd. on page			

Handling Precautions for safe handling: Avoid creating and breathing dustfume/gas/mist/vapors/spray. Ensure good ventilation/exhaustion at the workplace. Wear assigned protective equipment. Information about protection against explosions and fires: Keep protective respiratory device available.

Conditions for safe storage, including any incompatibilities Store away from strong acids, strong bases, strong oxidizing agents and strong reducing agents

Store away from strong across, survey across, serving across,

Reviewed on 11/04/2019

## Safety Data Sheet (SDS)

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OSHA HazC

Issue date 11/04/2019

REL	Long-term value: 10* 5** mg/m <sup>3</sup> *total dust **respirable fraction
TLV	TLV withdrawn
1309-4	48-4 Magnesium Oxide
PEL	Long-term value: 15* mg/m³ fume; *total particulate
TLV	Long-term value: 10* mg/m <sup>3</sup> *as inhalable fraction
1344-2	28-1 Aluminium Oxide
PEL	Long-term value: 15*; 5** mg/m <sup>3</sup> *Total dust; ** Respirable fraction
REL	Long-term value: 10* 5** mg/m <sup>3</sup> as Al*Total dust**Respirable/pyro powd./welding f.
TLV	Long-term value: 1* mg/m <sup>3</sup> as Al; *as respirable fraction
7439-9	98-7 Molybdenum
PEL	Long-term value: 15* mg/m <sup>3</sup> *Total dust, as Mo
TLV	Long-term value: 10* 3** mg/m <sup>3</sup> as Mo; *inhalable fraction ** respirable fraction
7440-	50-8 Copper
PEL	Long-term value: 1* 0.1** mg/m³ as Cu *dusts and mists **fume
REL	Long-term value: 1* 0.1** mg/m <sup>3</sup> as Cu *dusts and mists **fume
TLV	Long-term value: 1* 0.2** mg/m <sup>3</sup> *dusts and mists; **fume; as Cu
7440-	67-7 Zirconium
PEL	Long-term value: 5 mg/m³ as Zr
REL	Short-term value: 10 mg/m <sup>3</sup> Long-term value: 5 mg/m <sup>3</sup> as Zr
TLV	Short-term value: 10 mg/m <sup>3</sup> Long-term value: 5 mg/m <sup>3</sup> as Zr
	86-9 Silicon Dioxide
ACGH	Short-term value: 3 mg/m <sup>3</sup> Long-term value: 10 mg/m <sup>3</sup>
IDLH	Short-term value: 3000 mg/m <sup>2</sup> Long-term value: 4 mg/m <sup>2</sup> IDLH: Immediately dangerous to life or health
TWA	Short-term value: 6 mg/m <sup>3</sup> Long-term value: 4 mg/m <sup>3</sup>

Safety Data Sheet (SDS) Com Standard 29 CFR 1910.1200(g) and C

Reviewed on 11/04/2019

GHS Rev 03

1200(g) a

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Trade Name: Carbon Steel Electrodes and Rods for Gas Shielded Arc Welding

OSHA HazCo

#### Exposure controls:

Issue date 11/04/2019

Exposure controls: Personal protective equipment General protective and hygienic measures: Keep away from foodstuffs, beverages and feed. Immediately remove all solied and contaminated dothing and wash before reuse. Wash hands before breaks and at the end of work. Avoid contact with the eves and skin. Store protective clothing separately Breathing equipment:



Suitable respiratory protective device recommended.

Use NIOSH approved or equivalent fume respirator or air supplied respirator when welding, brazing, cutting, grinding, or soldering in a confined space or general work area where local exhaust and/or ventilation does not keep exposure below the limits outlined in Section 8. Monitor the air quality inside the welder's helmet, and/or worker's breathing zone to determine if a respirator is required and the type needed Protection of hands:



The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Select glove material based on penetration times, rates of diffusion and degradation.

Material of gloves:

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material cannot be calculated in advance and has therefore to be checked prior to the application.

application. Penetration time of glove material: The exact break-through time has to be determined and observed by the manufacturer of the protective



Goggles with face-shield

Wear a helmet or face shield with a filter lens around shade number 14. Adjust if needed by selecting the next lighter or darker shade number. See ANSI/ASC Z49.1 Section 4.2 or publication F2.2. Shield other workers by providing screens and flash goggles. Body protection:

Body protection: Wear approved head, hand, and body protection, which help to prevent injury from radiation, sparks, and electrical shock. This would include wearing welder's gloves and a protective face shield and may include arm protectors, apron, hats, shoulder protection, as well as dark, non-synthetic, substantial clothing. See ANSI 249.1. Welders should be trained not to allow electrically live parts to contact the skin or wet clothing and gloves. The welders should insulate themselves from the work and ground and should not touch live electrical parts. Welders should not wear short sleve shirts or short pants. Limitation and supervision of exposure into the environment: None (Cond. on page 10)

(Contd. on page 10)

Appearance:       Metal Cored Wire/Rod or Solid Wire/Rod         Form:       Color:       Colores:       Colore:       Colore:       Colore:       Colore:       Colore:       Colore:       Colore:       Colore:       Color:       Color: <th>s</th> <th>Safety Data Sheet (SDS)</th> <th>Page 10/19</th>	s	Safety Data Sheet (SDS)	Page 10/19
ada Name: Carbon Steel Electrodes and Rods for Gas Shielded Arc Weiding  Physical and Chemical Properties General Information Appearance: Form: Color: Cooper or silver/gray metallic color Odor: Colores: Cooper or silver/gray metallic color Odor: Color: Not determined. Flash point: None Flammability (solid, gaseous): Not determined. Flash point: None Flammability (solid, gaseous): Not determined. Jgnition temperature: Not applicable Decomposition temperature: Not determined. Vapor pressure: Not applicable. Density: Relative density: Not determined. Vapor density: Not determined. Vapor density: Not determined. Vapor density: Not applicable. Density: Metal Cooper Not determined. Vapor density: Not applicable. Partition coefficient (n-octanol/water): Not determined. Vapor size: Not applicable. Solubility in Miscibility with: Water: Not applicable. Solubility in Miscibility with: Nater: Not applicable. Solubility in Miscibility with: Nat		n Standard 29 CFR 1910.1200(g) and GHS Rev 03.	Deviewed 44/04/0044
Physical and Chemical Properties         Information on basic physical and chemical properties         General Information         Appearance:         Form:       Ketal Cored Wire/Rod or Solid Wire/Rod         Color:       Cooper or silver/gray metallic color         Odor       Odorbresshold:         Not determined.         PH-value:       Not determined.         Boling point/Metting range:       Not determined.         Boling point/Metting range:       Not determined.         Ignition temperature:       Not determined.         Ignition temperature:       Not determined.         Ignition temperature:       Not determined.         Pacobision:       Product is not self-igniting.         Dange of explosion:       Product does not present an explosion hazard.         Explosion limits:       Image: Not determined.         Upper:       Not determined.         Vapor pressure:       Not applicable.         Density:       Not determined.         Vapor den	sue date 11/04/2019		Reviewed on 11/04/2019
Information on basic physical and chemical properties General Information Appearance: Form: Metal Cored Wire/Rod or Solid Wire/Rod Color: Copper or silver/gray metallic color Odor: Odorthreshold: Not determined. pH-value: Not applicable. Change in condition Metiting point/Boilling range: Not determined. Boilling point/Boilling range: Not determined. Flash point: None Flammability (Solid, gaseous): Not determined. Japinton temperature: Not applicable Decomposition temperature: Not applicable Decomposition temperature: Not applicable Decomposition temperature: Not determined. Lapinting: Product is not self-igniting. Danger of explosion: Product is not self-igniting. Danger of explosion: Product determined. Upper: Not determined. Vapor pressure: Not applicable. Density: Relative density: Not determined. Vapor density: Not applicable. Solubility in / Miscibility with: Water: Insoluble. Partition coefficient (n-octanol/water): Not determined. Viscosity: Dynamic: Not applicable. Solubility in / Miscibility with: Water: Insoluble. Solubility in / Miscibility with: Water: Not applicable. Solubility in / Miscibility with: Water: Not applicable. Solubility in / Miscibility with: Solubility in / Miscibility with: Viscosity: Dynamic: Not applicable. Solubility in / Miscibility with: Solubility in / Miscibility with: Viscosity: Viscosit	ade Name: Carbon Steel Electrodes	and Rods for Gas Shielded Arc Welding	
General Information         Metal Cored Wire/Rod or Solid Wire/Rod           Form:         Metal Cored Wire/Rod or Solid Wire/Rod           Color:         Copper or silver/gray metallic color           Odor:         Odorless until used           Odor threshold:         Not applicable.           Change in condition         Metal point/Bolling range:           Metal point/Bolling range:         Not determined.           Bolling point/Bolling range:         Not determined.           Flash point:         None           Flash point:         None           Flash point:         None           Flash point:         Not determined.           Ignition temperature:         Not applicable           Decomposition temperature:         Not determined.           Auto igniting:         Product is not self-igniting.           Danger of explosion:         Product dees not present an explosion hazard.           Explosion limits:         Lower:           Lower:         Not applicable.           Vapor pressure:         Not applicable.           Density:         Not applicable.           Vapor density:         Not applicable.           Solubility in / Miscibility with:         Mot applicable.           Vapor density:         Not determined.	Physical and Chemical Prop	erties	
Color:       Copper or silver/gray metallic color         Odor:       Odorises until used         Odor threshold:       Not determined.         pH-value:       Not applicable.         Change in condition       Meting point/Metiling range:       Not determined.         Boling point/Boling range:       Not determined.         Boling point/Boling range:       Not determined.         Flash point:       None         Flash point:       None         Flash point:       Not determined.         Ignition temperature:       Not applicable         Decomposition temperature:       Not determined.         Janger of explosion:       Product is not self-igniting.         Danger of explosion:       Product is not self-igniting.         Danger of explosion:       Product is not self-igniting.         Upper:       Not determined.         Upper:       Not determined.         Vapor pressure:       Not applicable.         Vapor density:       Not determined.	General Information		
Change in condition       Metting point/Wetiling range:       Not determined.         Boiling point/Wetiling range:       Not determined.         Flash point:       None         Flash point:       None         Flash point:       None         Flash point:       None         Secomposition temperature:       Not determined.         Ignition temperature:       Not determined.         Auto igniting:       Product is not self-igniting.         Danger of explosion:       Product does not present an explosion hazard.         Explosion timits:       Lower:         Lower:       Not determined.         Vapor pressure:       Not determined.         Vapor pressure:       Not determined.         Vapor density:       Not determined.         Vapor density:       Not determined.         Vapor density:       Not applicable.         Solubility in / Miscibility with:       Water:         Water:       Insoluble.         Partition coefficient (n-octanol/water): Not determined.         Viscosity:       Not applicable.         Solubility in / Miscibility with:       Mot applicable.         Vascosity:       Use applicable.         Solubility in / Miscibility with:       Not applicable. <t< th=""><th></th><th>Copper or silver/gray metallic color Odorless until used</th><th></th></t<>		Copper or silver/gray metallic color Odorless until used	
Meting point/Meting range:     Not determined.       Boiling point/Boiling range:     Not determined.       Flash point:     None       Flash point:     None       Flash point:     Not determined.       Jamability (solid, gaseous):     Not determined.       Jgnition temperature:     Not determined.       Jonger of explosion:     Product is not self-igniting.       Danger of explosion:     Product does not present an explosion hazard.       Explosion limits:     Image: Not determined.       Lower:     Not determined.       Upper:     Not determined.       Vapor pressure:     Not applicable.       Density:     Not applicable.       Solublity in / Miscibility with:     Not applicable.       Vapor density:     Not applicable.       Solublity in / Miscibility with:     Insoluble.       Partition coefficient (n-octanol/water):     Not determined.       Viscosity:     Vapor applicable.       Volc content:     Not applicable.       Soluble:     Not applicable.	· pH-value:	Not applicable.	
Flammability (solid, gaseous):     Not determined.       Ignition temperature:     Not applicable       Decomposition temperature:     Not determined.       Auto igniting:     Product is not self-igniting.       Danger of explosion:     Product does not present an explosion hazard.       Explosion limits:     Import of explosion:       Lower:     Not determined.       Upper:     Not determined.       Vapor pressure:     Not applicable.       Density:     Not applicable.       Evaporation rate:     Not applicable.       Solubility in / Miscibility with:     Insoluble.       Partition coefficient (n-octanol/water): Not determined.       Viscosity:     Not applicable.       Solubility in / Miscibility with:     Not applicable.       Viscosity:     Vot applicable.       Vor content:     Not applicable.       Solids content:     0.00 %			
Ignition temperature:       Not applicable         Decomposition temperature:       Not determined.         Auto igniting:       Product is not self-igniting.         Danger of explosion:       Product does not present an explosion hazard.         Explosion limits:       Igniting:         Lower:       Not determined.         Vapor pressure:       Not determined.         Vapor pressure:       Not applicable.         Density:       Relative density:         Vapor density:       Not applicable.         Solubility in / Miscibility with:       Insoluble.         Partition coefficient (n-octanol/water): Not determined.       Viscosity:         Dynamic:       Not applicable.         Solubility in / Miscibility with:       Insoluble.         Vaparine:       Not applicable.         Solubic content:       Not applicable.         Solubic content:       0.00 %	· Flash point:	None	
Decomposition temperature:     Not determined.       Auto igniting:     Product is not self-igniting.       Danger of explosion:     Product does not present an explosion hazard.       Explosion limits:     Image: Comparison of the explosion hazard.       Lower:     Not determined.       Vapor pressure:     Not applicable.       Density:     Relative density:       Relative density:     Not determined.       Vapor density:     Not applicable.       Solubility in / Miscibility with:     Insoluble.       Vascorf:     Insoluble.       Partition coefficient (n-octanol/water): Not determined.     Viscosity:       Usicosity:     Not applicable.       Solvent content:     Not applicable.       Solids content:     0.00 %	Flammability (solid, gaseous):	Not determined.	
Auto igniting:     Product is not self-igniting.       Danger of explosion:     Product does not present an explosion hazard.       Explosion limits:     Image: Not determined.       Lower:     Not determined.       Upper:     Not determined.       Vapor pressure:     Not applicable.       Density:     Relative density:     Not determined.       Vapor density:     Not determined.       Vapor density:     Not determined.       Solubility in / Miscibility with:     Insoluble.       Partition coefficient (n-octanol/water):     Not determined.       Viscosity:     Not applicable.       Solubic content:     Not applicable.	Ignition temperature:	Not applicable	
Danger of explosion:     Product does not present an explosion hazard.       Explosion limits:     Image of explosion hazard.       Lower:     Not determined.       Upper:     Not determined.       Vapor pressure:     Not applicable.       Density:     Relative density:       Vapor density:     Not determined.       Vapor density:     Not deplicable.       Solubility in / Miscibility with:     Insoluble.       Partition coefficient (n-octanol/water): Not determined.       Viscosity:     Unapplicable.       Solvent content:     Not applicable.       Solvent content:     0.00 %       Solids content:     100.0 %	Decomposition temperature:	Not determined.	
Explosion limits:       Not determined.         Lower:       Not determined.         Upper:       Not deplicable.         Density:       Relative density:         Relative density:       Not determined.         Vapor density:       Not deplicable.         Evaporation rate:       Not applicable.         Solubility in / Miscibility with:       Insoluble.         Partition coefficient (n-octanol/water): Not determined.         Viscosity:       Not applicable.         Solumin::       Not applicable.         Solume::       Not applicable.	Auto igniting:	Product is not self-igniting.	
Lower:       Not determined.         Upper:       Not applicable.         Density:       Rotative density:         Rotative density:       Not applicable.         Zvapor density:       Not applicable.         Solubility in / Miscibility with:       Not applicable.         Water:       Insoluble.         Partition coefficient (n-octanol/water): Not determined.         Viscosity:       Vot applicable.         Solvent content:       Not applicable.         Solvent content:       0.00 %         Solids content:       100.0 %	Danger of explosion:	Product does not present an explosion haz	ard.
Density:       Not applicable.         Relative density:       Not applicable.         Evaporation rate:       Not applicable.         Evaporation rate:       Not applicable.         Solubility in / Miscibility with:       Water:         Water:       Insoluble.         Partition coefficient (n-octanol/water): Not determined.         Viscosity:       Dynamic:         Dynamic:       Not applicable.         Kinematic:       Not applicable.         Solvent content:       0.00 %         Solids content:       100.0 %			
Relative density:     Not determined.       Vapor density:     Not applicable.       Evaporation rate:     Not applicable.       Solubility in / Miscibility with:     Insoluble.       Partition coefficient (n-octanol/water): Not determined.     Viscosity:       Partition coefficient (n-octanol/water): Not determined.     Viscosity:       Viscosity:     Viscosity:       Solvent content:     Not applicable.       Solvent content:     0.00 %       Solids content:     100.0 %	Vapor pressure:	Not applicable.	
Water:     Insoluble.       Partition coefficient (n-octanol/water): Not determined.       Viscosity:     Dynamic:       Dynamic:     Not applicable.       Kinematic:     Not applicable.       Solvent content:     0.00 %       Solids content:     100.0 %	Relative density: Vapor density:	Not applicable.	
Viscosity:         Viscosity:           Dynamic:         Not applicable.           Kinematic:         Not applicable.           Solvent content:         0.00 %           Solids content:         100.0 %	<ul> <li>Solubility in / Miscibility with: Water:</li> </ul>	Insoluble.	
Dynamic:     Not applicable.       Kinematic:     Not applicable.       Solvent content:     0.00 %       Solids content:     100.0 %	Partition coefficient (n-octanol/wa	ter): Not determined.	
VOC content:         0.00 %           Solids content:         100.0 %			
	Solvent content: VOC content:	0.00 %	

Reactivity: Stable under normal conditions. Chemical stability: Stable under normal conditions. Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications. Possibility of hazardous reactions: Contact with acids or strong bases may cause generation of gas. Conditions to avoid: No further relevant information available. (Contd. on gage:

(Contd. on page 11)

Safety Data Sheet (SDS) OSHA HazC d 29 CFR 1910.1200(a) and GHS Rev 03. Issue date 11/04/2019 Reviewed on 11/04/2019 Trade Name: Carbon Steel Electrodes and Rods for Gas Shielded Arc Welding Incompatible materials: Strong acids, strong bases, strong oxidizing agents and strong reducing agents. Hazardous decomposition products: Welding fumes and gases cannot be classified simply. The composition and quantity of both are dependent upon the metal being welded, the processes and procedures followed, and the welding consumbles used. Other conditions that also influence the composition and quantity of mess and gases to which workers may be exposed include: coatings on the metal being welded (such as paint, plating, or galvanizing), the number of welders in poeration and the volume of the work area, the quality and amount of venitiation, the position of the welder's head with respect to the fume plume, and the presence of contaminants in the atmosphere (such as chlorinated hydrocarbon vapors from cleaning and degreasing procedures). When the electrode is consumed, the fume and gas decomposition products generated are different in percent and form from the ingredients listed in Section 8. Fume and gas decomposition, and not the ingredients in the electrode, are important. The concentration of a given fume or gas component may decrease or increase by many limes that original concentration. Bo, new compounds not in the electrodes may form. The known gases and fumes that may form during welding or cutileg and their exposure limits are noted in the list in Section 1 below. Decomposition products of normal operation include those originating from the volatilization, reacidon, or oxides into block gases and strong exposure. It is understood, however, that the elements and/or oxides to be mentioned are virtually always present as complex oxides and not as metals (See "Characterization of Arc Welding Fume", from the American Welding Contain: Oxides of silton, aluminum, magnesium, magnese, iron, copper, molydenum, carbon, titanium, nickel, niobium, vanadium, barium, lithium, and zirconium, and fluorides and ozone. Some elements or compounds may execeed the PELs/TLVs before the total fumes execed 5 mg/m3. Incompatible materials: Strong acids, strong bases, strong oxidizing agents and strong reducing agents. 11 To Information on toxicological effects: Effects of Over-Exposure: Electric arc welding may create one or more of the following health hazards: ARC RAYS can injure eyes and burn skin. Incidences of skin cancer have been reported. ELECTRIC SHOCK can kill. FUMES AND GASES GENERATED FROM WELDING can be dangerous to your health. PRIMARY ROUTES OF ENTRY are the respiratory system, eyes, skin, and/or indigestion. NOISE can damage hearing. Short-term (acute) over-exposure effects:
WELDING FUMES may result in discomfort, such as dizziness, nausea, or dryness or irritation of the nose, throat, or eyes.
LUMINUM OXIDE may cause irritation of the respiratory system.
FLUORIDES, FLUORIDE COMPOUNDS may cause skin and eye burns, pulmonary edema, and bronchits.
FLUORIDES, FLUORIDE COMPOUNDS may cause shi and eye burns, pulmonary edema, and bronchits.
IRON, IRON OXIDE have no known effects. Treat as a nuisance dust or fume.
MAGNESUM, MAGNESIUM OXIDE overexposure may cause metal fume fever, characterized by metallic taste, tightness of chest, and fever, Symptoms may last 24-48 hours following overexposure.
MANGARESE, MANGANESE COMPOUNDS may cause metal fume fever, characterized by irritation of the throat, vomiting, nausea, fever, body aches, and chills. Recovery is generally complete within 48 hours of overexposure.

MOLYBDENUM may cause irritation of the eyes, nose, and throat. MICKEL, NICKEL COMPOUNDS may cause metallic taste, nausea, tightness in chest, fever, and allergic reactions

SILICA (amorphous) dust and fumes may cause irritation of the respiratory system, skin, and eyes.

STICAN (antophotos) dust and times may cause imitation of the respiratory system.
 TTANIUM DICXIDE may cause imitation of the respiratory system.
 COPPER may cause capillary damage, headache, cold sweat, weak pulse, and kidney and liver damage, central nervous system excitation followed by depression, jaundice, convulsions, paralysis, and coma. Death may occur from shock or renal failure.

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# Safety Data Sheet (SDS) Com Standard 29 CFR 1910.1200(g) and GHS Rev 03.

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## OSHA HazCo

#### Issue date 11/04/2019

Trade Name: Carbon Steel Electrodes and Rods for Gas Shielded Arc Welding

Long-term (chronic) over-exposure effects: • WELDING FUNES in excess levels may cause bronchial asthma, lung fibrosis, pneumoconiosis, or 'siderosis'. Overexposure to air contaminants may lead to their accumulation in the lungs, a condition which may be seen as dense areas on chest x-rays. The severity of the change is proportional to the length of exposure. The changes seen are not necessarily associated with symptoms or signs of reduced lung function or disease. In addition, the changes on X-rays may be caused by non-work factors such as smoking, etc. • ALUMINUM OXIDE may cause pulmonary fibrosis and emphysema. • FLUORIDES may cause serious bone erosion (osteoporosis) and mottling of teeth. • IRON, IRON OXIDE may cause submonary fibrosis and emphysema. • IRON, IRON OXIDE may cause submonary fibrosis and emphysema. • IRON, IRON OXIDE may cause submonary fibrosis and emphysema. • RAUMINUM OXIDE may cause submonary fibrosis or from fumes and its compounds ceases. Iron and magnetile (Fe3O4) are not regarded as fibrogenic materials. • MANGANESE, MANGANESE COMPOUNDS may cause central nervous system effects referred to as manganism. • Symptoms include languro, sleepiness, musuclar weakness, emotional disturbances, spastic gait, and tremors. Behavioral changes and changes in handwriting may also appear. These effects are irreversible. Employees overexposed to manganese should receive regular medical examinations for early detection of manganism.

detection of manganism. MOLYBDENUM prolonged overexposure may result in loss of appetite, weight loss, loss of muscle

MOLYBDENUM prolonged overexposure may result in loss of appetite, weight loss, loss of muscle coordination, difficulty in breathing, and anemia.
 NICKEL, NICKEL COMPOUNDS may lung fibrosis or pneumoconiosis. Studies of nickel refinery workers indicated a higher incidence of lung and nasal cancers.
 SILICA (respirable crystalline silica) overexposure may result in silicosis. Respirable crystalline silica is a known human carcinogen. SILICA (morphous) long tern overexposure may cause pneumoconiosis. Noncrystalline forms of silica (amorphous silica) are considered to have little fibrotic potential.
 TITANIUM DIOXIDE may cause bulmorary irritation and slight fibrosis.
 COPPER may cause hepatic cirrhosis, brain damage and demyelination, kidney defects, and copper deposition in the comea as exemplified by humans with Wilson's disease. It has also been reported that copper poisoning has led to hemolytic ameria and accelerates arteriosclerosis.
 Acute toxicity:
 LDLCS (vause that are relevant for classification:

7439-89-6	Iron	
Oral	LD50	7,500 mg/kg (Rat)
13463-67-	7 Titanium Dio	xide
Oral	LD50	>10,000 mg/kg (Rat)
Dermal	LD50	>10,000 mg/kg (Rabbit)
Inhalative	LC50/4 h	>6.82 mg/l (Rat)
7439-93-2	Lithium	·
Inhalative	LC50/4 h	18 mg/l (Trout)
	LC50/96 hours	62.21 mg/l (Trout)
7429-90-5	Aluminium	
Oral	LD50	>2,000 mg/kg (Rat)
Inhalative	LC50/4 h	888 mg/l (Rat)
7440-21-3	Silicon	
Oral	LD50	3,160 mg/kg (Rat)
1309-48-4	Magnesium O	xide
Oral	LD50	810 mg/kg (Mouse)
1344-28-1	Aluminium Ox	ride
Oral	LD50	>10,000 mg/kg (Rat)
		(Contd. on page

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Reviewed on 11/04/2019
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Inhalative	LC50/4 h	>2.6 mg/l (Rat)	
	Molybdenu		
Oral	LD50	>5,000 mg/kg (Rat)	
Dermal	LD50	>2,000 mg/kg (Rat)	
Inhalative	LC50/4 h	800 mg/l (Trout)	
		>5.84 mg/l (Rat)	
7631-86-9	Silicon Diox	tide	
Oral	LD50	10,000 mg/kg (Rat) (OECD 401)	
Dermal	LD50	5,000 mg/kg (Rabbit) (OECD 402)	
Inhalative	LC50/4 h	>140->2,000 mg/l (Rat) (OCED 403)	
		Maximum attainable concentration, mortality does not appear.	
		10,000 mg/l (Zebra fish) (OECD 203)	
On the ey Strong irrit Causes se	ant with the derious eye irrit	langer of severe eye injury. lation. ation possible through skin contact.	
On the ey Strong irrit Causes se Sensitizai Additiona The prod preparatio Irritant Carcinogu IARC (Intr (a) Althou concludes titanium di (b) OSHA must conv Group 1 - Group 2A Group 2B Group 2B	re: tant with the c prious eye irrit tion: Sensitiz: uct shows the ns: enic category errational Ag gh IARC has :: "No signific loxide is boun does not reg ey the fact the Carcinogenic - Probably ca - Posbibly ca Not classifiab	ation. ation possible through skin contact. al information: he following dangers according to internally approved calculation meti- les: gency for Research on Cancer/: classified titanium dioxide as possible carcinogenic to human (2B), their s ant exposure to titanium dioxide is thought to occur during the use of produc d to other materials, such as in cosmetics or in paints." ulate Titanium Dioxide as a carcinogen. However, under 29 CFR 1910.1200 at Titanium Dioxide as a carcinogen. However, under 29 CFR 1910.1200 at Titanium Dioxide is a potential carcinogen to rats. rcinogenic to humans cinogenic to humans	summa cts whi
On the ey Strong infl Causes se Sensitizal Additiona The prod preparatio Irritant Carcinogy IARC (Intk (a) Althou concludes titanium di (b) OSHA must conv Group 12 Group 2A Group 2B Group 3 -	re: tant with the c prious eye irrit tion: Sensitiz: uct shows the ns: enic category errational Ag gh IARC has :: "No signific loxide is boun does not reg ey the fact the Carcinogenic - Probably ca - Posbibly ca Not classifiab	ation. ation possible through skin contact. ad information: he following dangers according to internally approved calculation mether fes: gency for Research on Cancer/: is classified titanium dioxide as possible carcinogenic to human (2B), their s ant exposure to titanium dioxide is thought to occur during the use of product d to other materials, such as in cosmetics or in paints." ulate Titanium Dioxide as a potential carcinogen to rats. to humans criongenic to humans criongenic to humans le as to its carcinogenicity to humans carcinogenic to humans	summats wh
On the ey Strong infl Causes se Sensitizal Additiona The prod preparatio Irritant Carcinogy IARC (Intk (a) Althou concludes titanium di (b) OSHA must conv Group 12 Group 2A Group 2B Group 3 -	re: tant with the c tant with the c tion: Sensitizition: Sensitizition: sensitizition: Sensitizition the toxicologic uct shows the noise category entic category entic category entic category entition of the entition of the entities	ation. ation possible through skin contact. ad information: he following dangers according to internally approved calculation mether fes: gency for Research on Cancer/: is classified titanium dioxide as possible carcinogenic to human (2B), their s ant exposure to titanium dioxide is thought to occur during the use of product d to other materials, such as in cosmetics or in paints." ulate Titanium Dioxide as a potential carcinogen to rats. to humans criongenic to humans criongenic to humans le as to its carcinogenicity to humans carcinogenic to humans	summa cts whi
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On the ey Strong irrit Causes se Sensitizaa Additiona The prod preparatio Irritant Carcinogy (ARC (Intr (a) Althou concludes titanium di (b) OSHA (b) OSHA (b) OSHA Group 2A Group 2A Group 2A Group 2 Group 4 13463-67- 1317-95- 7440-02- 7631-86	re: ant with the centre of th	ation	summatic sum the SI summatic summ 2

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sue date 11/0	OSHA HazCom Standard 29 CFR 1910.1200(g) and GHS Rev (	Reviewed on 11/04/2
sue date 11/0	4/2019	Reviewed on 11/04/2
rade Name: C	arbon Steel Electrodes and Rods for Gas Shielded Arc Welding	
	cautions for user: Not applicable.	
	n bulk according to Annex II of V78 and the IBC Code: Not applicable.	
	Regulation": Non-Regulated Material	
5 Regulato	ry Information	
· Safety, hea	Ith and environmental regulations/legislation specific for the sub	ostance or mixture:
	erfund Amendments and Reauthorization): 5 (extremely hazardous substances):	
	ingredients are listed.	
	3 (Specific toxic chemical listings):	
7440-39-3		
7429-90-5		
7429-90-5 7		
	Aluminium Oxide	
7440-50-8		
7440-50-8		
	c Substances Control Act):	ACTI
7439-89-6		
7440-39-3		ACTI
	Titanium Dioxide	ACTI
	Iron Oxide	
7439-93-2		ACTI
	Aluminium	ACTI
	Magnesium	
7440-02-0 7440-21-3		ACTI
		ACTI
	Magnesium Oxide	
	Aluminium Oxide	ACTI
	Molybdenum	ACTI
	Carbon Fiber	ACTI
7440-50-8		
7440-67-7		ACTI
7631-86-9	Silicon Dioxide	ACTI
7440-32-6		ACTI
		ACTI
7440-62-2		ACTI
Hazardous	Air Pollutants	



WARNING: This product can expose you to chemicals including the listed chemicals which are known to the State of California to cause cancer, birth defects and/or other reproductive harm. For more information, go to www.P65Warnings.ca.gov.

Safety Data Sheet (SDS) OSHA HazCo rd 29 CFR 1910.1200(g) and GHS Rev 03. Reviewed on 11/04/2019

Trade Name: Carbon Steel Electrodes and Rods for Gas Shielded Arc Welding

12 Ecological Information
· Toxicity:
· Aquatic toxicity:
13463-67-7 Titanium Dioxide
EC50  >1,000 mg/l (Water flea)
7439-93-2 Lithium
EC50   153.44 mg/l (Green algae)
10 mg/l (Daphnia) (with pH-adjustment)
7440-02-0 Nickel
EC50   1 mg/l (Water flea)
7440-50-8 Copper
EC50   0.04-0.05 mg/l (Water flea)
7631-86-9 Silicon Dioxide
EC50  >1,000 mg/l (Daphnia) (OECD 202)
Behavior in environmental systems: Bioaccumulative potential: No further relevant information available. Mobility in soil: No further relevant information available. Additional ecological information: General notes: Do not allow undiluted product or product that has not been neutralized to reach ground water, water course or sevage system. PBT: Not applicable. PDT: Not applicable. Other adverse effects: No further relevant information available.
13 Disposal Considerations
<ul> <li>Waste treatment methods</li> <li>Recommendation:</li> <li>Must not be disposed of together with household garbage. Do not allow product to reach sewage system.</li> <li>Observe all federal, state and local environmental regulations when disposing of this material.</li> </ul>
<ul> <li>Uncleaned packaging</li> <li>Recommendation: Disposal must be made according to official regulations.</li> </ul>
14 Transport Information
· UN-Number:

Issue date 11/04/2019

DOT, ADR/ADN, ADN, IMDG, IATA DOT, ADR/ADN, ADN, IMDG, IATA UN proper shipping name: DOT, ADR/ADN, ADN, IMDG, IATA Transport hazard class(es): DOT, ADR/ADN, ADN, IMDG, IATA Class: Packing group: DOT, ADR/ADN, IMDG, IATA Environmental hazards:

Non-Regulated Material Non-Regulated Material Non-Regulated Material Non-Regulated Material Not applicable.

(Contd. on page 15)

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# Safety Data Sheet (SDS) OSHA HazCom Standard 29 CFR 1910.1200(g) and GHS Rev 03.

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Reviewed on 11/04/2019

Trade Name: Carbon Steel Electrodes and Rods for Gas Shielded Arc Welding

Issue date 11/04/2019

Chemicals	known to cause cancer:	
13463-67-7	Titanium Dioxide	
7440-02-0	Nickel	
Chemicals	known to cause reproductive toxicity for females:	
	ingredients are listed.	
Chemicals	known to cause reproductive toxicity for males:	
	ingredients are listed.	
	known to cause developmental toxicity:	
	ingredients are listed.	
	•	
7440-39-3	Right-to-Know List:	
	Titanium Dioxide	
1317-95-9 7439-93-2		
	Aluminium	
7439-95-4	Magnesium	
7440-02-0		
	Magnesium Oxide Aluminium Oxide	
	Molybdenum	
7440-50-8		
7440-67-7		
7440-32-6		
7440-62-2		
	Special Hazardous Substance List:	
7440-39-3		F3, R
1317-95-9		CA
7439-93-2		F2, F
7429-90-5	Aluminium	F3, F
7440-02-0		CA
7440-21-3		F3
7440-67-7		F4, R
7440-32-6	Titanium	F3, R
Pennsylvar	nia Right-to-Know List:	
7440-39-3	Barium	
13463-67-7	Titanium Dioxide	
1317-95-9	Silica	
7439-93-2	Lithium	
7429-90-5	Aluminium	
7439-95-4	Magnesium	
	Nickel	

#### Safety Data Sheet (SDS) Com Standard 29 CFR 1910.1200(g) and GHS Rev 03. OSHA HazCo

Issue date 11/04/2019

	Silicon		
1344-28-1	Magnesium Oxide		
	Aluminium Oxide		
7439-98-7	Molybdenum		
7440-50-8	Copper		
7440-67-7	irconium		
7631-86-9	Silicon Dioxide		
7440-62-2	/anadium		
Pennsylvan	a Special Hazardous Substance List:		
7440-39-3 B	arium		E
7429-90-5 A	uminium		E
7440-02-0 N	ckel		E
1344-28-1 A	uminium Oxide		E
7440-50-8 C	opper		E
7440-62-2 V	anadium		E
Carcinogeni	c categories:		
	nmental Protection Agency):		
7440-39-3 B			D, CBD(inh), NL(ora
7440-50-8 C	opper		D
TLV (Thresh	old Limit Value established by ACGIH):		
7440-39-3			A
13463-67-7	Fitanium Dioxide		A
1317-95-9			A
7429-90-5	Numinium		A
7440-02-0	lickel		A
1309-48-4	Magnesium Oxide		A
1344-28-1	Aluminium Oxide		A
7430-08-7	Molybdenum		A
	lirconium		A
7440-67-7	lational lastitute for Oceanational O.S	ealth):	
7440-67-7	lational Institute for Occupational Safety and He		
7440-67-7 NIOSH-Ca (I	lational Institute for Occupational Safety and He Fitanium Dioxide		
7440-67-7 NIOSH-Ca (I	Titanium Dioxide		



(Contd. on page 18)

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#### Safety Data Sheet (SDS) OSHA HazCom Stand and 29 CFR 1910.1200(g) and GHS Rev 03.

Page 18/19

Reviewed on 11/04/2019

Issue date 11/04/2019 de Nemer Carb Steel Flee

Trade Name: Carbor	steel Electrodes and Rods for Gas Shielded Arc Welding
Lithium	
Silica	
Nickel	
Titanium	
<ul> <li>Hazard statement</li> </ul>	
H315 Causes skir	n irritation.
H318 Causes seri	
	an allergic skin reaction.
H350 May cause of	
	espiratory irritation.
	hage to organs through prolonged or repeated exposure.
<ul> <li>Precautionary st</li> </ul>	
P201 P202	Obtain special instructions before use.
P202 P260	Do not handle until all safety precautions have been read and understood.
P260 P264	Do not breathe dust/fume/gas/mist/vapors/spray.
P264 P270	Wash thoroughly after handling. Do not eat, drink or smoke when using this product.
P270 P271	Use only outdoors or in a well-ventilated area.
P272	Contaminated work clothing must not be allowed out of the workplace.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352	If on skin: Wash with plenty of water.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
	B If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if
1 000 11 001 11 000	present and easy to do. Continue rinsing.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P312	Call a poison center/doctor if you feel unwell.
P321	Specific treatment (see supplementary first aid instructions on this Safety Data Sheet).
P362+P364	Take off contaminated clothing and wash it before reuse.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P363	Wash contaminated clothing before reuse.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.
M-41	
National regulati	
None of the ingred	
<ul> <li>Chemical safety</li> </ul>	assessment: A Chemical Safety Assessment has not been carried out.

16 O

SOWESCO urges each end user and recipient of this SDS to study it carefully. If necessary, consult an industrial hygienist or other expert to understand this information and safeguard the environment and protect workers from potential hazards associated with the handling or use of this product. This information is believed to be accurate as of the revision date shown above. However, no warranty, expressed or implied, is given. Because the conditions or methods of use are beyond SOWESCO's control, we assume no liability resulting from the use of this product. Regulatory requirements are subject to change and may differ between various locations. Compliance with all applicable Federal, State, Provincial, and Local laws and regulations remain the responsibility of the user.

Termain une responsioning on the user. • Date of last revision/ revision number: 11/04/2019 / 2 Abbreviations and acconyms: ADR: The European Agreement concerning the International Carriage of Dangerous Goods by Road ADN: The European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways IMDC: International Martime Code for Dangerous Goods DDT: US Department of Transportation

OSHA HazCom Standard 29 CFR 1910.1200(g) and GHS Rev 03. Issue date 11/04/2019 Reviewed on 11/04/2019 Trade Name: Carbon Steel Electrodes and Rods for Gas Shielded Arc Welding

Safety Data Sheet (SDS)

 Add Amari: Carbon Steel Electrodes and Rods for Gas Shielded Act Welding

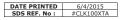
 Marcine Carbon Steel Electrodes and Rods for Gas Shielded Act Welding

 Marcine Carbon Steel Electrodes and Rods for Gas Shielded Act Welding

 Marcine Carbon Steel Ca

Reviewed on 11/04/2019





#### SAFETY DATA SHEET

CAULK 100XT COMPONENT A

#### 1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: CAULK 100XT COMPONENT A

PRODUCT CODE: PRODUCT USE: MANUFACTURER #CLK100XTA DUDICK INC 1818 MILLER PARKWAY STREETSBORO, OH, 44241 330-562-1970

#CLK100XTA Resin component of 2 part chemical resistant caulk. 24 HR. EMERGENCY TELEPHONE NUMBER CHEM-TEL (US Transportation): (800)255-3924 CHEM-TEL (US Transportation): (800)255-3924 (HEM-TEL (International : +01-813-248-0585 Transportation)

#### 2. HAZARDS IDENTIFICATION

CLASSIFICATION: Flammable Liquids - Category 2

GHS LABEL ELEMENTS:



#### SIGNAL WORD: Danger HAZARD STATEMENTS:

H225 Highly Flammable liquid and vapor

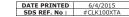
#### PRECAUTIONARY STATEMENTS :

- PAG Ground/bond container and receiving equipment.
   P240 Ground/bond container and receiving equipment.
   P241 Use explosion-proof electrical/ventilating/lighting/mixing/ equipment.
   P370+P378. In case of fire: Use foam, dry chemical, or carbon dioxide for extinction.
   P403+P233 Store in a well-ventilated place. Keep container tightly closed.
   P501 Dispose of contents/container in accordance with local, regional, and federal regulations.
   P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
   P234 Use only non-sparking tools.

- P242 Use only non-sparking tools.

- P243 Take precautionary measures against static discharge.
   P240 Take precautionary measures against static discharge.
   P280 Wear protective gloves/protective clothing/eye protection/face protection.
   P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing.
   Rinse skin with water/shower.

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#### 3. COMPOSITION/INFORMATION ON HAZARDOUS INGREDIENTS

Chemical Name	Weight %	CAS Number
Acetone	0% to 100%	67-64-1
4-Methyl-2-pentanone	0% to 100%	108-10-1

#### 4. FIRST AID MEASURES

EYES: Hold open eyelids and flush with copious amounts of water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If irritation persists, get medical ontact lenses, if present and easy to do. Commune monogra-advice/attention. SKIN: Wash with soap and water. Contact Physician if irritaion persists.

INALATION: If not breathing, give artificial respiration; if by mouth to mouth use rescuer

INHALATION: If not breathing, give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask etc.). If breathing is difficult, oxygen should be administered by qualified personnel. Consult a physician after significant exposure. Move person to fresh air. If unconscious place in recovery position and seek medical advice. NOTES TO PHYSICIAN: No data available for this product.

#### 5. FIRE FIGHTING MEASURES

SUITABLE EXTINGUISHING MEDIA: Alcohol resistant foam; Carbon Dioxide (CO2); dry chemical; dry sand; use water to keep containers cool. UNSUITABLE EXTINGUISHING MEDIA: Do not use high pressure water jet as this may spread

SPECIFIC HAZARDS IN CASE OF FIRE: Note: Corrosive Hydrogen fluoride may be liberated in fire situations. Use appropriate procedures and protective equipment when handling and disposing of corrosive residue

Burning may produce noxious and toxic fumes. Incomplete combustion may form carbon monoxide SPECIAL PROTECTIVE EQUIPMENT AND PRECAUTION FOR FIRE FIGHTERS: Wear self-contained breathing apparatus (SCBA) in positive pressure mode and full protective clothing.

#### 6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS: Wear self-contained breathing apparatus and full protective PERSONAL PRECADUADES: Wear self-contained breating apparates and full protective clothing. Shut off ignition sources. No flares, smoking or flames in the area. ENVIRONMENTAL PRECAUTIONS: Stop leak if you can do so without risk. Use water spray to reduce vapors. Take up with sand or other non-combustible absorbent material and place into container for later disposal. Use non-sparking tools. Flush area with water. Prevent from entering into soil, diches, severs, waterways, and/or groundwater. METHOD AND MATERIALS FOR CONTAINMENT AND CLEANING UP: Soak up with sand, earth, distormacoup earth or cather cutable isert absorbed material; collect into cutable wasto distormacoup earth or cutable isert absorbed material; collect into cutable wasto distormacoup earth or cutable isert absorbed material; collect into cutable wasto

diatomaceous earth or other suitable inert absorbent material; collect into suitable waste disposal containers. Wash spillage site with large amounts of water. Dispose of in accordance with applicable local and federal environmental control laws and regulations.

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6/4/2015 #CLK100XTA

DATE PRINTED SDS REF. No :

#### DATE PRINTED SDS REF. No : 6/4/2015 #CLK100XTA

#### 7. HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING: Bond and ground containers when transferring liquid. Keep container tightly closed when not in use

CONDITIONS FOR SAFE STORAGE, INCLUDING INCOMPATIBILITIES: Store in a cool, dry, ventilated, flammable liquid storage are

#### 8. EXPOSURE CONTROLS\PERSONAL PROTECTION

#### EXPOSURE LIMITS

Components	CAS	Limits
Acetone	67-64-1	
4-Methyl-2-pentanone	108-10-1	OSHA PEL 100 ppm ACGIH TLV 50 ppm

#### ENGINEERING CONTROLS: Ventilation:

ENGINEERING CONTROLS: Ventilation: Use local exhaust ventilation, or other engineering controls to maintain airborne levels requirements or guidelines. General ventilation may not be sufficient. PERSONAL PROTECTIVE EQUIPMENT RESPIRATORY PROTECTION: Respiratory protection required if airborne concentration exceeds TLV. At concentrations up to 1000 PPM, a NIOSH approved cartridge respirator with organic vapor cartridge is recommended. Above this level, a self-contained breathing apparatus is recommended

EVENTMENTED EVES PROTECTION: Splash-proof chemical goggles. SKIN PROTECTION: Selection of specific items such as face shield, boots, apron, or full body

suit will depend on the task. Hand protection: Use chemical resistant gloves. Consult glove manufacturer for

recommendations. WORK HYGIEINIC PRACTICES: Use good personal hygiene. Do not consume or store food in the work area. Wash hands before smoking or eating. Wash contaminated clothing before reuse. OTHER USE PRECAUTIONS: The type and degree of personal protective equipment will depend on the specific work operation. Eve wash stations and emergency showers should be available. Inspect and replace personal protective equipment at regular intervals; use professional care in their selection, use and care. COMMENTS: None

#### 9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: Liquid COLOR: Pale amber FLASH POINT AND METHOD: -14 CC AUTO-IGNITION TEMPERATURE: Not Determined. AUTO-IGNITION TEMPERATURE: No BOILING POINT/RAMGE: 56C MELTING POINT: Not Determined. VAPOUR PRESSURE: Not determined. VAPOUR DENSITY: Heavier than air. SOLUBILITY: Not determined. ODOR/THENDOL: Organic solvent LOWER / UPPER FLAMMABLE LIMITS: No data available for this product. DENSITY: 1.5108 EVAPORATION RATE: Slower than ether.

PARTITION COEFFICIENT: Not determined.

pH: Not Applicable.
DECOMPOSITION TEMPERATURE: Not determined.

**10. STABILITY AND REACTIVITY** 

CHEMICAL STABILITY: This product is stable under normal storage conditions. POSSIBILITY OF HAZARDOUS REACTIONS: Will not occur under normal conditions. CONDITIONS TO AVOID: Avoid heat, flame, sparks, and other sources of ignition. MATERIALS TO AVOID: Aldehydes, esters, alkyline oxides, ammonia, halogens and acid

HAZARDOUS DECOMPOSITION PRODUCTS: None under normal conditions Incomplete combustion may generate carbon monoxide, carbon dioxide.

## 11. TOXICOLOGICAL INFORMATION

11. TOXICOLOGICAL INFORMATION SIGNS AND SYMPTOMS OF OVEREXPOSURE: ACUTE EFFECTS: EYE CONTACT: No data available for this product. SKIN CONTACT: No data available for this product. INHALATION: No data available for this product.

INHALATION: No data available for this product. INGESTION: No data available for this product. TARGET ORGAN: No data available for this product. CHRONIC EFFECTS: Not determined 4-Methyl-2-pentanone is listed as a Group B possible carcinogen by IARC. TOXICITY VALUES: Not determined

12. ECOLOGICAL INFORMATION PERSISTENCE AND DEGRADABILITY: Not determined BIO-ACCUMULATIVE POTENTIAL: this product. MOBILITY IN SOIL: OTHER ADVERSE EFFECTS:

ECOTOXICOLOGICAL OTHER INFORMATION: May be harmful to aquatic life

#### 13. DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: Dispose of according to local, state, and federal regulations through a licensed disposal facility.

#### 14. TRANSPORT INFORMATION

UN NUMBER: UN1133 UN PROPER SHIPPING NAME: Adhesives TRANSPORT HAZARD CLASS: TRANSPORT HAZARD SUBCLASS: Not applicable. PACKING GROUP: II MARINE POLLUTANT Y/N:

SPECIAL PRE-CAUTIONS: No data available for this product

#### 15. REGULATORY INFORMATION

#### U.S. REGULATIONS:

All components of this product are listed on or exempt from the TSCA Inventory.
U.S. SARA TITLE III (SUPERFUND AMENDMENRS AND REAUTHORIZATION ACT)
311/312 HAZARD CATEGORIES:
FIRE: Yes
DRESSURE GENERATING: No

- REACTIVITY: No ACUTE: Yes
- CHRONIC: No

#### 

313 REPORTABLE INGREDIENTS:		
313 REPORTABLE INGREDIENTS		
Chemical Name	Weight %	CAS
4-Methyl-2-pentanone	10% to 15%	108-10-1

# 302/304 EMERGENCY PLANNING EMERGENCY PLAN: No reportable components

#### STATE REGULATIONS:

Chemical Name	CAS
4-Methyl-2-pentanone	108-10-1
ssachusetts Right To Know Components	
Chemical Name	CAS
Acetone	67-64-1
4-Methyl-2-pentanone	108-10-1
nnsylvania Right To Know Components	
Chemical Name	CAS
Acetone	67-64-1
4-Methyl-2-pentanone	108-10-1
w Jersey Right To Know Components	
Chemical Name	CAS
Acetone	67-64-1
4-Methyl-2-pentanone	108-10-1

OTHER GOVT. REGULATIONS: No data available for this product

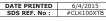
#### 16. OTHER INFORMATION

#### DATE CREATED 06-04-15

MANUFACTURER DISCLAIMER: The information contained herein is accurate to the best of our MANUFACTURER DISCLAIMER: The information contained nervin is accurate to the best of our knowledge. Dudick, Inc. makes no warranty of any kind, express or implied, concerning the safe use of this material in your process or in combination with other substances and with respect to the completeness or continuing accuracy of the information contained herein and disclaims all liability for reliance thereon. The information contained on this MSDS has been compiled from information obtained from raw material suppliers and is believed to be accurate. It is the

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#### SAFETY DATA SHEET

#### CAULK 100XT COMPONENT B

1. PRODUCT AND COMPANY IDENTIFICATION

 
 PRODUCT NAME:
 CAULK 100XT COMPONENT B

 PRODUCT CODE:
 #CLK100XTB

 PRODUCT USE:
 Hardener for 2 component che
 Hardener for 2 component chemical resistant caulk MANUFACTURER 24 HR. EMERGENCY TELEPHONE NUMBER CHEM-TEL (US Transportation): (800)255-3924 CHEM-TEL (International :+01-813-248-0585 Transportation) DUDICK INC 1818 MILLER PARKWAY STREETSBORO, OH, 44241 330-562-1970

#### 2. HAZARDS IDENTIFICATION

CLASSIFICATION: Flammable Liquids - Category 2 Specific target organ toxicity - single exposure - Category 1 Acute toxicity - Dermal - Category 3 Acute Toxicity - Inhalation - Category 3 Acute Toxicity - Inhalation - Category 3

#### GHS LABEL ELEMENTS:



## HAZARD STATEMENTS:

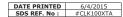
H225 Highly Flammable liquid and vapor H301+H311+H331 Toxic if swallowed, in contact with skin, or if inhaled. H370 Causes damage to organs.

PRECAUTIONARY STATEMENTS : P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
 P260 Do not breathe dust/fume/gas/mist/vapors/spray.
 P240 Ground/bond container and receiving equipment.
 P241 Use explosion-proof electrical/ventilating/lighting/mixing/ equipment.
 P30+P378 In case of fire: Use foam, dry chemical, or carbon dioxide for extinction.
 P30+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable

for breathing P403+P233 Store in a well-ventilated place. Keep container tightly closed.

P363 Wash contaminated clothing before reus.
 P501 Dispose of contents/container in accordance with local, regional, and federal regulations.



# responsibility of the user to ensure that he/she has all of the current data and MSDS relevant to the material thereon and to comply with all Federal, State and Local Regulations.



#### Page - 6 - of 6

#### DATE PRINTED SDS REF. No : 6/4/2015 #CLK100XTB

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking

 P210 Keep away from neatysparks/open names/not surraces. — No smoking.
 P233 Keep container tightly closed.
 P242 Use only non-sparking tools.
 P243 Take precautionary measures against static discharge.
 P240 Do not eat, drink or smoke when using this product.
 P280 Wear protective gloves/protective clothing/eye protection/face protection.
 P303-P361-P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing.
 Rinse skin with water/chower. Rinse skin with water/shower.

#### 3. COMPOSITION/INFORMATION ON HAZARDOUS INGREDIENTS

Chemical Name	Weight %	CAS Number
N,N'-bis(1,3-dimethylbutylidene)ethylenediamine	0% to 100%	25707-70-4
Ethyl alcohol	0% to 100%	64-17-5
Methyl alcohol	0% to 100%	67-56-1
ercentage of components is a trade secret.		

#### 4. FIRST AID MEASURES

EYES: Hold open eyelids and flush with copious amounts of water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If irritation persists, get medical advice/attention.

SKIN: Wash with soap and water. Contact Physician if irritaion persists. **INGESTION:** Do not induce vomiting without medical advice. Consult Advision

Consult physician.

Consult physician. IMHALATION: If not breathing, give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask etc.). If breathing is difficult, oxygen should be administered by qualified personnel. Consult a physician after significant exposure. Move person to fresh air. If unconscious place in

recovery position and seek medical advice.

NOTES TO PHYSICIAN: No data available for this product.

#### 5. FIRE FIGHTING MEASURES

SUITABLE EXTINGUISHING MEDIA: Alcohol resistant foam; Carbon Dioxide (CO2); dry chemical; dry sand; use water to keep containers cool. UNSUITABLE EXTINGUISHING MEDIA: Do not use high pressure water jet as this may spread

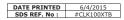
SPECIFIC HAZARDS IN CASE OF FIRE: Burning may produce noxious and toxic fumes. Incomplete

combustion may form carbon mon

SPECIAL PROTECTIVE EQUIPMENT AND PRECAUTION FOR FIRE FIGHTERS: Wear self-contained breathing apparatus (SCBA) in positive pressure mode and full protective clothing.

#### 6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS: Wear self-contained breathing apparatus and full protective clothing. Shut off ignition sources. No flares, smoking or flames in the area. ENVIRONMENTAL PRECAUTIONS: Stop leak if you can do so without risk. Use water spray to reduce vapors. Take up with sand or other non-combustible absorbent material and place into



container for later disposal. Use non-sparking tools. Flush area with water. Prevent from entering into soil, ditches, sewers, waterways, and/or groundwater. METHOD AND MATERIALS FOR CONTAINMENT AND CLEANING UP: Soak up with sand, earth, diatomaceous earth or other suitable inert absorbent material; collect into suitable waste disposal containers. Wash spillage site with large amounts of water. Dispose of in accordance with applicable local and federal environmental control laws and regulations.

#### 7. HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING: Bond and ground containers when transferring liquid. Keep container tightly closed

CONDITIONS FOR SAFE STORAGE, INCLUDING INCOMPATIBILITIES: Store in a cool. drv. ventilated, flammable liquid storage area

#### 8. EXPOSURE CONTROLS\PERSONAL PROTECTION

EXPOSURE LIMITS				
Components	CAS	Limits		
N,N'-bis(1,3-	25707-70-4	OSHA PEL 100 ppm		
dimethylbutylidene)ethylenediamine		ACGIH TLV 75 ppm		
Ethyl alcohol	64-17-5	OSHA PEL 1000 ppm		
		ACGIH TLV 1000 ppm		
Methyl alcohol	67-56-1	OSHA PEL 200 ppm		
		ACGIH TLV 200 ppm		

ENGINEERING CONTROLS: Ventilation: Use local exhaust ventilation, or other engineering controls to maintain airborne levels requirements or quidelines. General ventilation may not be sufficient.

PERSONAL PROTECTIVE EQUIPMENT RESPIRATORY PROTECTION: Respiratory protection required if airborne concentration exceeds TUX. At concentrations up to 1000 PPM, a NIOSH approved cartridge respirator with organic vapor cartridge is recommended. Above this level, a self-contained breathing apparatus is

recommended

recommended. EYES PROTECTION: Splash-proof chemical goggles. SKIN PROTECTION: Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task. Hand protection: Use chemical resistant gloves. Consult glove manufacturer for

CC

recommendations. WORK HYGIENIC PRACTICES: Use good personal hygiene. Do not consume or store food in the WORK DISLETIC FRACLICES: Use good personal hygiene. Do not consume or store food in the work area. Wash hands before smoking or eating. Wash contaminated clothing before reuse. OTHER USE PRECAUTIONS: The type and degree of personal protective equipment will depend on the specific work operation. Eye wash stations and emergency showers should be available. Inspect and replace personal protective equipment at regular intervals; use professional care in their selection, use and care. COMMENTS: None.

#### 9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: Liquid FLASH POINT AND METHOD: 14C

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	DATE PRINTED	6/4/2015
	SDS REF. No : #	CLK100XTB
14. TRANSPORT INFORMATION		
UN NUMBER: UN1133		
UN PROPER SHIPPING NAME: Adhesives		
TRANSPORT HAZARD CLASS:		
3		
TRANSPORT HAZARD SUBCLASS:		
Not applicable. PACKING GROUP: II		
MARINE POLLUTANT Y/N:		
No		
SPECIAL PRE-CAUTIONS: No data available for this p	roduct.	
15. REGULATORY INFORMATION		
U.S. REGULATIONS:		
All components of this product are listed on or exempt		
U.S. SARA TITLE III (SUPERFUND AMENDMENRS A	AND REAUTHORIZATION	ACT)
311/312 HAZARD CATEGORIES:		
FIRE: Yes PRESSURE GENERATING: No		
REACTIVITY: No		
ACUTE: Yes		
CHRONIC: No		

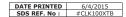
#### 313 REPORTABLE INGREDIENTS **313 REPORTABLE INGREDIENTS**

302/304 EMERGENCY PLANNING EMERGENCY PLAN: No reportable components

#### STATE REGULATIONS:

Chemical Name	CAS
Methyl alcohol	67-56-1
ssachusetts Right To Know Components	
Chemical Name	CAS
Ethyl alcohol	64-17-5
Methyl alcohol	67-56-1
nnsylvania Right To Know Components	
Chemical Name	CAS
Ethyl alcohol	64-17-5
Methyl alcohol	67-56-1
w Jersey Right To Know Components	
Chemical Name	CAS
Ethyl alcohol	64-17-5
Methyl alcohol	67-56-1

OTHER GOVT. REGULATIONS: No data available for this product.



AUTO-IGNITION TEMPERATURE: Not Determined. BOILING POINT/RANGE: 76C MELTING POINT: Not Determined. MELTING POINT: Not Determined. VAPOUR PRESSURE: Not determined. VAPOUR DENSITY: Heavier than air. SOLUBILITY: Not determined. ODOR/THRESHOLD: Organic solvent LOWER / UPPER FLAMMABLE LIMITS: No data available for this product. DENSITY: 0.8202 VAPOR DENSITY: Clawse them other EVAPORATION RATE: Slower than ether PARTITION COEFFICIENT: Not determined. pH: Not Applicable. DECOMPOSITION TEMPERATURE: Not determined.

**10. STABILITY AND REACTIVITY** 

CHEMICAL STABILITY: This product is stable under normal storage conditions. POSSIBILITY OF HAZARDOUS REACTIONS: Will not occur under normal conditions. CONDITIONS TO AVOID: Avoid heat, flame, sparks, and other sources of ignition. MATERIALS TO AVOID: Aldehydes, esters, alkyline oxides, ammonia, halogens and acid polywidride.

anhydrides. **HAZARDOUS DECOMPOSITION PRODUCTS:** None under normal conditions Incomplete combustion may generate carbon monoxide, carbon dioxide.

11. TOXICOLOGICAL INFORMATION SIGNS AND SYMPTOMS OF OVEREXPOSURE: ACUTE EFFECTS: ACUTE EFFECTS: EYE CONTACT: No data available for this product. SKIN CONTACT: No data available for this product. INHALTION: No data available for this product. INGESTION: No data available for this product. TARGET ORGAN: No data available for this product. CHRONIC EFFECTS: Not determined TOXICITY VALUES: Not determined

## 12. ECOLOGICAL INFORMATION

PERSISTENCE AND DEGRADABILITY: Not dete BIO-ACCUMULATIVE POTENTIAL: No data available for this product. MOBILITY IN SOIL: OTHER ADVERSE EFFECTS: ECOTOXICOLOGICAL OTHER INFORMATION: May be harmful to aquatic li

#### 13. DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: Dispose of according to local, state, and federal regulations through a licensed disposal facility

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#### DATE PRINTED SDS REF. No : 6/4/2015 #CLK100XTB

#### 16. OTHER INFORMATION

#### DATE CREATED 06-04-15

MANUFACTURER DISCLAIMER: The information contained herein is accurate to the best of our MANUFACTURER DISCLAIMER: The information contained herein is accurate to the best of our knowledge. Dudick, Inc. makes no warranty of any kind, express or implied, concerning the safe use of this material in your process or in combination with other substances and with respect to the completeness or continuing accuracy of the information contained herein and disclaims all liability for reliance thereon. The information contained on this MSDS has been compiled from information obtained from raw material suppliers and is believed to be accurate. It is the responsibility of the user to ensure that he/she has all of the current data and MSDS relevant to the material thereon and to comply with all Federal, State and Local Regulations.





## Safety Data Sheet CO2/Argon Shielding Mix

Red Ball Oxygen Co., Inc. P.O. Box 7316 Shreveport, LA 71137-7316 Phone: 318-425-6302 http://www.redballoxygen.com

#### Section 1: Product and Company Identification

Red Ball Oxygen Co., Inc. P.O. Box 7316 Shreveport, LA 71137-7316 Phone: 318-425-3211 Fax: 318-425-6302 http://www.redballoxygen.com

Product Code: CO2/Argon Shielding Mix Synonyms: Recommended Use: Usage Restrictions:

#### Section 2: Hazards Identification



Hazard Classification: Aspiration Hazard (Category 1) Eye Effects (Category 2.B) Gases Under Pressure

Hazard Statements: Causes eye irritation Contains gas under pressure; may explode if heated May be fatal if swallowed and enters airways

Precautionary Statements Prevention: Wash thoroughly after handling.

Response: Do NOT induce vontiling. If in eyes: Rines cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If swallowed: Rinse mouth. Do NOT induce vomiting. Immediately call a poison center or doctor.

Storage: Protect from sunlight. Store in well-ventilated place. Red Ball Oxyge Co., Inc. Generated by the SDS Manager from AsteRisk, LLC. All Rights Reserved

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### Store locked up.

Dispose of contents and/or container in accordance with applicable regulations.

#### Section 3: Composition/Information on Ingredients

	CAS #	Concentration
Carbon Dioxide	124-38-9	0.5-99%
Argon	7440-37-1	1-99%

	Chemical Substance	Chemical Family	Trade Names
Carbon Dioxide	CARBON DIOXIDE, GAS	oxides of carbon	CARBONIC ACID GAS; CARBONIC ANHYDRIDE; CARBON DIOXIDE; CARBON OXIDE: UN 1013: CO2
Argon	ARGON, COMPRESSED	non-metallic	ARGON; UN 1006; AR

#### Section 4: First Aid Measures

	Skin Contact	Eye Contact	Ingestion	Inhalation	Note to Physicians
Carbon Dioxide	If frostbite or freezing occur, immediately flush with plenty of lukewarm water (105-115 F; 41-46 C). DO NOT USE HOT WATER. If warm water is not available, gently wrap affected parts in blankets. Get immediate medical attention.	Contact with liquid: Immediately flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.	Do not induce vomiting.	If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.	For inhalation, consider oxygen.
Argon	Not applicable route of exposure	Flush eyes with plenty of water.	Not applicable route of exposure	If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.	For inhalation, consider oxygen.

#### Section 5: Fire Fighting Measures

	Suitable Extinguishing Media	Products of Combustion	Protection of Firefighters
Carbon Dioxide	Non-flammable	Non-flammable	<ul> <li>Any appropriate escape-type, self-contained breathing apparatus.</li> <li>Non-flammable</li> </ul>
Argon	Non-flammable gas	Not applicable	<ul> <li>N/A</li> <li>N/A</li> </ul>

#### Section 6: Accidental Release Measures

	Personal Precautions	Environmental Precautions	Methods for Containment

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#### ersonal Precautions Environmental Precautions lethods for Subject to California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65). Keep out of water supplies and sewers. None known. Keep unnecessary people away, isolate hazard area and deny entry. Veniliate cicsed spaces before entering. Do not touch spilled material. Keep unnecessary people away, isolate hazard area and deny entry. Stay upwind and keep out of low areas. Containment Stop leak if possible Carbon Dioxide without personal risk. Argon Stop leak if possible without personal risk. Methods for Cleanup Other Information Carbon Dioxide Stop leak, evacuate, remove source of ignition. Argon Leaks may be detected by a soapy-water solution None

#### Section 7: Handling and Storage

	Handling	Storage
Carbon Dioxide	Subject to storage regulations: U.S. OSHA 29 CFR 1910.101. Keep separated from incompatible substances.	Store and handle in accordance with all current regulations and standards
Argon	Store and handle in accordance with all current regulations and standards. Subject to storage regulations: U.S. OSHA 29 CFR 1910.101. Keep separated from incompatible substances.	Avoid using in confined spaces.

#### Section 8: Exposure Controls/Personal Protection

	Exposure Guidelines
Carbon	CARBON DIOXIDE, GAS: CARBON DIOXIDE: 5000 ppm (9000 mg/m3) OSHA TWA 10000 ppm (18000 mg/m3) OSHA TWA
Dioxide	(vacated by 58 FR 35338, June 30, 1993) 20000 ppm (54000 mg/m3) OSHA STEL (vacated by 58 FR 35338, June 30, 1993) 5000 ppm ACGIH TWA 30000 ppm ACGIH STEL 5000 ppm (9000 mg/m3) NIOSH recommended TWA 10 hour(s) 30000 ppm (54000 mg/m3) NIOSH recommended STEL
Argon	ARGON, COMPRESSED: ARGON: ACGIH (simple asphyxiant)

Engineering Controls Handle only in fully enclosed systems.

	Eye Protection	Skin Protection	Respiratory Protection
Carbon Dioxide	For the gas: Eye protection not required, but recommended. For the liquid: Wear splash resistant safety goggles. Contact lenses should not be worn. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.		Any appropriate escape- type, self-contained breathing apparatus.
Argon	Eye protection not required, but recommended.	Protective clothing is not required.	N/A

General Hygiene considerations

Avoid breathing vapor or mist Avoid contact with eyes and skin Wash thoroughly after handling and before eating or drinking

#### Section 9: Physical and Chemical Properties

	Physical St	ate Appearan	ce Color	Change in Appearance	Physical Form	n Odor	Taste
Carbon Dioxide	Gas	Colorless	Colorless	N/A	Gas	Odorless	Acid taste
Argon	Gas	Colorless	Colorless	N/A	Gas	Odorless	Tasteless
	Flash Point	Flammability	Partition Coefficient	Autoignition Temperature	Upper E Limits	xplosive	Lower Explosiv Limits
Carbon Dioxide	Not flammable	Not available	N/A	Nonflammable	Nonflam	mable	Nonflammable
Argon	Not flammable			Nonflammable	Nonflam	mable	Nonflammable

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	Boiling Point	Freezing Point	Vapor Pressure	Vapor Density	Specific Gravity	Water Solubili	pH ty		dor 1reshold	Evaporation Rate	Viscosity
Carbon Dioxide	Not available	-71 F (-57 C) @ 4000 mmHg	43700 mmHg @ 21 C	1.5 (Air=1)	1.522 @ 21 C	Soluble	3.7 (satur aqueo solutio @ 101 kPa (carbo acid)	us n) .3	ot railable	Not applicable	0.01657 cP @ 0 C
Argon	-303 F (- 186 C)	-308 F (- 189 C)	500 mmHg @ -190 C	1.38 (Air=1)	Not applicable	3.36% @ 20 C	Not applic	able av	ot railable	Not applicable	0.0225 cl @ 25 C
	Molecul Weight		lecular rmula	Density	Weight p Gallon		atility by ume	Volatili	ty S	olvent Solubility	
Carbon Dioxide	44.01	C-	02	0.114	Not availa	ble Not	applicable	Not applical		oluble: Alcohol, ac ydrocarbons, orga	
Argon	39.948	AF		1.784 g/L @ 0 C	Not availa	ble 100	%	Not applical		oluble: Organic so	lvents

## Section 10: Stability and Reactivity

	St	ability	Condition	ns to Avoid	Incompatible Materials
Carbon	St	able at normal temperatures	Stable at r	normal temperatures	Combustible materials, oxidizing materials, metal salts,
Dioxide	an	nd pressure.	and press	ure.	reducing agents, metal carbide, metals, bases
Argon	gon Stable at normal temperatures		Stable at normal temperatures		No data available.
-	an	nd pressure.	and pressure.		
		Hazardous Decomposition	Products	Possibility of Hazar	dous Reactions
Carbon Dioxide		Carbon monoxide		Will not polymerize.	
		No data available.		Will not polymerize.	

#### Section 11: Toxicology Information

	Or	al LD50	Dermal LD50	Inhalatio	n			
Carbon Dioxide	No est	t ablished	Not establish				lar heartbeat, headache, drow focation, convulsions, coma	siness, dizziness, tingling
Argon								che, dizziness, disorientation, mo ulsions, unconsciousness, coma
		Eye Irrita	tion			Skin Irritation		Sensitization
Carbon Diox	cide	Irritation, f	rostbite, b	lurred vision		Liquid: blisters, frostbite		Difficulty breathing
Argon		No inform	ation on si	gnificant adverse	effects	No information	on significant adverse effects	Difficulty breathing
Chronic E	ffec	ts						
		Carcinog	enicity	Mutagenicity	Reprod	luctive Effects	Developmental Effects	
	cide	Not availa	ble	Not established	Availab	le.	No data	
Carbon Diox			ished	Not established		ablished No data		

#### Section 12: Ecological Information

Fate and	Transport			
	Eco toxicity	Persistence / Degradability	Bioaccumulation / Accumulation	Mobility in Environment
Carbon Dioxide	Fish toxicity: 150000 ug/L 48 day(s) (Mortality) Brown trout	Relatively non-persistent in the environment. Moderately volatile from	Accumulates very little in the bodies of living organisms.	Leaches through the soil

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	(Salmo trutta) Invertibrate toxicity: Not available Algal toxicity: Not available Phyto toxicity: Not available Other toxicity: Not available	water.		
Argon	Fish toxicity: Not available Invertibrate toxicity: Not available Algal toxicity: Not available Phyto toxicity: Not available Other toxicity: available	Not available	Not available	Not available

## Section 13: Disposal Considerations

 Carbon Dioxide
 Dispose in accordance with all applicable regulations.

 Argon
 Dispose in accordance with all applicable regulations.

## Section 14: Transportation Information

U.S. DO	T 49 CFR 172	.101						
	Proper Shipping Name	ID Number	Hazard Class or Division	Packing Group	Labeling Requirements	Passenger Aircraft or Railcar Quantity Limitations	Cargo Aircraft Only Quantity Limitations	Additional Shipping Description
Carbon Dioxide	Carbon dioxide	UN1013	2.2	Not applicable	2.2	75 kg or L	150kg	None
Argon	Argon, compressed	UN1006	2.2	Not applicable	2.2	75 kg or L	150 kg	N/A

 
 Canadian Transportation of Dangerous Goods

 Shipping Name
 UN Number
 Class
 Packing Group / Risk Group

 Carbon Dioxide
 Carbon Dioxide
 UN1013
 2.2
 Not applicable

 Argon
 Argon, compressed
 UN100
 2.2
 Not applicable
 Dioxide Carbon dioxide Argon, compre-

#### Section 15: Regulatory Information

	CERCL	A Sections	SAF	RA 355.30	SARA 355.40			
Carbon Dioxide	Not reg	ulated.	Not	regulated.	Not regulated.			
Argon	Not reg	ulated.	Not	regulated.	Not regulated.			
SARA 370.21								
	Acute	Chronic	Fire	Reactive	Sudden Release			
Carbon Dioxide	Yes	No	No	No	Yes			
Argon	Yes	No	No	No	Yes			
Carbon Dioxide Argon				Not regulated. Not regulated.				
Carbon Dioxide	Not reg	ulated.						
Carbon Dioxide		ulated.						
Carbon Dioxide Argon	Not reg Not reg	ulated. ulated.						
Carbon Dioxide Argon	Not reg Not reg	ulated.	5					
OSHA Proces Carbon Dioxide Argon State Regulat Carbon Dioxide	Not reg Not reg	ulated. ulated. position 65	5					

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## **SAFETY DATA SHEET**

1. Identification	
Material name: CONCRETE SURFA	CE RETARDER S
Recommended use and restriction	on use
Recommended use: Coatings Restrictions on use: Not known.	
Manufacturer/Importer/Supplier/Dis EUCLID CHEMICAL COMPANY 19218 REDWOOD ROAD CLEVELAND OH 44110 US	itributor Information
Contact person: Telephone: Emergency telephone number:	EH&S Department 216-531-9222 1-800-424-9300 (US); 1-613-996-6666 (Canada)
2. Hazard(s) identification	
Hazard Classification	
Health Hazards	
Skin Corrosion/Irritation	Category 1A
Serious Eye Damage/Eye In	ritation Category 1
Halmann tardallar Haalth	
Unknown toxicity - Health Acute toxicity, oral	99.6 %
Acute toxicity, dermal	99.99 %
Acute toxicity, inhalation, va	
Acute toxicity, inhalation, due or mist	
Label Elements	
Hazard Symbol:	
A A A A A A A A A A A A A A A A A A A	
Signal Word: Di	anger
Hazard Statement: Ca	auses severe skin burns and eye damage.

	WHMIS Classification		
Carbon Dioxide	A	1	
Argon	A	1	
		-	
National Inve		TSCA 12b Export Notification	Canada Inventory (DSL/NDSL
National Inve Carbon Dioxide		TSCA 12b Export Notification Not listed.	Canada Inventory (DSL/NDSL Listed on inventory.

## Section 16: Other Information

	NFPA Rating
Corbon Dioxido	HEALTH-2 FIRE-0 REACTIVITY-0

 Argon
 HEALTH=2 FIRE=0 REACTIVITY=0

 0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard

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	Precautionary Statements						
	Prevention:		the dust or mists. Wash thoroughly after handling. Wear loves/protective clothing/eye protection/face protection.				
	Response:	breathing. If Remove co SKIN (or ha with water/s Immediately	D: Remove person to fresh air and keep comfortable for in eyes. Rinse cautiously with water for several minutes. Intact lenses, if present and easy to do. Continue rinsing. IF ON ir): Take off immediately all contaminated clothing. Rinse skin hower. If swallowed: Rinse mouth. Do NOT induce vomiting. call a POISON CENTER/doctor. Specific treatment (see this h contaminated clothing before reuse.				
	Storage:	Store locke	Store locked up.				
facility in a			contents/container to an appropriate treatment and disposal cordance with applicable laws and regulations, and product ics at time of disposal.				
	azard(s) not otherwise assified (HNOC):	None.					
3. (	Composition/information	on ingredients	S				
Mi	xtures						
	Chemical Identity	CAS number	Content in percent (%)*				
ľ	Sodium hydroxide	1310-73-2	0.1 - <1%				
	* All concentrations are percent	t by weight unless ing	redient is a gas. Gas concentrations are in percent by volume.				
4 1	First-aid measures		1				
<b>-</b>	not-ula measures						
Ing	gestion:	give liquid to	cian or poison control center immediately. Rinse mouth. Never o an unconscious person. Do not induce vomiting without advice control center.				
Inl	nalation:		cian or poison control center immediately. If breathing stops, icial respiration. Move to fresh air. If breathing is difficult, give				
Sk	in Contact:		cian or poison control center immediately. Immediately flush of water for at least 15 minutes while removing contaminated				

with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Destroy or thoroughly clean contaminated shoes. Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Call a physician or poison control center immediately. Eye contact:

Most important symptoms/effects, acute and delayed

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Symptoms:	Prolonged or repeated contact with skin may cause redness, itching, irritation and eczema/chapping. Extreme irritation of eyes and mucous membranes, including burning and tearing.				
Indication of immediate medical a	ttention and special treatment needed				
Treatment:	Symptoms may be delayed.				
5. Fire-fighting measures					
General Fire Hazards:	No unusual fire or explosion hazards noted.				
Suitable (and unsuitable) extinguishing media					
Suitable extinguishing media:	Use fire-extinguishing media appropriate for surrounding materials.				
Unsuitable extinguishing media:	Do not use water jet as an extinguisher, as this will spread the fire.				
Specific hazards arising from the chemical:	During fire, gases hazardous to health may be formed.				
Special protective equipment an	d precautions for firefighters				
Special fire fighting procedures:	No data available.				
Special protective equipment for fire-fighters:	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.				
6. Accidental release measure	S				
Personal precautions, protective equipment and emergency procedures:	See Section 8 of the SDS for Personal Protective Equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Keep unauthorized personnel away.				
Methods and material for containment and cleaning up:	Dam and absorb spillages with sand, earth or other non-combustible material. Collect spillage in containers, seal securely and deliver for disposal according to local regulations.				
Notification Procedures:	In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.				
Environmental Precautions:	Do not contaminate water sources or sewer. Prevent further leakage or spillage if safe to do so.				

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9. Physical and chemical proper	ties
Appearance	
Physical state:	liquid
Form:	liquid
Color:	Blue
Odor:	Mild
Odor threshold:	No data available.
pH:	12.25
Melting point/freezing point:	No data available.
Initial boiling point and boiling rang	ge: No data available.
Flash Point:	No data available.
Evaporation rate:	Slower than Ether
Flammability (solid, gas):	No
Upper/lower limit on flammability o	r explosive limits
Flammability limit - upper (%):	No data available.
Flammability limit - lower (%):	No data available.
Explosive limit - upper (%):	No data available.
Explosive limit - lower (%):	No data available.
Vapor pressure:	No data available.
Vapor density:	Vapors are heavier than air and may travel along the floor and in the bottom of containers.
Relative density:	1.068
Solubility(ies)	
Solubility in water:	Soluble
Solubility (other):	No data available.
Partition coefficient (n-octanol/wate	er): No data available.
Auto-ignition temperature:	No data available.
Decomposition temperature:	No data available.
Viscosity:	No data available.
10. Stability and reactivity	
Reactivity:	No data available.
Chemical Stability:	Material is stable under normal conditions.
Possibility of hazardous reactions:	No data available.

reactions:	
Conditions to avoid:	Avoid heat or contamination.
Incompatible Materials:	Strong acids. Strong bases.
Hazardous Decomposition Products:	Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapors.

80000050723



7. Handling and storage			
Precautions for safe handling	eyes, c	Do not get in eyes. Wash hands thoroughly after handling. Do not get i eyes, on skin, on clothing. Provide adequate ventilation. Wear appropr personal protective equipment. Observe good industrial hygiene practi	
Conditions for safe storage, including any incompatibilities:	Store I	ocked up.	
8. Exposure controls/perso	nal protect	tion	
Control Parameters Occupational Exposure L	.imits		
Chemical Identity	type	Exposure Limit Values	Source
Sodium hydroxide	Ceiling PEL	2 mg/m3 2 mg/m3	US. ACGIH Threshold Limit Values (2011) US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910,1000) (02 2006)
	None of	of the components have assig	
Appropriate Engineering Controls	limits a	Observe good industrial hygiene practices. Observe occupational exposure limits and minimize the risk of inhalation of vapors and mist. Mechanical ventilation or local exhaust ventilation may be required.	
Individual protection measur	es, such as	personal protective equipr	nent
General information:	ventila rates s enclos mainta	tion (typically 10 air changes hould be matched to conditio ures, local exhaust ventilation in airborne levels below reco	y and eye wash facilities. Good general per hour) should be used. Ventilation ns. If applicable, use process n, or other engineering controls to mmended exposure limits. If exposure aintain airborne levels to an acceptable
Eye/face protection:		a full-face respirator, if neede gles) and a face shield.	d. Wear safety glasses with side shields
Skin Protection Hand Protection:	Use s	uitable protective gloves if ris	k of skin contact.
Other:	approp	Wear chemical-resistant gloves, footwear, and protective clothing appropriate for the risk of exposure. Contact health and safety professional or manufacturer for specific information.	
Respiratory Protection:		of inadequate ventilation us upervisor.	e suitable respirator. Seek advice from
Hygiene measures:	contarr	ninated clothing before reuse ash hands before breaks an	ndustrial hygiene practices. Wash . Do not get this material in contact with d immediately after handling the

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nformation on likely routes of Inhalation:	f exposure In high concentrations, vapors, fumes or mists may irritate nose, throat an mucus membranes.
Skin Contact:	Causes severe skin burns.
Eye contact:	Causes serious eye damage.
Ingestion:	May be ingested by accident. Ingestion may cause irritation and malaise.
Symptoms related to the phys	ical, chemical and toxicological characteristics
Inhalation:	No data available.
Skin Contact:	No data available.
Eye contact:	No data available.
Ingestion:	No data available.
nformation on toxicological e	ffects
Acute toxicity (list all possi	ble routes of exposure)
Oral Product:	Not classified for acute toxicity based on available data.
Specified substance(s): Sodium hydroxide	LD 50 (Rabbit): 325 mg/kg
Dermal Product:	Not classified for acute toxicity based on available data.
Inhalation Product:	
Repeated dose toxicity Product:	No data available.
Skin Corrosion/Irritation Product:	No data available



Sodium hydroxide	in vivo (Rabbit): Irritating Experimental result, Weight of Evidence stu	dy		
Serious Eye Damage/Eye Irritation Product:	on No data available.		12. Ecological information	
Specified substance(s):			Ecotoxicity:	
Sodium hydroxide	Rabbit, 1 d: 10% Sodium Hydroxide- Category 1; 0.5% Sodium Hydro Slightly irritating to eyes	xide-	Acute hazards to the aquatic e	environment:
Respiratory or Skin Sensitization Product:	• , • ,		Fish Product:	No data available.
Carcinogenicity Product:	No data available.		Aquatic Invertebrates Product:	No data available.
	ation of Carcinogenic Risks to Humans:		Chronic hazards to the aquati	c environment:
No carcinogenic components US. National Toxicology Program	n (NTP) Report on Carcinogens:		Fish Product:	No data available.
No carcinogenic components US. OSHA Specifically Regulated No carcinogenic components	d Substances (29 CFR 1910.1001-1050):		Aquatic Invertebrates Product:	No data available.
Germ Cell Mutagenicity			Toxicity to Aquatic Plants Product:	No data available.
In vitro Product:	No data available.		Persistence and Degradability	
In vivo Product:	No data available.		Biodegradation Product:	No data available.
Reproductive toxicity Product:	No data available.		BOD/COD Ratio Product:	No data available.
Specific Target Organ Toxicity - Product:	Single Exposure No data available.		Bioaccumulative potential Bioconcentration Factor (BC Product:	F) No data available.
Specific Target Organ Toxicity - Product:	Repeated Exposure No data available.		Partition Coefficient n-octanol / v Product:	vater (log Kow) No data available.
Aspiration Hazard Product:	No data available.		Mobility in soil:	No data available.
Other effects:	No data available.		Other adverse effects:	No data available.
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13. Disposal considerations

Disposal instructions:

Dispose of waste at an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal. Contaminated Packaging: No data available.

14. Transport information

TDG:

Not Regulated

CFR / DOT:

Not Regulated

IMDG:

Not Regulated

15. Regulatory information

US Federal Regulations TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D) None present or none present in regulated quantities.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050) None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4): Reportable quantity 1000 lbs.

Chemical Identity Sodium hydroxide

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate (Acute) Health Hazards

SARA 302 Extremely Hazardous Substance None present or none present in regulated quantities.

 
 SARA 304 Emergency Release Notification

 Chemical Identity
 Reportable quar

 Sodium hydroxide
 1000 lbs.

 Phthalocyanine green
 1000 lbs.
 Reportable quantity 1000 lbs. Version: 2.1 Revision Date: 01/17/2017

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SARA 311/312 Hazardous Chemical <u>Chemical Identity</u> <u>Threshold Planning Quantity</u> Sodium hydroxide 10000 lbs

SARA 313 (TRI Reporting) None present or none present in regulated quantities.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130) None present or none present in regulated quantities.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3) None present or none present in regulated quantities

US State Regulations

US. Pennsylvania RTK - Hazardous Substances No ingredient regulated by PA Right-to-Know Law present.

US. Rhode Island RTK No ingredient regulated by RI Right-to-Know Law present.

International regulations

Montreal protocol

not applicable

not applicable

Kyoto protocol not applicable

Regulatory VOC (less water and exempt solvent) : 0 g/l VOC Method 310 : 0.00 %

US. California Proposition 65 No ingredient regulated by CA Prop 65 present.

US. New Jersey Worker and Community Right-to-Know Act No ingredient regulated by NJ Right-to-Know Law present.

US. Massachusetts RTK - Substance List No ingredient regulated by MA Right-to-Know Law present.

not applicable

Stockholm convention

Rotterdam convention

VOC:



Inventory Status: Australia AICS:	One or more components in this product are not listed on or exempt from the Inventory.	Disclaimer:	For Industrial Use Only. Keep out of Reach of Children. The hazard information herein is offered solely for the consideration of the user, subject to their own investigation of compliance with applicable regulations, including the safe use of the product under every foreseeable condition.
Canada DSL Inventory List:	All components in this product are listed on or exempt from the Inventory.		
EINECS, ELINCS or NLP:	One or more components in this product are not listed on or exempt from the Inventory.		
Japan (ENCS) List:	One or more components in this product are not listed on or exempt from the Inventory.		
China Inv. Existing Chemical Substances:	One or more components in this product are not listed on or exempt from the Inventory.		
Korea Existing Chemicals Inv. (KECI):	One or more components in this product are not listed on or exempt from the Inventory.		
Canada NDSL Inventory:	One or more components in this product are not listed on or exempt from the Inventory.		
Philippines PICCS:	One or more components in this product are not listed on or exempt from the Inventory.		
US TSCA Inventory:	All components in this product are listed on or exempt from the Inventory.		
New Zealand Inventory of Chemicals:	One or more components in this product are not listed on or exempt from the Inventory.		
Japan ISHL Listing:	One or more components in this product are not listed on or exempt from the Inventory.		
Japan Pharmacopoeia Listing:	One or more components in this product are not listed on or exempt from the Inventory.		
16.Other information, including date of preparation	on or last revision		

Revision Date:	01/17/2017	
Version #:	2.1	
Further Information:	No data available.	
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Page 1



First-aid measures after ingestion 04/21/2017

Victory Blue Diesel Exhaust Fluid Safety Data Sheet according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations Revision date: 04/21/2017

ECTION 1: Identification of the substance/mixture and of the company/undertaking         1. Product identifier         roduct form       : Mixture         roduct form       : Mixture         roduct form       : Wixture         roduct form       : Wixture         roduct name       : Victory Bike Diesel Exhaust Fluid         2. Relevant identified uses of the substance or mixture and uses advised against         so of the substance/mixture       : Solution for NOx reduction in SCR systems         3. Details of the supplier of the safety data sheet       Mixture         MVdof Industities, LLC       Commercial Ave.         GetSonmercial Ave.       Commercial Ave.         (847) 582-2000       Wixe Advanding com         Wixe Advanding com       : (600) 424-9300; (703) 527 3887 (International)         Characterization       : Characterization         Ideasified       : Eterion of the substance or mixture         HE-V2 Hazards Identification       : Mone         azard statements (CHS-US)       : None         azavalable       : None         E		
roduct ome : Moture : Victory Bue Diesei Exhaus Fluid		
reduct name : Vickny Blue Diesel Exhaust Fluid A Relevant Identified uses of the substance or mixture and uses advised against: so of the substance hinking : Solution for NX reduction in SCR system Solution for NX reduction in SCR system		
2.       Relevant identified uses of the substance or mixture and uses advised against         se of the substance/mixture       : Solution for NOx reduction in SCR systems         3.       Details of the subplice of the safety data sheet         MS Work Industries, LLC       Solution for NOX reduction in SCR systems         Solution Information       Information and the safety data sheet         MS Work Industries, LLC       Solution for NOX reduction in SCR systems         Solution Information and the substance or mixture       Information and the substance or mixture         HS-US classification of the substance or mixture       Information and the substance or mixture         1.       Classification of the substance or mixture         HS-US classification       Information and the substance or mixture         1.       Classification of the substance or mixture         1.3       Classification of the substance or mixture         1.45-US classification       Information and the substance or mixture         1.45-US classification       Information and the substance or mixture         1.45-US classification       Information and the substance or mixture         2.16-US (CHS-US)       Information and the substance         3.0       Other hazards         10 additional information anialable       Information anialable         2.16-US (CHS-US)       Informat		
se of the substance/mixture : Solution for NOx reduction in SCR systems: 3. Details of the supplier of the safety data sheet WW offer Industry E. LCC 086 Commercial Ave. or of the substance or of the solution of the substance or o		
3. Details of the supplier of the safety data sheet         U6 World Industries, LLC         Bio Commercial Ave.         combined Ave.         combined Ave.         combined Ave.         combined Ave.         More Commercial Ave.         A. Emergency number         (800) 424-9300: (703) 527 3887 (International)         Chemistry         Chemistry         Classification of the substance or mixture         HS-US classification         Classification         doctassified         2. Label elements         HS-US labeling         gingal word (GHS-US)         gingal word (GHS-US)         is None         azard statements (GHS-US)         is None         azard statements (GHS-US)         is None         azard statements (GHS-US)         is Automation available         Jointown acute toxicity (GHS US)         is data available         ECTION 32 Composition/information on ingredients         1.       Substances         10 applicable         2. Mixtures         Name       (CAS-No.) 773-16         Wair       (CAS-No.) 57-13-6         irea       (CAS-No.) 57-13-6		
ki Work Industries, LLC Book Commercial Ave Book Commercial Ave Boo		
bid Wold Industries, LLC GeS Commercial Ave GeS Commercial Ave GeS Commercial Ave Best C		
Infhibiols, Li 20062 - USA, (47) 559-200 War dikwolfind com Mergency number : (800) 424-9300; (703) 527 3887 (International) Chemiter EECTION 2: Hazards Identification 1. Classification of the substance or mixture HS-US classification of classified to classified Cassified Cassified Section 2: Sec		
(427, 552-2000 www. debundind.com A. Emergency telephone number Ecertion 2: Hazards identification A. Classification of the substance or mixture HS-US classification tot classified 2. Label elements HS-US classification identified 3. Other hazards acad statements (CHS-US) : None acad statements (CHS-US) : None A. Unknown acute toxicity (CHS US) to data available 4. Unknown acute toxicity (CHS US) to data available ECETION 3: Composition/information on ingredients 1. Substances Telephones Mixtures Name (CAS-No, 1732-18-5 67.5 Not classification Weir (CAS-No, 157.13-6 32.5 Not classification		
4.       Emergency telephone number mergency number              (000) 424-8300; (703) 527 3887 (International) Chemtree:          ECETION 2: Hazards Identification         A classification of the substance or mixture HSU-0 classification tot classified         2.       Label elements HSU-0 Classification tot classified         2.       Label elements HSU-0 Stability         HSU-0 Stability         ganal word (GHS-US)       .         Internation ignal word (GHS-US)       .         Internation ignal word (GHS-US)       .         ganal word (GHS-US)       .         Internation ignal word (GHS-US)       .         azard statements (GHS-US)       .         .       .         .       .         .       .         .       .         .       .         .       .         .       .         .       .         . <td <="" colspan="2" td=""></td>		
mergency number         : 600) 424-900; (703) 527 3887 (International)           Chemitre: Chemitre: Chemitre:           EECTION 2: Hazards Identification           Identification           Classification of the substance or mixture           ISECTION 2: Hazards Identification           ISECTION 2: Classification of the substance or mixture           ISECTION 2: Classification of the substance or mixture           ISECTION 2: Classification           ISECTION 2: Chemitre:           ISECTION 2: Composition/Information on ingredients           ISECTION 3: Composition/Information on ingredients		
Chemittee           Chemittee           ECTION 2: Hazards idontification           HS-US classification of the substance or mixture           HS-US classification           of classification           of classification           Colspan="2">Colspan="2"Colspa="2"Colspan="2"Colspa="2"Colspa=""2"Colspan="2"Colspan="2"Colspan="2"Colspa=""2"Cols		
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1.       Classification of the substance or mixture         HS-US classification       HS-US classification         0 classified       -         2.       Label elements         HS-US balling       -         ginal work (CHS-US)       : None         azard statements (CHS-US)       : None         cecautionary statements (CHS-US)       : None         3.       Other hazards         0 additional information available       -         4.       Unknown acute toxicity (GHS US)         o data available       -         ECTION 3: Composition/Information on ingredients         1.       Substances         EXAMPLE       Substances         2.       Natures         Water       (CAS-No) 773:15-5       67.5       Not classified         water       (CAS-No) 37:13-6       32.5       Not classified		
1.       Classification of the substance or mixture         HS-US classification       HS-US classification         0 classified       -         2.       Label elements         HS-US balling       -         ginal work (CHS-US)       : None         azard statements (CHS-US)       : None         cecautionary statements (CHS-US)       : None         3.       Other hazards         0 additional information available       -         4.       Unknown acute toxicity (GHS US)         o data available       -         ECTION 3: Composition/Information on ingredients         1.       Substances         EXAMPLE       Substances         2.       Natures         Water       (CAS-No) 773:15-5       67.5       Not classified         water       (CAS-No) 37:13-6       32.5       Not classified		
HS-US classification ot classified 2. Labelements HS-US classification 2. Labelements HS-US classification (GHS-US) : None recautionary statements (GHS-US) : None		
tot classified           2. Label elements           145-US labeling ignal word (GHS-US)           ignal word word word word word word word word		
2. Label elements         HS-US backling (INS-VIS)       : None scarad statements (GHS-US)       : None scarad statements (GHS-US)         is additional information divelable       : None         3. Other hazards       : None scalad available         0 additional information available (A. Unknown acute toxicity (GHS-US)       : State scalad available         5. Other hazards       : Substances         0 add available       : Substances         1. Substances       : Substances         2. Mintures       : CAS-No. )773:15-5       67.5       Not classification         water       (CAS-No.)773:15-5       67.5       Not classified         urea       (CAS-No.)57.13-6       32.5       Not classified		
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ignal word (CH-S-US) : None azard statements (CH-S-US) : None 3. Other hazards to additional information available 4. Unknown acute toxicity (CHS-US) to data available ECETION acute toxicity (CHS-US) to data available ECETION Sistemposition/information on ingredients 4. Substances ECETION Sistemposition/information on ingredients 2. Mixtures Name Product identifier % by vt GHS-US classification wither (CAS-No.) 77.3:15-5 67.5 Not classification urea (CAS-No.) 57.13-6 32.5 Not classified		
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recautionary statements (GHS-US) : None		
Solution on ingredients           .1         Subtraces           Solution information on ingredients           .1         Subtraces           Instrume acute toxicity (GHS US)           o data available           EECTION 3: Composition/information on ingredients           .1         Subtraces           for applicable           2.         Mixtures           Name         Product identifier         % by wt           GHS-VIS Classification           wear         (CAS-No.) 773-15-5         67.5           urea         (CAS-No.) 57-13-6         32.5		
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Muknown acute toxicity (GHS US)           data available           ECTION 3: Composition/Information on ingredients           .1. Substances           ot applicable           .2. Mixtures           Name         Product identifier           Vider         (CAS-No.) 57.13-6           02.5         Net classified		
lo data available  SECTION 3: Composition/information on ingredients  4. Substances  ot applicable  2. Mixtures Name  Product identifier  % by wt  GHS-US classification  water  (CAS-No, 172-18-5  67.5  Not classified  urea  (CAS-No, 157-13-6  32.5  Not classified		
Product ldentifier         Name       Product ldentifier         Name       Product ldentifier       % by wt       GHS-US classification         water       (CAS.No.) 7732-18-5       67.5       Not classified         urea       (CAS.No.) 57-13-6       32.5       Not classified		
Name     Product Identifier     % by wt     GHS-US classification       Name     (CAS-No.) 7732-16-5     67.5     Not classified       urea     (CAS-No.) 57-13-6     32.5     Not classified		
Name     Product Identifier     % by wt     GHS-US classification       Name     (CAS-No.) 7732-16-5     67.5     Not classified       urea     (CAS-No.) 57-13-6     32.5     Not classified		
Product identifier         % by wt         GHS-US classification           water         (CAS-No.) 7732-18-5         67.5         Not classified           urea         (CAS-No.) 57-13-6         32.5         Not classified		
Product identifier         % by wt         GHS-US classification           water         (CAS-No.) 7732-18-5         67.5         Not classified           urea         (CAS-No.) 57-13-6         32.5         Not classified		
water         (CAS-No.) 7732-18-5         67.5         Not classified           urea         (CAS-No.) 57-13-6         32.5         Not classified		
water         (CAS No.) 7732-19-5         67.5         Not classified           urea         (CAS-No.) 57-13-6         32.5         Not classified		
ull text of hazard classes and H-statements : see section 16		
ECTION 4: First aid measures		
.1. Description of first aid measures		
irst-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).		
irst-aid measures after inhalation : Assure fresh air breathing. Allow the victim to rest.		
irst-aid measures after skin contact : Remove affected clothing and wash all exposed skin area with mild soap and water, followed		
by warm water rinse.		

EN (English)

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# Victory Blue Diesel Exhaust Fluid Safety Data Sheet

s and effects, both acute and delayed
: Not expected to present a significant hazard under anticipated conditions of normal use.
te medical attention and special treatment needed
asures
: Foam. Dry powder. Carbon dioxide. Sand.
: Do not use a heavy water stream.
om the substance or mixture
nent and precautions for fire-fighters
: Use water spray or fog for cooling exposed containers. Exercise caution when fighting any
chemical fire. Prevent fire fighting water from entering the environment.
: Do not enter fire area without proper protective equipment, including respiratory protection.
ase measures
tective equipment and emergency procedures
: The EPA has no established reportable quantity for spills for this material, secondary containment is not specified.
nnel
: Evacuate unnecessary personnel.
18
: Equip cleanup crew with proper protection.
· Ventilate area
15
aters. Notify authorities if liquid enters sewers or public waters.
containment and cleaning up
Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials. For minor spillages wash down with excess of water. Mop up small spills.
ns
d personal protection.
lorage
ling
: Wash hands and other exposed areas with mild scap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor.
ge, including any incompatibilities
: Keep only in the original container in a cool, well ventilated place away from : Direct sunlight, Heat sources. Keep container closed when not in use.
: Strong bases. Strong acids.
: Sources of ignition. Direct sunlight.
ols/bersonal protection
ols/personal protection
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## Victory Blue Diesel Exhaust Fluid

Safety Data Sheet according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations 8.3. Individual protection measures/Personal protective equipment

Personal protective equipment: Avoid all unnecessary exposure. Gloves. Protective goggles. Hand protection: Wear protective gloves Eye protection: Chemical goggles or safety glasses Respiratory protection:



Do not eat, drink or smoke during use.

9.1. Information on basic physical an	d chemical properties	
Physical state	: Liquid	
Color	Colorless	
Odor	: characteristic ammonia odor	
Odor threshold	: No data available	
pH	: 9 - 10	
Relative evaporation rate (butylacetate=1)	: <1	
Freezing point	: -11 °C (12 °F)	
Boiling point	: > 100 °C (212 °F)	
Flash point	: No data available	
Auto-ignition temperature	: No data available	
Decomposition temperature	: No data available	
Flammability (solid, gas)	: No data available	
Vapor pressure	: Not Applicable	
Relative vapor density at 20 °C	: 0.6 H2O, >1	
Specific Gravity	: 1.09	
Solubility	: Soluble in water. Water: 100 %	
Log Pow	: No data available	
Log Kow	: No data available	
Viscosity, kinematic	: No data available	
Viscosity, dynamic	: No data available	
Explosive properties	: No data available	
Oxidizing properties	: No data available	
Explosive limits	: No data available	
9.2. Other information		
No additional information available		
SECTION 10: Stability and reactiv	ity	
10.1. Reactivity		
No additional information available		

## Vietery Plue Discal Exhaust Fluid

10.2. Chemical stability	
Stable under normal conditions.	
10.3. Possibility of hazardous reactions	
Not established.	
10.4. Conditions to avoid	
No additional information available	
10.5. Incompatible materials	
Strong acids. Strong bases. oxidizing agents (pe	roxides, chromates, dichromates).
10.6. Hazardous decomposition products	
Carbon monoxide. Carbon dioxide. Fume.	
SECTION 11: Toxicological informat	ion
11.1. Information on toxicological effects	
Acute toxicity	: Not classified
urea (57-13-6)	
LD50 oral rat	8,471.00 mg/kg (Rat; OECD 401: Acute Oral Toxicity; Literature study; 14300 mg/kg
	bodyweight; Rat; Experimental value)
LD50 dermal rat LD50 dermal rabbit	> 3,200.00 mg/kg (Rat; Literature study) > 21,000.00 mg/kg (Rabbit; Literature study)
ATE US (oral)	8,471.00 mg/kg bodyweight
Skin corrosion/irritation	: Not classified
Skin contraiton mitation	pH: 9 - 10
Serious eye damage/irritation	: Not classified
	pH: 9 - 10
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
Specific target organ toxicity (single exposure)	: Not classified
Specific target organ toxicity (repeated exposure)	: Not classified
Aspiration hazard	: Not classified
Potential adverse human health effects and	: Based on available data, the classification criteria are not met.
symptoms	
SECTION 12: Ecological information	
12.1. Toxicity	
urea (57-13-6)	
LC50 fish 1	> 6,810.00 mg/l (LC50; 96 h; Leuciscus idus; Static system)
EC50 Daphnia 1	> 10,000.00 mg/l (EC50; 48 h; Daphnia magna)
Threshold limit algae 1	> 10000 mg/l (EC0; 168 h; Scenedesmus quadricauda; Static system; Fresh water)
12.2. Persistence and degradability	
urea (57-13-6)	
Persistence and degradability	Inherently biodegradable. Hydrolysis in water. Highly mobile in soil.
ThOD	0.27 g O <sub>2</sub> /g substance

## Victory Blue Diesel Exhaust Fluid

urea (57-13-6)	
BCF fish 1	1.00 (BCF; 72 h; Brachydanio rerio)
BCF other aquatic organisms 1	11,700.00 (BCF)
Log Pow	< -1.73 (Experimental value; EU Method A.8: Partition Coefficient)
Bioaccumulative potential	Bioaccumulation: not applicable.
2.4. Mobility in soil	
urea (57-13-6)	
Mobility in soil	Not applicable
Log Koc	Koc,0.037-0.064; Experimental value
2.5. Other adverse effects	
Effect on ozone layer	: No additional information available
ffect on global warming	: No known effects from this product.
nect on global warning	No additional information available
	No additional information available
Other information	: Avoid release to the environment.
SECTION 13: Disposal consideration	IS
3.1. Waste treatment methods	
Product/Packaging disposal recommendations	: As a non-hazardous liquid waste, it should be solidified with stabilizing agents such as sand ash, or clay absorbent, so that no free liquid remains before disposal to an industrial waste landfill.
cology - waste materials	: Avoid release to the environment.
ECTION 14: Transport information	
Fransportation of Dangerous Goods Refer to current TDG Canada for further Cana	dian regulations
Refer to current TDG Canada for further Cana	dian regulations
Refer to current TDG Canada for further Cana NDR kot regulated	dian regulations
	dian regulations
Refer to current TDG Canada for further Cana LDR lot regulated rransport by sea lot regulated	dian regulations
Refer to current TDG Canada for further Cana LDR lot regulated 'ransport by sea iot regulated Ur transport	dian regulations
Refer to current TDG Canada for further Cana LDR Ico regulated irransport by sea Icot regulated I/r transport Icot regulated	
Refer to current TDG Canada for further Cana LDR lot regulated irransport by sea lot regulated kir transport lot regulated SECTION 15: Regulatory information	
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terefor to current TDG Canada for further Canado DR iot regulated ransport by sea iot regulated in transport iot regulated SECTION 15: Regulatory information SECTION 15: Regulatory information FeA TSCA Regulatory Fing CERCLA RQ SARA Section 302 Threshold Planning Quantit	Toxic Substances Control Act (TSCA): The intentional ingredients of this product are listed None. This material is not classified as hazardous under U.S. EPA regulations. No extremely hazardous substances are in this product.
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Refer to current TDG Canada for further Cana ADR Not regulated Transport by sea Not regulated Not regulated Start transport Not regulated SECTION 15: Regulatory Information STAT Start Regulatory Dissel Exhaust Fluid EPA TSCA Regulatory Flag CERCLA RQ SARA Section 302 Threshold Planning Quantit SARA Section 302 Threshold	Toxic Substances Control Act (TSCA): The intentional ingredients of this product are listed           None. This material is not classified as hazardous under U.S. EPA regulations.           (TPQ)         No externey hazardous substances are in this product.           Urea. No hazards resulting from the material as suppled.           Toxic Substances Control Act (TSCA): The intentional ingredients of this product are listed

# Victory Blue Diesel Exhaust Fluid Safety Data Sheet according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

12.3. Bioaccumulative potential

04/21/2017

15.2. International regulations	
CANADA	
Victory Blue Diesel Exhaust Fluid	
WHMIS Classification	This SDS has been prepared according to the criteria of the Hazardous Products Regulations (HPR) (WHMIS 2015) and the SDS contains all of the information required by the HPR. Applicable GHS information is listed in section 2.2 of this SDS.
EU-Regulations No additional information available National regulations	
Victory Blue Diesel Exhaust Fluid	
DSL (Canada): The intentional ingredients of	f this product are listed
urea (57-13-6)	
DSL (Canada): The intentional ingredients of	( this product are listed

EN (English)

DSL (Canada): The intentional ingredients of this product are listed EINECS (Europe): The intentional ingredients of this product are listed

15.3. US State regulations

California Proposition 65 - This product does not contain any substance(s) known to the state of California to cause cancer, developmental toxicity and/or reproductive toxicity

SECTION 16: Other information	
Revision date	: 04/21/2017
NFPA health hazard	: 1 - Materials that, under emergency conditions, can cause significant initiation.
NFPA fire hazard	: 0 - Materials that will not burn under typical dire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand.
NFPA reactivity	: 0 - Material that in themselves are normally stable, even under fire conditions.
Hazard Rating	
Health	: 1 Slight Hazard - Irritation or minor reversible injury possible
Flammability	: 0 Minimal Hazard - Materials that will not burn
Physical	: 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.
Personal protection	B - Safety glasses, Gloves
SDS GHS US (GHS HazCom 2012) OWI	
safety, toxicity and suitability of his own use, handling a LLC as to the effects of such use, the results to be obta	Islation or guaranties as to the accuracy, sufficiency or completeness of the material and forth herein. It is the same's responsibility to determine the of decrease of the product. Since actual use by others is alseyed our controls, no average, expressed or implicate in ande by Odd Model Instattres, need or the safety and toxicity of this product, nor does Odd World Industres, LLC assume lability arraining out of the use by others of this product the specific material decignation therm and the can reliate to use in combination with any otherm and the output of the product the specific material decignation therm and decise not instatto use in combination with any otherm attempt or any process.

04/21/2017

4/6



## SAFETY DATA SHEET

RESPONSIBLE CARE

SDS ID NO.: Revision Date:	0291MAR019 05/14/2015			
	1. IDENTIFICATION			
Product Name:	Marathon Petroleum No. 2 Ultra Low Sulfur Diesel Dyed 15 ppm Sulfur Max			
Synonym: Chemical Family:	Ultra Low Sulfur Diesei No. 2 Dyed 15 ppm Sulfur Max; Ultra Low Sulfur Diesei No. 2 Dyed 15 ppm Sulfur Max with Polar Plus; No. 2 Diesel, Tax Exempt-Motor Vehicle Use, Dyed; No. 2 Diesel, Tax Exempt-Motor Vehicle Use, Dyed, with Polar Plus; USD No. 2 Diesel Dyed 15 ppm Sulfur Max; ULSD No. 2 Diesel Dyed 15 ppm Sulfur Max, with Polar Plus; No 2 MV1 5 Diesel Dyed; No. 2 MV 15 Diesel Dyed, with Polar Plus; No. 2 NRLM 15 Diesel Dyed; No. 2 NRLM Diesel Dyed Complex Hydrocathon Substance			
Recommended Use: Use Restrictions:	Fuel. All others.			
Supplier Name and Address: MARATHON PETROLI 539 South Main Street Findlay, OH 45840				
SDS information:	1-419-421-3070			
Emergency Telephone:	1-877-627-5463			
In the Contraction of the	2. HAZARD IDENTIFICATION			
Classification				
OSHA Regulatory Status This chemical is considered haz	ardous according to the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)			
Flammable liquids	Category 3			

Acute toxicity - Inhalation (Dusts/Mists)	Category 4	
Skin corrosion/irritation	Category 2	
Carcinogenicity	Category 2	
Specific target organ toxicity (single exposure)	Category 3	
Specific target organ toxicity (repeated exposure)	Category 2	
Aspiration toxicity	Category 1	
Acute aquatic toxicity	Category 2	
Chronic aquatic toxicity	Category 2	

## Hazards Not Otherwise Classified (HNOC) Static accumulating flammable liquid

Label elements

SDS ID NO .: 0291MAR019	Product name: Marathon Petroleum No. 2 Ultra Low Sulfur Diesel Dyed 15 pom Sulfur Max	Page 1 of 13

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0291MAR019 Marathon Petroleum No. 2 Ultra Low
Sulfur Diesel Dyed 15 ppm Sulfur Max
                                                                                                                                                                                                         Revision Date: 05/14/2015
                                    3. COMPOSITION/INFORMATION ON INGREDIENTS
   No. 2 Ultra Low Sulfur Diesel is a complex mixture of paraffins, cycloparaffins, olefins and aromatic hydrocarbon chain lengths 
predominantly in the range of nine to sixteen carbons. May contain small amounts of red dye and additives (<0.15%) which are not 
considered hazardous at the concentrations used.
  Composition Information:
    Name
No. 2 Dissel Fuel
Kracisine, Petroleum
Fuels, Desesl, C9-16-Alkane Branched and Lineer
Alkanes, C10-220 branched and lineer
Naphinalene
                                                                                                                                  CAS Numb
                                                                                                                                                                                                                       Weight <sup>4</sup>
                                                                                        4. FIRST AID MEASURES
 First Ald Measures
  General advice
                                                                                In case of accident or if you feel unwell, seek medical advice immediately (show directions 
for use or safety data sheet if possible).
                                                                               Remove to fresh air. If not breathing, institute rescue breathing. If breathing is difficult,
ensure airway is clear, give oxygen and continue to monitor. If heart has stopped,
immediately begin cardiopulmonary resuscitation (CPR). Keep affected person warm and at
rest. GET IMMEDIATE MEDICAL ATTENTION.
  Inhalation:
                                                                               Immediately wash exposed skin with plenty of scep and water while removing contaminated 
clothing and shoes. May be absorbed through the skin in harmful amounts. Get medical 
attention if intration presists. Any injection injury from high pressure equipment should be 
evaluated immediately by a physician as potentially serious (See NOTES TO PHYSICIAN).
 Skin Contact:
                                                                               Place contaminated clothing in closed container until cleaned or discarded. If clothing is to 
be laundered, inform the person performing the operation of contaminant's hazardous 
properties. Destroy contaminated, non-chemical resistant footwear.
                                                                               Flush immediately with large amounts of watar for at least 15 minutes. Eyelids should be 
held away from the eyeball to ensure thorough rinsing. Gently remove contacts while 
flushing. GET IMMEDIATE MEDICAL ATTENTION.
 Eye Contact:
                                                                             Do not induce vomiting because of danger of aspirating liquid into lungs, causing serious 
damage and chemical pneumonitis. If spontaneous vomiting occurs, keep head below hips, 
of if patient is driving down, turn body and head to side to prevent aspiration and monitor for 
breathing difficulty. Never give anything by mouth to an unconscious person. Keep affected 
person warm and a trest. GET MMAEONATE NEVICOLAL ATTENTION.
 Ingestion:
Most important signs and symptoms, both short-term and delayed with overexposure
 Adverse Effects:
                                                                             Acute: Headache, drowsiness, dizziness, loss of coordination, disorientation and fatigue.
Delayed: Dry skin and possible irritation with repeated or prolonged exposure.
Indication of any immediate medical attention and special treatment needed
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# 0291MAR019 Marathon Petroleum No. 2 Ultra Low Sulfur Diesel Dyed 15 ppm Sulfur Max

Revision Date: 05/14/2015

	EMERGENCY OVERVIEW	
FLAMMABLE LIQUID AND VAPO	R	
May accumulate electrostatic chan May be fatal if swallowed and enter	ge and ignite or explode rs airways	
Causes skin irritation		
Suspected of causing cancer May cause drowsiness or dizziness	L	
May cause damage to organs (thyr Toxic to aquatic life with long lastin	mus, liver, bone marrow) through prolonged or repeated avacours	
	A A	
$\langle 0 \times 1 \rangle$	× 4 × 4	
V V		
v v	V V	
Appearance Red Liquid	Physical State Liquid	0
Precautionary Statements - Preve	ention	Odor Hyp
Obtain special instructions before us Do not handle until all safety precau	50 Jions have been read and understand	
Keep away from heat/sparks/open f Keep container tightly closed	lames/hot surfaces No smoking	
Ground/bond container and receivin Use only non-sparking tools		
Use explosion-proof electrical/ventil Take precautionary measures again	ating/lighting/equipment	
Do not breathe mist/vapors/spray Use only outdoors or in a well-ventils		
Wear protective gloves/protective cli Wash hands and any possibly expositely exposed	othing laws protocling Reserves at	
Avoid release to the environment	see skin horougnly after handling	
Precautionary Statements - Respo		
F exposed or concerned: Get medic F ON SKIN (or hair): Take off immed	diately all contaminated elething. Place eli-	
Nash contaminated clothing before	Sources	
F INHALED: Remove victim to fresh Call a POISON CENTER or doctor if	air and keep at rest in a position comfortable for breathing	
P SWALLOWED: Immediately call a 00 NOT induce vomiting	POISON CENTER or doctor	
n case of fire: Use water spray, fog o Collect spillage	or regular foam for extinction	
Precautionary Statements - Storag	10	
Store in a well-ventilated place. Keep Geep cool	container tightly closed	
Store looked up		
Precautionary Statements - Dispose Dispose of contents/container at an a	al	
	oprovod waate diaposal plant	
ppm i	uet name: Marathon Petroleum No. 2 Ultra Low Suffur Diesel Dyed 15 Suffur Max	Page
0291MAR019 Marathon Petr Sulfur Diesel Dyed 15 ppm S	Dleum No. 2 Ultra Low po	
0291MAR019 Marathon Petr	pleum No. 2 Ultra Low Re SKIN- Leate pr ancidente investige bisk susses of	ovision Date: (
0291MAR019 Marathon Petr Sulfur Diesel Dyed 15 ppm S	pleum No. 2 Ultra Low Re ulfur Max SKIN: Leate or accidents involving high-pressure equipment m brough the skin and initially produce an injury that may not app puncture wound man unitial	avision Date: ( ay inject a stream war serious. Only
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O291MAR019 Marathon Petrs Sulfur Diesel Dyed 15 ppm S NOTES TO PHYSICIAN: Suitable extinguishing media For small fires, Class B fire exting- ingo fires, waiter sprav, fog of foar trained and equipped with proper pu- trained and equipped with proper putra bare trained and equipped with putra bare trained water streams of the forth Anterican Emergency Hazardous combustion products Special protective equipment and preference and from as Aviat un avoid forthing	Pleum No. 2 Ultra Low Ultra Max  Pleum No. 2 Ultra Low Ultra Max  SKNL Leaks or accidents involving high-pressure equiprotent m prouch may appear on the skin and infailed produce an injury that may not ake involve the skin and infailed produce an injury that may not appear on the skin and infailed produce an injury that may not appear on the result of the prevent invervential loss of function part. High pressure injection injuries may be SERIOUS SURGIC INSETION: This material represents a significant aspirate ar mazare. Induction of emesis is not recommended.  5. FIRE-FIGHTING MEASURES  withing media such as CO2, dry chemical, foam (AFFF/ATC) or water n (AFFF/ATC) can be used. Firefighting should be attempted only by notective equipment.  to avoid spreading fire.  e chemical to be an immable liquid per the OSHA Hazard Communication Stam contain of incomplete combustion.  art No.  re y products of incomplete combustion.  art No.  Procentions of firefightors  we defining and positive-pressure self-contained breathing apparatus to a  may attagin twent atteram. Water spray application, Keep sur word three signation of comsisties they are along (AFFF/ATC) or water offici. Flashback can occur along vapor trail. For additional fire related resources a contar pilletions, particle torotons, state discharge, or  are to be a fillom application. Keep sur word supports of the opsitive pressure self-contained breathing apparatus may attagin twent atternes. Water spray application. Keep sur word three signation of combustion  Flammability 2  Instability 1  ACCCIDENTAL RELEASE MEASURES  Keep public away, Isolate and encouste area. Shut off source of a  fignifien sources. All contaminated surfaces will be slippore.	avision Date: 0 ay inject a stream ear serious, Only oper treatment as surgical debriden surgical debriden and/or the affect SAL EMERGENC and chemical pneu r spray can be use those who are ad dard and should b ound or be moved those who are ad dard and should b ound or be moved the applied careful rounding area coo d information, see s (SCBA) with a ful be applied careful rounding area coo f sewers and wat Special Hazards
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O291MAR019 Marathon Petr Sulfur Diesel Dyed 15 ppm S NOTES TO PHYSICIAN: Sultable extinguishing media For small fires, Class B fire extinguing fires, water spray, fog of foar trained and equipped with proper to image fires, water spray, fog of foar trained and equipped with proper to trained and equipped with proper to specific hazards arising from the proper trained spectra and the specific hazards arising from the sources data Sensitivity to Mechanical Imp Sensitivity to Mechanical Imp Sensitivity to Static Dischargs Special protective equipment and Firefolders should wear full protect sources. NFPA: Health 1 G. Porsonal Precautions:	Plearm No. 2 Ultra Low Selfer Max  Plearm No. 2 Ul	avision Date: 0 ay inject a stream sear serious. Only surgical debriden and/or the affect and/or the affect surgical debriden and/or the affect AL EMERGENC and chemical pneue those who are ad those who are ad dard and should b dard and should b dard and should b dard and should b those who are ad dard and should b adard and should b those who are ad other ignition sour d information, see a (SCBA) with a fut be applied carefuc rounding a sewers and wat Special Hazards afe to do so, Elimi

SDS ID NO .: 0291MAR019

# 0291MAR019 Marathon Petroleum No. 2 Ultra Low

Aethods and materials for cleaning	g Use suitable absorbent ma	iterials such as vermiculite, sand, or clay	av to clean up residual	100	No. 2 Diesel Fuel	100 mg/m <sup>3</sup> TWA		-	
ib:	liquids. Recover and return	n free product to proper containers. Whe bunded and bonded. Use only non-spari	on monutaring free liquids		68476-34-6	Skin - potential significant contribution to overall exposure by the cutaneous route			
	7. HANDLING A			K	erosine, Petroleum 8008-20-6	200 mg/m <sup>2</sup> TWA Skin - potential significant		-	+
Safe Handling Precautions:	practices. Static accumulatin	ODUCT BY MOUTH. Use appropriate g ing flammable liquid. Bonding and grout	unding may be insufficient			contribution to overall exposure by the cutaneous route			
	to eliminate the hazard from oxidizers or other sources or	m static electricity. Do not expose to hea of ignition. No smoking. Avoid repeated	sat, open flames, strong	Fuels, Br	, Diesel, C9-18-Alkane ranched and Linear				
	non-sparking tools. Do not o	ection measures as recommended in Se cut, drill, grind or weld on empty contain r to applicable EPA, OSHA, NFPA and	iners since explosive	Alkan	1159170-26-9 es, C10-C20 branched and linear				
	requirements.				and linear 928771-01-1 Naphthalene				
	charged during mixing, filteri	r non-conductors of electricity and can b ring, pumping at high flow rates or loadi	ling and transfer		Naphthalene 91-20-3	10 ppm TWA Skin - potential significant contribution to overal!	TWA: 10 ppm TWA: 50 mg/m <sup>3</sup>	10 ppm TWA 50 mg/m³ TWA 15 nom STEI	250 ppm
	the vapors of flammable liqu	eaches a sufficiently high level, sparks o uids. Sudden release of hot organic ch	can form that may ignite htmical vances or mists	Notes:		exposure by the cutaneous route		15 ppm STEL 75 mg/m <sup>3</sup> STEL	
	from process equipment ope ingress of air into vacuum ex	perating under elevated temperature and equipment may result in ignition of vapor n sources. Nozzle spouts must be kept	td pressure, or sudden	The same,				provide exposure limits a, even though certain of	s contained in OSHA's f those exposure limits
	containers or tank during the	e entire filling operation.		Enginee	ering measures:	Local or general exha	aust required in an one	fread area or with load	
	Containers should be placed	never be filled while in or on a motor ve d on the ground. Static electric discharg	ma can lanite fuel unnore				aust required in an end in equipment that is ex	losed area of wan make plosion-proof.	equate ventilation. Use
	when filling non-grounded co	containers or vehicles on trailers. The no r before and during the entire filling ope	1077le shout must be kent	Persona Eye prot	al protective equipment tection:			1000 - 1000 - 2010 - 2010	
	A buildup of static electricity	v can occur upon re-entry into a vehicle	t duting fueling especially		tection: d body protection:	Wear neonreos, nitrik	shield if the potential fo		
	in cold or dry climate condition (i.e., clothing and upholstery	tions. The charge is generated by the ar y) rubbing across each other as a perso	action of dissimilar fabrics			workplace conditions glove selection and b		ivent skin contact. Glove ne glove manufacturer fo	suitability is based on specific advice on
	vehicle. A flash fire can resu	built from this discharge if sufficient flamm get back in your vehicle while refueling.	mable vapors are	Respirat	tory protection:	Use an anorowed over	anis vonos chemieri er	547	
	Cellular phones and other eli	electronic devices may have the potentia	ial to emit electrical			generated Obsarue r	exceed permissible es	cosure limits or excess	ive vapors are
	such as das stations) could o	n potentially explosive atmospheres (inc cause an explosion if sufficient flammal phones and other electronic devices whe	able vanors are present			fighting.	ton, our-contained bri	eaming apparatus shoul	Id be used for fire
	explosive atmospheres or ke	eep devices inside your vehicle during r	refueling.	Hygiene	measures:	Handle in accordance skin, eyes and clothing	with good industrial h	ygiene and safety practi	ice. Avoid contact with
	even though the small entran	ny material through the skin is a serious ance wound at the injection site may not	t initially appear serious	22042	9. F	PHYSICAL AND C	9		and strength light of the
	grease or guns, fuel injectors	occur from high-pressure equipment su rs, or pinhole leaks in hoses or hydraulic	uch as paint spray or ic lines and should all be	Informati	ion on basic physical a	nd chemical properties	JACINICACI.	OPERHES	
	considered serious. High pre EMERGENCIES (See First A	ressure injection injuries may be SERIO Aid Section 4).	OUS SURGICAL	Appearan	atate	Red Liquid			
	well-ventilated area. Keep av	tainers that are appropriately labeled ar way from heat and sources of ignition. I	ind in a cool, Do not nuncture or	Color Odor Odor Thre		Red Hydrocarbon			
	incinerate container.	/ll)	Do not partours of	Property		No available data, Values (Method)			
	Strong oxidizing agents.			Melting Po Initial Boi	oint / Freezing Point iling Point / Boiling Ran	No available data. 199 182-288 °C / 360-551			
8. EXPUSI	JRE CONTROLS/P	PERSONAL PROTECTIC	N	Flash Poi Evaporati	int	49-88 °C / 120-190 ° No available data.	3 'P *F		
SDB ID NO.: 0291MAR019 Produc ppm St	uct name: Marathon Petroleum Nr Suffar Max	No. 2 Ultra Low Sulfur Diesal Dyed 15	Page 6 of 13	SDS ID NO.	LT 0291MAR019 Pr PP	oduet näme: Marathon Petrok m Sulfur Max	leum No. 2 Ultra Low Su	fur Diesel Dyed 15	Page 6 of 13
	um No. 2 Ultra Low		Page 5 of 13	0291M	MAR019 Marathon Pe	troleum No. 2 IIItra I ou			
ppm Si 0291MAR019 Marathon Petroleu Sulfur Diesel Dyed 15 ppm Sulfu	um No. 2 Ultra Low fur Max			0291M Sulfur	MAR019 Marathon Pe Diesel Dyed 15 ppm	troleum No, 2 Ultra Low Sulfur Max			Page 5 of 13
ppm Si 0291MAR019 Marathon Petrolet	um No. 2 Ultra Low fur Max 5.0 0.7			0291M Sulfur	MAR019 Marathon Pet r Diesel Dyed 15 ppm Diesel, 09-18-Alkane Brand Lines	troleum No, 2 Ultra Low Sulfur Max			
ppm Si 0291MAR019 Marathon Petrolet Sulfur Diesel Dyed 15 ppm Sulfu Upper Flammability Limit: Lower Flammability Limit: Vapor Density Specific Gravity / Relative Density	um No. 2 Ultra Low fur Max 5.0 0.7 1-10 mm Hg @ 20°C 4.5 C.A. 0.8			0291M Sulfur Fuels, C	MAR019 Marathon Pet Diesel Dyed 15 ppm Diesel, C9-18-Altane Stand Listo 170-28-9 r. 116-170-28-9	troleum No, 2 Uitra Low Sulfur Max			ision Date: 05/14/2015 >1-≪5 mg/l (Rat) 4 h
ppm Si 0291MAR019 Marathon Petrolec Sulfur Diesel Dyed 15 ppm Sulfu Upper Flammability Limit: Lower Flammability Limit: Vapor Pessure Vapor Density Specific Gravity / Relative Density Water Solubility Solubility in Oher solvents	um No. 2 Ultra Low fur Max 5.0 0.7 1-10 rmm Hg @ 20°C 4.5 C.A. 0.8 No avaitable data. Negligible data.			0291M Sulfur Fuels, C	MAR019 Marathon Per Diesel Dyed 15 ppm Diesel, 09-18-Alkane Brand Linear 1159170-28-9	troleum No, 2 Uitra Low Sulfur Max	v 		ision Date: 05/14/2015
0291MAR019 Marathon Petrolet Sulfur Diesel Dyed 15 ppm Sulf Upper Flammability Limit: Vapor Pressure Vapor Density Specific Gravity / Relative Density Water Solubility	um No. 2 Ultra Low fur Max 5.0 0.7 1-10 mm Hg @ 20°C 4.5 C.A. 0.8 No available data. No available data. No available data.			0291M Sulfur Fuele, C Alkam	MAR019 Marathon Pet Diesel Dyed 15 ppm Linear 1150170-25-9 es, C10-C20 branched and 92271-01-1 Naphthalene 91-20-3	troleum No. 2 Ultra Low Sulfur Max hed and linear 480 mg/kg (R	v tat) > 2000	Revi	ision Date: 05/14/2015 >1 - <5 mg/l (Rat) 4 h >1 - <5 mg/l (Rat) 4 h
0291MAR019 Marathon Petrolec Suffur Diesel Dyed 15 ppm Suff Upper Flamability Limit: Upper Flamability Limit: Vapor Density Specific Gravity / Relative Density Water Solubility Solubility in other solvents Partition Coefficient	um No. 2 Ultra Low fur Max 5.0 0.7 1-10 mm Hg @ 20°C 4.5 C.A. 0.8 No available data. No available data. No available data. No available data. No available data. No available data. No available data.			0291M Sulfur Fuele, C Alkam	MAR019 Marathon Pet Diesel Dyed 15 ppm Linear 1150170-25-9 es, C10-C20 branched and 92271-01-1 Naphthalene 91-20-3	troleum No, 2 Uitra Low Sulfur Max Ilinear 400 mg/kg (R 5.as well as chronic offect	v Iary > 2000	Revi	Ision Date: 05/14/2015 >1-<5 mg/l (Rat) 4 h >1-<5 mg/l (Rat) 4 h > 340 mg/m² (Rat) 1 h
2291MAR019 Marathon Petrolet Sulfur Diesel Dyed 15 ppm Sulfu Upper Flammability Limit: Lower Flammability Limit: Vapor Pressure Vapor Boubility Solubility in other solvents Solubility in solvents Solubility in Solubility Paramic Viscosity Explosive Properties	sum No. 2 Ultra Low fur Max 5.0 0.7 1-10 mm Hg @ 20°C 4-5 0 A volable data. No available data.			0291M Sulfur Fuele, C Alkam	MAR019 Marathon Pet Diesel Dyed 15 ppm Linear 1150170-25-9 es, C10-C20 branched and 92271-01-1 Naphthalene 91-20-3	troleum No, 2 Uitra Low Sulfur Max Ilinear 490 mg/kg (R 5.85 well as chronic effect Altered mental state (so-called Petrol Sin been reported from	v tat) > 2000 ts from short and Ion , drowiness, peripher	Revi	Ision Date: 05/14/2015 >1-<5 mg/l (Rat) 4 h >1-<5 mg/l (Rat) 4 h > 340 mg/m² (Rat) 1 h
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2291MAR019 Marathon Petroleu Sulfur Diesel Dyed 15 ppm Sulf Upper Flammability Limit: Lower Flammability Limit: Lower Flammability Limit: Appor Pressure Solubility in other solvents Partition Coefficient Decomposition temperature ph: Autoignition Temperature Kinematic Viscosity Explosive Properties Softening Point	um No. 2 Ultra Low fur Max 5.0 0.7 1-10 mm Hg @ 20°C 4.5 C.A.0.8 No available data. No available data.			0291M Sulfur Fuele, C Alkam	MAR019 Marathon Pet Diesel Dyed 15 ppm Linear 1150170-25-9 es, C10-C20 branched and 92271-01-1 Naphthalene 91-20-3	troleum No. 2 Ultra Low Sulfur Max Inea 490 mg/kg (R Altered mental state (so-called Petrol Sn) been reported from - gasoline, MIDDLE DISTILLAT	v tat) > 2000 ts from short and Ion , drowsiness, peripher firs' Encephalopathy repeated overexposure to the period of the period of the period to the period of the period of the period to the period of the period of the period to the period of the period of the period of the period to the period of the period of the period of the period to the period of the period o	Revi Img/kg (Rabbit) Ing/kg (R	ision Date: 05/14/2015 >1 - <5 mgl (Rat) 4 h >1 - <5 mgl (Rat) 4 h > 340 mgim <sup>2</sup> (Rat) 1 h oversible brain damage d sudden death have solvents, naphthae, and me) skin exposure to
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Not expected to be a skin sensitizer. Not expected to be a respiratory sensitizer.

Mutagenic effects None known Carcinogenicity Cancer designations are listed in the table below.
ACGIH IARC NTP

		(Class)	(Class)		
No. 2 Diesel Fuel 68476-34-6		imed animal inogen (A3)	Not Classifiable (3)	Not Listed	Not Listed
Kerosine, Petroleum 8008-20-6	Confirmed animal carcinogen (A3)		Not Classifiable (3)	Not Listed	Not Listed
Fuels, Diesel, C9-18-Alkane Branched and Linear 1159170-26-9	Not Listed		Not Listed	Not Listed	Not Listed
Alkanes, C10-C20 branched and linear 928771-01-1	N	ot Listed	Not Listed	Not Listed	Not Listed
Naphthalene 91-20-3		rmed animal inogen (A3)	Possible human carcinogen (28)	Reasonably anticipated to be a human carcinogen	Not Listed
Reproductive toxicity		None know	n.		
Specific Target Organ Tox (STOT) - single exposure	icity	Central ner	vous system.		
Specific Target Organ Tox STOT) - repeated exposur		Thymus, Li	ver. Bone marrow.		
Aspiration hazard		May be fat	I if swallowed or vomited an	d enters airways	

12. ECOLOGICAL INFORMATION

Ecotoxicity

Sensitization

This product should be considered toxic to aquatic organisms, with the potential to cause long lasting adverse effects in the aquatic environment. Algae/aquatic plants Fish Toxicity to

	Higheradeane planta	FISH	Microorganisms	Crustacea
No. 2 Diesel Fuel 68476-34-6	-	98-hr LC50 = 35 mg/l Fathead minnow (flow-through)		48-hr EL50 = 6,4 mg/l Daphnia magna
Kerosine, Petroleum 8008-20-6	72-hr EL50 = 5.0-11 mg/i Algae	96-hr LL50 = 18-25 mg/l Fish		48-hr EL50 = 1.4-21 mg/l Invertebrates
Fuels, Diesel, C9-18-Alkane Branched and Linear 1159170-26-9				
Alkanes, C10-C20 branched and linear 928771-01-1	÷	•		-
Naphthalene 91-20-3		96-hr LC50 = 0.91-2.82 mg/l Rainbow trout (static) 96-hr LC50 = 1.99 mg/l Fathead minnow (static)	•	48-hr LC50 = 1.6 mg/l Daphnia magna
Persistence and degrada	bility Expected to	be inherently biodegradable.		
Bioaccummulation	Has the pote	ential to bioaccumulate.		
Mobility in soil	May partition	into air, soil and water.		

No information available Other adverse effects

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# 0291MAR019 Marathon Petroleum No. 2 Ultra Low Sulfur Diesel Dyed 15 ppm Sulfur Max

Fuels, Diesel, C9-18-Alkane Branched and Linear Alkanes, C10-C20 branched and linear Nachthalene NA 45.4 kg final RQ

SARA: The following EPA hazard categories apply to this product:

Acute Health Hazard Fire Hazard Chronic Health Hazard

#### SARA Section 313:

This product may contain component(s), which if in exceedance of the de minimus threshold, may be subject to the reporting requirements of SARA Title III Section 313 Toxic Release Reporting (Form R). CERCLA/SARA 313 Emission reporting: Name No. 2 Diesel Fuel

Kerosine, Petroleum	None
Fuels, Diesel, C9-18-Alkane Branched and Linear	None
Alkanes, C10-C20 branched and linear	None
Naphthalene	0.1 % de minimis concentration

State and Community Right-To-Know Regulations: The following component(s) of this material are identified on the regulatory lists below

No. 2 Diesel Fuel	12.12
Louisiana Right-To-Know: California Proposition 65:	Not Listed.
	Not Listed.
New Jersey Right-To-Know: Pennsylvania Right-To-Know:	SN 2444
	Not Listed.
Massachusetts Right-To Know: Florida Substance List	Not Listed,
	Not Listed.
Rhode Island Right-To-Know:	Not Listed.
Michigan Critical Materials Register List:	Not Listed.
Massachusetts Extraordinarily Hazardous Substances:	Not Listed.
California - Regulated Carcinogens:	Not Listed.
Pennsylvania RTK - Special Hazardous Substances:	Not Listed.
New Jersey - Special Hazardous Substances:	Not Listed.
New Jersey - Environmental Hazardous	SN 2444 TPQ: 10000 lb (Under N.J.A.C. 7:1G, environmental
Substances List:	hazardous substances in mixtures such as gasoline or new and
	used petroleum oil may be reported under these categories)
Illinois - Toxic Air Contaminants	Not Listed.
New York - Reporting of Releases Part 597 -	Not Listed
List of Hazardous Substances:	THUS LIBROW.
Kerosine, Petroleum	
Louisiana Right-To-Know:	Not Listed.
California Proposition 65:	Not Listed.
New Jersey Right-To-Know:	SN 1091
Pennsylvania Right-To-Know:	Present
Massachusetts Right-To Know:	Present
Florida Substance List:	Not Listed
Rhode Island Right-To-Know:	Not Listed.
Michigan Critical Materials Register List:	Not Listed.
Massachusetts Extraordinarily Hazardous Substances:	Not Listed.
California - Regulated Carcinogens:	Not Listed.
Pennsylvania RTK - Special Hazardous	Not Listed.
Substances:	HULLINGU.
New Jersey - Special Hazardous Substances:	Not Listed.
New Jersey - Special Hazardous Substances:	Not Listed.

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13. DISPOSAL CONSIDERATIONS

Description of Waste Residues This material may be a flammable liquid waste.

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Safe Handling of Wastes Handle in accordance with applicable local, state, and federal regulations. Use personal protection measures as required, appropriate grounding and bonding practices. Use only non-sparking tools. Do not expose to heat, open flames, strong ox other sources of ignition. No smoking.

Disposal of Wastes / Methods of Disposal The user is responsible for determining if any discarded material is a hazardous waste (40 CFR 262.11). Dispose of in accord with federal, state and local regulations.

Methods of Contaminated Packaging Disposal Empty containers should be completely drained and then discarded or recycled, if possible. Do not cut, drill, grind or weld on empty containers since explosive residues may be present. Dispose of in accordance with federal, state and local regulations. 14. TRANSPORT INFORMATION

DOT (49 CFR 172.101): UN Proper shipping name: UN/Identification No: Transport Hazard Class(es): Packing group:	Fuel Oil, No. 2 NA 1993 3 III
TDG (Canada): UN Proper shipping name: UN/Identification No: Transport Hazard Class(es): Packing group:	Fuel OII, No. 2 NA 1993 3 III
15. REGU	ILATORY INFORMATION
US Federal Regulatory Information:	
US TSCA Chemical Inventory Section 8(b):	This product and/or its components are listed on the TSCA Chemical Inventory.

#### EPA Superfund Amendment & Reauthorization Act (SARA):

SARA Section 302: This product does not contain any component(s) included on EPA's Extremely Hazardous Substance (EHS) List.

Name	CERCLA/SARA - Section 302 Extremely Hazardous Substances and TPOs
No. 2 Diesel Fuel	NA
Kerosine, Petroleum	NA
Fuels, Diesel, C9-18-Alkane Branched and Linear	NA
Alkanes, C10-C20 branched and linear	
Naphthalene	NA
Prage to teresto	NA

This product may contain component(s) identified either as an EHS or a CERCLA Hazardous substance which in case of a spill or release may be subject to SARA n

	Name	CERCLA/SARA - Hazardous Substances and their Reportable Quantities
20.00	No. 2 Diesel Fuel	NA
	Kerosine, Petroleum	NA

SDS ID NO .: 0291MAR019

SARA Section 304:

Product name: Marathon Petroleum No. 2 Ultra Low Sulfur Diesel Dyed 15 ppm Sulfur Max

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0291MAR019 Marathon Petroleum No. 2 Ultra Low Sulfur Diesel Dyed 15 ppm Sulfur Max New Jensey - Environmental Hazardous Substances List: Illinois - Toxic AI\* Contaminants New York - Reporting of Releases Part 597 -List of Hazardous Substances: Fuels, Diesel, Co-18-Akme Branched and Linear Louisiana Right-To-Know: California Right-To-Know: Mensanchusetts Right-To-Know: Hennsylvania Right-To-Know: Michigan Critical Material Register List: Massachusetts Right-To-Know: Michigan - Ragulated Carcinogens: California - Ragulated Carcinogens: Bartode Island Right-To-Know: Michigan - Ragulated Carcinogens: California - Ragulated Carcinogens: Parneytvania Rift-Special Hazardous Substances: California: - Ragulated Carcinogens: New Jensey - Environmental Hazardous Substance List: Illinois - Toxic AI\* Contaminants New Jensey - Environmental Hazardous Substances List: Ullinois - Toxic AI\* Contaminants New Jensey Right-To-Know: Altarens, C10-C20 branched and Inionar Louisiana Right-To-Know: Massachusetts Right-To-Know: Massach New Jersey - Environmental Hazardous Substances List: Not Lister Not Lister Not Lister Not Lister Pennsylvania RTK - Special Hazardous Substances: New Jersey - Environmental Hazardous Substances: New Jersey - Environmental Hazardous Substances Lat: Illinois - Toxic Air Contaminants New York - Reporting of Releases Part 597 -List of Hazardous Substances: New York - Reporting of Releases Part 597 -List of Hazardous Substances: Nashihaines Louisiana Right-To-Know: Masaachurets Right-To-Kn

## Revision Date: 05/14/2015

SN 1091 TPQ: 10000 lb (Under N.J.A.C. 7:1G, environmental hazardous substances in mixtures such as gasoline or new and used petroleum oil may be reported under these categories) Not Listed. Not Listed

	NOT LISTED.
	Not Listed.
	Not Listed,
397	Not Listed.
<b>S</b> ;	Not Listed.
	Not Listed,
	Not Listed.
	Not Listed,
:	Not Listed,
	Not Listed.
	Carcinogen, Initial
	SN 1322 SN 3758
	Environmental has
	Present
	Not Listed.

Carcinogen, Initial date 4/19/02
SN 1322 SN 3758
Environmental hazard Present (particulate)
Present
Not Listed.
Toxic; Flammable
Not Listed.
Not Listed.
Not Listed.
Not Listed,
Tarcinogan

Cardinogen SN 1322 TPQ: 500 lb (Reportable at the de minimis quantity of >0.1%)

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Revision Date: 05/14/2015

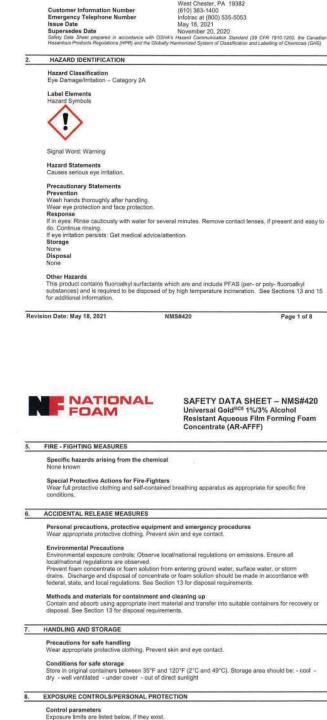
OSHA

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Revision Date: 05/14/2015

<image/> Under Ruber Rube	laria of the Controlle	1 lb RQ (land/water)	Present 100 lb RQ (air)	s Part 597 -	Illinois - Toxic Air Contaminants New York - Reporting of Releases
BUBBARD LIK (NOSE), CASE HEAPING 260         Anadian Regulatory Information:       The podde ta base much safeliar is accordance with the hearant clanes of Prodecta Regulatory.         No.2. Desail Fund       B.3.024, Cogi and S. With Miles Classifier is accordance with the hearant clanes of Prodecta Regulatory.         No.2. Desail Fund       B.3.024, Cogi and S. With Miles Classifier is accordance with the hearant clanes of Prodecta Regulatory.         No.2. Desail Fund       B.3.024, Cogi and S. With Miles Classifier is accordance with the hearant clanes of Prodecta Regulatory.         No.2. Desail Fund       B.3.024, Cogi and Producta Safety         Notacci Regulatory.       Desail Fund         With Term Producta Regulatory.       Desail Fund </th <th>laria of the Controlle</th> <th>nent(s) that are listed</th> <th>contains the following comp</th> <th>This product</th> <th>List of Hazardous Substances:</th>	laria of the Controlle	nent(s) that are listed	contains the following comp	This product	List of Hazardous Substances:
Control Products Regulation:           Name         Canada         Wilds: Canada         Canada         Disciplination of the Disciplinatin Disciplination of the Disciplination of the Disciplination of	equirea by the	-9 lance with the hazan	st (NDSL): CAS# 1159170-2 has been classified in accord	*This produc	
No. 2 Description         Bit Directions         Notestion           Web, Direct, O. 2005         Bits, Direct, Direction         Bits, Direct, Direction         Bits, Direct, Direction         Directions         Directions           Web, Direct, O. 2005         Bits, Direct, Direction         Bits, Direct, Direction         Directions         Directions           Web, Direct, O. 2005         Bits, Direction         Bits, Direction         Directions         Directions           Web, Direct, O. 2005         Bits, Direction         Bits, Direction         Directions         Direction           Web, Direct, O. 2005         Bits, Direction         Directions         Directions         Directions           Web, Direct, O. 2005         Bits, Bits, Directions         Di			oducts Regulations.*	Controlled P	
Eventsion, Performante and Innaria         B3.02A.02B         11/4           Fuels, Diesel, C. B-B-Bande Branched and Innaria         B3.02A.02B         0.1%           Matema, Diele C. B-B-Bande Branched and Innaria         B3.02A.02B         0.1%           Matema, Diele C. B-B-Bande Branched and Innaria         B3.02A.02B         0.1%           Matema, Diele C. B-B-Bande Branched and Innaria         B3.02A.02B         0.1%           Matema, Diele C. Bandhed and Innaria         B3.02A.02B         0.1%           Matema, Diele C. Bandhed and Innaria         B4.02A         0.1%           Matema Diele C. Bandhed and Innaria         B4.02A </td <td>isclosure:</td> <td>ions of Canad</td> <td>Substances:</td> <td>(</td> <td></td>	isclosure:	ions of Canad	Substances:	(	
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Naphthalme         BAD2A         0.115           Image: Control of the second seco					Linear
Image: State in the image: State in the image image in the image				i linear	
Image: State in the image of the image					D)
BUND: 0291104/019       Todocky and Product Safety Corrections to the Sofety Data Sheety is Correct to the bast of our knowledge, information and the of 1s publication. The information is intended as guidance for safe handling, use, processing, storage to first publication. The information is intended as guidance for safe handling, use, processing, storage formation relates only to the specific material designal and is not considered a warranty or quality speci- formation relates only to the specific material designal and is not considered a warranty or quality speci- formation relates only to the specific material designal and is not considered a warranty or quality speci- formation relates only to the specific material designal and is not considered a warranty or quality speci- formation relates only to the specific material designal and is not considered a warranty or quality speci- formation relates only to the specific material designal and is not considered a warranty or quality speci- formation relates only to the specific material designal and is not considered a warranty or quality speci- formation relates only to the specific material designal and is not considered a warranty or quality speci- formation relates only to the specific material designal and is not considered a warranty or quality speci- formation relates only to the specific material designal and is not considered a warranty or quality speci- formation relates only to the specific material designal and is for additional to the text.         EVENC: 0291104/0317       Product name: Marathan Petroleum No. 2 Utra Lev Suftr Diesel Dyed 15 Diversal Gold <sup>15</sup> C 1/k/3% Alcohol Resistant Aqueous Film Forming Fi Concentrate (AR-AFFF)         Macked DIPOTRICATION       Specific Concentration Limits 12/2776-0.8-0.1 2/2776-0.8-0.1 2/2776-0.8-0.1 2/2776-0.8-0.1 2/2776-0.8-0.1 2/2776-0.8-0.1 2/2776-0.8-0.1 2/2776-0.8-0.1 2/2776-0.8-0.1 2/2776-0.8-				Not Applicab	DTE:
Impared By Walkin Date:         Totocology and Product Safety OX42015           Impared Date:         Strate           Impared Date:         Strate      <	and the state of the	ON			
wision Date:       OST422015         wision Note:       Selamatr         the of is publication. The information is Instanded is guidance for each handlered use, proceeding, storage monotation, received and received and may not be valid for such material used in the any other material designated and may not be valid for such material used in the any other material seed in the text.         SIDIOL: 0231MAR019       Product name: Marathon Petroleum No. 2 Utra Lew Sutter Diesel Dyed 15 ppm Suffar Max.         SIDIOL: 0231MAR019       Product name: Marathon Petroleum No. 2 Utra Lew Sutter Diesel Dyed 15 ppm Suffar Max.         SIDIOL: 0231MAR019       Product name: Marathon Petroleum No. 2 Utra Lew Sutter Diesel Dyed 15 ppm Suffar Max.         SIDIOL: 0231MAR019       Product name: Marathon Petroleum No. 2 Utra Lew Sutter Diesel Dyed 15 ppm Suffar Max.         SIDIOL: 0231MAR019       Product name: Marathon Petroleum No. 2 Utra Lew Sutter Diesel Dyed 15 ppm Suffar Max.         SIDIOL: 0231MAR019       Product name: Marathon Petroleum No. 2 Utra Lew Sutter Diesel Dyed 15 ppm Suffar Max.         SIDIOL: 0231MAR019       Product Name: Marathon Petroleum No. 2 Utra Lew Sutter Diesel Dyed 15 ppm Suffar Max.         SIDIOL: 0231MAR019       Product Name: Marathon Petroleum No. 2 Utra Lew Sutter Diesel Dyed 15 ppm Suffar Max.         SIDIOL: 0231MAR019       Product Name: N				and a	anamad Bu
BID MO:: 0291MAR019       Product name: Marathon Petroleum No. 2 Utra Lew Suffur Diesel Dyed 15         SID MO:: 0291MAR019       Product name: Marathon Petroleum No. 2 Utra Lew Suffur Diesel Dyed 15         SID MO:: 0291MAR019       Product name: Marathon Petroleum No. 2 Utra Lew Suffur Diesel Dyed 15         SID MO:: 0291MAR019       Product name: Marathon Petroleum No. 2 Utra Lew Suffur Diesel Dyed 15         SID MO:: 0291MAR019       Product name: Marathon Petroleum No. 2 Utra Lew Suffur Diesel Dyed 15         SID MO:: 0291MAR019       Product name: Marathon Petroleum No. 2 Utra Lew Suffur Diesel Dyed 15         SID MO:: 0291MAR019       Product name: Marathon Petroleum No. 2 Utra Lew Suffur Diesel Dyed 15         SID MO:: 0291MAR019       Product name: Marathon Petroleum No. 2 Utra Lew Suffur Diesel Dyed 15         SID MO:: 0291MAR019       Product name: Marathon Petroleum No. 2 Utra Lew Suffur Diesel Dyed 15         SID MO:: 0291MAR019       Product name: Marathon Petroleum No. 2 Utra Lew Suffur Diesel Dyed 15         SID MO:: 0291MAR019       Product name: Marathon Petroleum No. 2 Utra Lew Suffur Diesel Dyed 15         SID MO:: 0291MAR019       Product name: Marathon Petroleum No. 2 Utra Lew Suffur Diesel Dyed 15         SID MO:: 0291MAR019       Product No.         SID MO:: 0201       SiD SiD SiD			u Product Safety	05/14/2015	vision Date:
Resistant Aqueous Film Forming Fic Concentrate (AR-AFFF)           HAZARD IDENTIFICATION           Specific Concentration Limits           The value sisted below represent the percentages of ingredients of unknown toxicity. Acute admain toxicity           Acute admain toxicity         5 - 15% 5 - 25% Acute inhelation toxicity           COMPOSITION/INFORMATION ON INGREDIENTS           This product is a mixture.           Congonent         CAS Number         Concentration* 1 - 5% Advigholygicoside           Sodium decyl sulfate         1 42-87-0 1 - 5%         1 - 5% Dipropylane Glyco Monomethyl Ether         34590-94-8 1 - 5%           *Exact concentration withheld as trade secret.         This product contains fluoroalikyl surfactants which are and include PFAS (per- or poly- fluoroalikyl substance). See Sections 13 and 15 for additional information.           FIRST- AID MEASURES           Description of necessary first-aid measures Eyee Immediately flood the eye with plenty of water for at least 15 minutes, holding the eye open. Obta medical attention if sorreas or redness persists. Skin         Wash skin thoroughly with scap and water. Obtain medical attention if initiation persists. Ingestion         Ditte by drinking large quantities of water and obtain medical attention.	Page 13 of	Ifur Diesel Dyed 15	on Petroleum No. 2 Utra Low (	ct name: Marat	
The values listed below represent the percentages of ingredients of unknown toxicity.         Acute dermal toxicity       5-15%         Acute dermal toxicity       5-15%         Acute inflation toxicity       15 - 25%         COMPOSITION/INFORMATION ON INGREDIENTS         This product is a mixture.         Component       CAS Number         Concentration*         Sodium decyl sulfate       142-87-0         Alkybolyglycoside       132778-08-6         Dipropylene Glycol Monomethyl Ether       34590-94-8         *Exact concentration withheld as trade secret.         This product contains fluoroalkyl surfactants which are and include PFAS (per- or poly- fluoroalkyl substances). See Sections 13 and 15 for additional information.         FIRST- AID MEASURES         Description of necessary first-aid measures         Eyes         Immediately flood the eye with plenty of water for at least 15 minutes, holding the eye open. Obta medical attention if irritation persists.         Skin         Wash skin thoroughly with soap and water. Obtain medical attention if irritation persists.         Dilute by drinking large quantities of water and obtain medical attention.	hol	old <sup>≋C6</sup> 1%/3% A jueous Film Fo	Resistant A	NAL	
Acute dermal toxicity       5 - 15%         Acute aquatic toxicity       15 - 25%         COMPOSITION/INFORMATION ON INGREDIENTS         This product is a mixture.         Component       CAS Number         Sodium decyl sulfate       142-87-0         Jippopylene Glycol Monomethyl Ether       34590-94-8         Dipropylene Glycol Monomethyl Ether       34590-94-8         *Exact concentration withheld as trade secret.         This product contains fluoroalkyl surfactants which are and include PFAS (per- or poly- fluoroalkyl substances). See Sections 13 and 15 for additional information.         FIRST-AID MEASURES         Description of necessary first-aid measures         Eyes         Immediately flood the eye with plenty of water for at least 15 minutes, holding the eye open. Obta medical attention if irritation persists.         Nais         Wash skin thoroughly with scap and water. Obtain medical attention if irritation persists.         Ingestion         Dilute by drinking large quantities of water and obtain medical attention.	hol	old <sup>≋C6</sup> 1%/3% A jueous Film Fo	Resistant A	ON	HAZARD IDENTIFICATIO
COMPOSITION/INFORMATION ON INGREDIENTS           This product is a mixture.           Component         CAS Number         Concentration*           Sodium decyl sulfate         142-87-0         1 - 5%           Alkylpolygivoside         132778-08-6         1 - 5%           Dipropylene Glycol Monomethyl Ether         34590-94-8         1 - 5%           "Exact concentration withheld as trade secret.         This product contains floated secret.         This product contains floated secret.           This product contains floated secret.         This product contains floated secret.         FIRST- AID MEASURES           Description of necessary first-aid measures         Eyes         Immediately fload the eye with plenty of water for at least 15 minutes, holding the eye open. Obta medical attention if initiation persists.           Skin         Wash skin thoroughly with soap and water. Obtain medical attention if initiation persists.         Ingestion           Dilute by drinking large quantities of water and obtain medical attention.         Diate by drinking large quantities of water and obtain medical attention.	hol	old <sup>®C6</sup> 1%/3% A jueous Film Fo (AR-AFFF)	Resistant A Concentrate	ON .imits	HAZARD IDENTIFICATIO Specific Concentration L The values listed below re
Component         CAS Number         Concentration*           Sodium decyl sulfate         142-87-0         1 - 5%           Alfvybolyglyboside         132778-08-6         1 - 5%           Dipropylene Glycol Monomethyl Ether         34590-94-8         1 - 5%           *Exact concentration withheld as trade secret.         This product contains fluoroalkyl surfactants which are and include PFAS (per- or poly-fluoroalkyl substances). See Sections 13 and 15 for additional information.           FIRST- AID MEASURES         Description of necessary first-aid measures         Eyes           Wash skin thoroughly with soap and water. Obtain medical attention if irritation persists.         Namestiate         Namestiate           Wash skin thoroughly with soap and water. Obtain medical attention.         Dilute by drinking large quantities of water and obtain medical attention.         Sin	hol	old <sup>®C6</sup> 1%/3% A jueous Film Fo (AR-AFFF)	Resistant A Concentrate	ON Jimits present the p <5 15	HAZARD IDENTIFICATION Specific Concentration L The values listed below rep Acute oral toxicity Acute darmal toxicity Acute inhalation toxicity
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Most important symptoms/effects, acute and delayed Aside from the information found under Description of necessary first aid measures (above) and Indication of immediate medical attention and special treatment needed, no additional symptoms a effects are anticipated.	n*	Concentr (AR-AFFF) unknown toxicity,	Resistant A Concentration recentages of ingredients of % 19% - 25% - 25% - 25% REDIENTS CAS Number 142-87-0 132778-08-6 34590-94-8 cret. ts which are and include 1 additional information.	DN nits 5 5 18 12 12 TION ON INC athyl Ether athyl	HAZARD IDENTIFICATION Specific Concentration L The values listed below re Acute dermal toxicity Acute dermal toxicity Acute adversarial toxicity Acute adver
enexs are anacqueed. Indication of immediate medical attention and special treatment needed Notes to Physicians Treat symptomatically.	hol ing Foam	Concentr (AR-AFFF) unknown toxicity, unknown toxicity, 1 - 5% 1 - 5% 1 - 5% 1 - 5% 5, holding the eye of if irritation persists ion, y breathing difficul t aid measures (ab	Resistant A Concentration rcentages of ingredients of % 19% - 25% - 25% - 25% REDIENTS CAS Number 142-87-0 132778-08-6 34590-94-8 cret. ts which are and include 1 additional information.	DN nits 5 5 18 19 10 10 10 10 10 10 10 10 10 10 10 10 10	HAZARD IDENTIFICATION Specific Concentration L The values listed below rep Acute dermal toxicity Acute adermal toxicity Acute addression This product is a mixture. Component Sodium decyl sulfate Akylpolyglycoside Dipropyleme Glycol Monome "Exact concentration withhe This product contains fluoro substances). See Sections : FIRST- AID MEASURES Description of necessary Eyes Immediately flood the eye u medical attention if sorener Skin Wash skin thoroughly with Ingestion Dilute by drinking large qua Inhalation Move vicient to fresh air. Ot Most important symptom Aside from the information
FIRE - FIGHTING MEASURES	hol ing Foam	Concentr (AR-AFFF) unknown toxicity. Concentr 1 - 5% 1 - 5% 1 - 5% 5, holding the eye of if irritation persists ion. y breathing difficul t aid measures (ab	Resistant A Concentration accentages of ingredients of % 25% 25% 25% REDIENTS CAS Number 142-87-0 132778-08-6 34590-94-8 34590-94-8 cret. Its which are and include I additional Information. Its which are and include I additional Information. sures water for at least 15 minut persists. er. Obtain medical attention or and obtain medical attention or and obtain medical attention and obtain medical attention and obtain medical attention of necessary fit and special treatment new	DN mits present the p 5 5 5 5 5 7 10 10 11 11 11 11 11 11 11 11 11 11 11	HAZARD IDENTIFICATION Specific Concentration L The values listed below replaced and the second secon
Suitable Extinguishing Media	hol ing Foam	Concentr (AR-AFFF) unknown toxicity. Concentr 1 - 5% 1 - 5% 1 - 5% 5, holding the eye of if irritation persists ion. y breathing difficul t aid measures (ab	Resistant A Concentration accentages of ingredients of % 25% 25% 25% REDIENTS CAS Number 142-87-0 132778-08-6 34590-94-8 34590-94-8 cret. Its which are and include I additional Information. Its which are and include I additional Information. sures water for at least 15 minut persists. er. Obtain medical attention or and obtain medical attention or and obtain medical attention and obtain medical attention and obtain medical attention of necessary fit and special treatment new	DN nits 5 5 18 19 10 TION ON INC athyl Ether athyl	HAZARD IDENTIFICATION Specific Concentration L The values listed below re Acute oral toxicity Acute armal toxicity Acute admail toxi
This preparation is used as an extinguishing agent and therefore is not a problem when trying to c fire. Use extinguishing agent appropriate to other materials involved,	hol ing Foam	Concentr (AR-AFFF) unknown toxicity. Concentr 1 - 5% 1 - 5% 1 - 5% 5, holding the eye of if irritation persists ion. y breathing difficul t aid measures (ab	Resistant A Concentration accentages of ingredients of % 25% 25% 25% REDIENTS CAS Number 142-87-0 132778-08-6 34590-94-8 34590-94-8 cret. Its which are and include I additional Information. Its which are and include I additional Information. sures water for at least 15 minut persists. er. Obtain medical attention or and obtain medical attention or and obtain medical attention and obtain medical attention and obtain medical attention of necessary fit and special treatment new	DN nits 5 5 18 19 10 TION ON INC athyl Ether athyl	HAZARD IDENTIFICATION Specific Concentration L The values listed below re Acute oral toxicity Acute armal toxicity Acute admail toxi



FOAM

Recommended use of the chemical and restrictions on use Identified uses Restrictions on Use Company Identification

IDENTIFICATION

Product Name

1.

SAFETY DATA SHEET - NMS#420 Universal Gold<sup>805</sup> 1%/3% Alcohol Resistant Aqueous Film Forming Foam Concentrate (AR-AFFF)

Universal Gold<sup>6CS</sup> 1%/3% Alcohol Resistant Aqueous Film Forming Foam Concentrate (AR-AFFF)

Firefighting Foam Concentrate See Section 15 National Foam 350 East Union Street West Chester, PA 19382 (610) 363-1400 Indexee of 9000 55 5052

Infotrac at (800) 535-5053 May 18, 2021

Dipropylene Glycol Monomethyl Ether ACGIH TLV: 100 ppm (606 mg/m<sup>3</sup>) 8hr TWA; 15 min STEL 150 ppm (909 mg/m<sup>3</sup>); Danger of cutaneous absorption. OSHA PEL: 100 ppm (600 mg/m3) Danger of cutaneous absorption.

Appropriate engineering controls Use with adequate venilitation. If this product is used in a pressurized system, there should be local procedures for the selection, training, inspection and maintenance of this equipment. When used in large volumes, use local exhaust ventilation.



# SAFETY DATA SHEET - NMS#420 Universal Gold<sup>8C6</sup> 1%/3% Alcohol Resistant Aqueous Film Forming Foam Concentrate (AR-AFFF)

#### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Individual protection measures **Respiratory Protection** 

Respiratory Protection Wear respiratory protection if there is a risk of exposure to high vapor concentrations, aerosols or if applied to hot surfaces. A NIOSH approved full face respirator may be worm. The specific respirator selected must be based on the airborne concentration found in the workplace and must not exceed the working limits of the respirator. Skin Protection

Gloves Eye/Face Protection Chemical goggles or safety glasses with side shields. Body Protection Normal work wear.

#### PHYSICAL AND CHEMICAL PROPERTIES 9.

	Appearance	
	Physical State	Liquid
	Color	Amber
	Odor	Mild, pleasant
	Odor Threshold	No data available
	pH	8.2
	Specific Gravity	1.03
	Boiling Range/Point (°C/F)	No data available
	Melting Point (°C/F)	No data available
	Flash Point (°C/F)	>200°F
	Vapor Pressure	No data available
	Evaporation Rate (BuAc=1)	No data available
	Solubility in Water	Soluble
	Vapor Density (Air = 1)	Not applicable
	VOC (%)	No data available
	Partition coefficient (n-	No data available
	octanol/water)	
	Viscosity	No data available
	Auto-ignition Temperature	Not applicable
	Decomposition Temperature	No data available
	Upper explosive limit	Not applicable
	Lower explosive limit	Not applicable
	Flammability (solid, gas)	Not applicable
10.	STABILITY AND REACTIVITY	
10.	Reactivity	
	No data available.	
	No data available,	
	Chemical Stability	
	Stable under normal conditions,	
	D	105
	Possibility of hazardous reaction Hazardous polymerization will not	

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12. ECOLOGICAL INFORMATION

Ecotoxicity No relevant studies identified.

Mobility in soil No relevant studies identified.

Persistence/Degradability No relevant studies identified

Bioaccumulative Potential No relevant studies identified

Other adverse effects No relevant studies identified

#### 13. DISPOSAL CONSIDERATIONS

Disposal Methods This product contains PFAS (per- or poly- fluoroalkyl substances). Local requirements for waste disposal may be more restrictive or otherwise different from national regulations. Therefore, applicable local and state regulatory agencies should be contacted regarding disposal of waste foam concentrate or foam/foam solution.

toam/foam solution. <u>Concentrate</u> Prevent foam concentrate from entering ground water, surface water or storm drains. Small quantilies of foam concentrate may be collected on absorbents which can then be disposed of. Disposal should be made in accordance with local, state and federal regulations. High temperature incineration is required at a minimum of 100°C with a minimum residence time of zecords per the United States Environmental Protection Agency's Significant New Use Rule for a component of this product. See 40 CFR721.10700. <u>Feam/Feam Solution</u> Prevent feam/feam Solution from entering ground water, surface water or storm drains. Small quantilies of foam solution may be collected on absorbents which can then be disposed of. Disposal should be made in accordance with local, state and federal regulations. High temperature incineration is required at a minimum of 100°C with a minimum residence time of zecords per the United States Environmental Protection Agency's Significant New Use Rule for a component of this product. See 40 CFR721.10700. <u>NOTE</u>: Phase consult National Feam for additional information regarding the disposal of foam concentrates and foam solutions foam for additional information regarding the disposal of foam concentrates and foam solutions or visit <u>http://nationalfoam.com/use-discharge-and-disposal-of-tirefighting-foam-products/</u>

#### TRANSPORT INFORMATION

14.

Shipping Information

Shipping Description National Motor Freight Code Fire Extinguisher Charges or Compounds N.O.I., Class 70 69160 Sub 0

This information is not intended to convey all transportation classifications that may apply to this product. Classifications may vary by container volume and by regional regulations. It is the responsibility of transporting organization to follow all applicable laws, regulations and rules when transporting this material

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SAFETY DATA SHEET - NMS#420 Universal Gold<sup>®C6</sup> 1%/3% Alcohol Resistant Aqueous Film Forming Foam Concentrate (AR-AFFF)

10. STABILITY AND REACTIVITY

Conditions to Avoid Contact with incompatible materials

Incompatible Materials Water reactive materials - burning metals - electronically energized equipment

Hazardous Decomposition Products Oxides of carbon – hydrogen fluoride – aldehydes – ketones – organic acids

#### 11. TOXICOLOGICAL INFORMATION

Acute Toxicity Product Oral LD50 (rat) >5000mg/kg Oral LD50 (ral) >5000mg/kg Ak/spolythcoside Oral LD50 (ral) >5000mg/kg Dipropylene Glycol Monomethyl Ether Oral LD50 (ral) >5500 mg/kg Dermal LD5 (rabbil) >5510 mg/kg Inhalation LC50 (rat) > 3.35 mg/l,7h, vapour, no deaths occurred at this concentration

Specific Target Organ Toxicity (STOT) – single exposure Available data indicates this product is not expected to cause target organ effects after a single exposure.

Specific Target Organ Toxicity (STOT) – repeat exposure Available data indicates this component not expected to cause target organ effects after repeated exposure.

Serious Eye damage/Irritation Product: Primary irritant (rabbit) (tested on a similar product) Sodium decyl sulfate; Severe eye irritant (based on similar material) Akydpolybicoside; Severely irritating (rabbit) (50% solution)

Skin Corrosion/Irritation Product: Not a primary irritant (rabbit) (tested on a similar product)

Respiratory or Skin Sensitization Available data indicates this product is not expected to cause skin sensitization.

Carcinogenicity Not considered carcinogenic by NTP, IARC, and OSHA.

Germ Cell Mutagenicity Available data indicates this product is is not expected to be mutagenic.

Reproductive Toxicity Available data indicates this product is not expected to cause reproductive toxicity or birth defects

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Aspiration Hazard Not an aspiration hazard

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#### SAFETY DATA SHEET - NMS#420 Universal Gold<sup>®C6</sup> 1%/3% Alcohol Resistant Aqueous Film Forming Foam Concentrate (AR-AFFF)

#### 15. REGULATORY INFORMATION

United States TSCA Inventory This product contains ingredients that have restricted use under the EPA Toxic Substance Control Act and are subject to a Significant New Use Rule (40CFR721.10700 and 40CFR721.10727). This product may only be used as a fire fighting foam. Any other use of this product is strictly prohibited. Disposal of this product must be done by incineration at a minimum of 1000°C with a minimum residence time of 2 seconds:

Canada DSL Inventory This product contains an ingredient that is not listed on the Domestic Substance List (DSL) or the Non-Domestic Substance List (NDSL).

## SARA Title III Sect. 311/312 Categorization

SARA Title III Sect. 313 This product does not a not contain any chemicals that are listed in Section 313 at or above de minimis



WARNING: This product can expose you to chemicals including diethanolamine and formaldehyde, which are known to the State of California to cause cancer, and perfluoroctanoic acid and methanol, which are known to the State of California to cause birth defects or other reproductive harm. For more information go to ww.p65warnings.ca.gov/

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

OTHER INFORMATION 16.

NFPA Ratings NFPA Code for Health - 0 NFPA Code for Flammability - 0 NFPA Code for Reactivity - 0 NFPA Code for Special Hazards - None

Legend ACGIH: American Conference of Governmental Industrial Hygienists ACGIH: American Conference of Governmental Indu CS49: Chemical Abstracts Service Number EC50: Effect Concentration 50% IARC; International Agency for Research on Cancer LC50: Lethal Concentration 50% LD50; Lethal Dose 50% LDS0: Lethal Dose 50% NA: Denotes no applicable information found or available OSHA: Occupational Safety and Health Administration PEL: Permissible Exposure Limit RQ: Reportable Quantity STEL: Short Ferm Exposure Limit NA: Denotes no applicable information found or available OSHA: Occupational Safety and Health Administration PEL: Permissible Exposure Limit RQ: Reportable Quantity RQ: Reportable Quantity Revision Date: May 18, 2021 NMS#420

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# SAFETY DATA SHEET - NMS#420 Universal Gold<sup>8C6</sup> 1%/3% Alcohol Resistant Aqueous Film Forming Foam Concentrate (AR-AFFF)

16. OTHER INFORMATION

Legend, continued STEL: Short Term Exposure Limit TLV: Threshold Limit Value TSCA: Toxic Substance Control Act

Revision Date: May 18, 2021 Replaces: November 20, 2020 Changes made: Updates to sections 2, 6 and 13 and 15.

Information Source and References This SDS is prepared by Hazard Communication Specialists based on information provided by internal company references.

EnviroNet LLC.

Prepared By:

Universal Gold is a registered trademark of Angus International.

The information and recommendations presented in this SDS are based on sources believed to be accurate. National Foam assumes no liability for the accuracy or completeness of this information. It is the user's responsibility to determine the suitability of the matchraft or their particular, we particular, we make NO WARRANTY OF MERCHANTABILITY OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, with respect to such information, and we assume no liability resulting from its use. Users should ensure that any use or disposal of the material is in accordance with applicable Federal, State, and local laws and regulations.



#### Hand Sanitizer Isopropyl - 75%

Safety Data Sheet according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations Date of issue: 04/19/2020 Revision date: 04/19/2020 Supersedes: 04/01/2020

1.1. Identification				
Product form	: Substance			
Trade name	: Isopropanol			
Chemical name	: Isopropyl Alcohol			
CAS No	: 67-63-0			
Product code		9 FP USP IPA; HPF-040941-FP		
Formula	: C3H8O			
Synonyms		/l alcohol / 2-Propanol / Isopropanol / Propan-2-ol / ISOPROPYL		
	ALCOHOL / Propanol, 2-			
	substance or mixture and uses ad			
Use of the substance/mixture		antifreeze agent; Chemical feedstock, etc.		
1.3. Details of the supplier of the sat	fety data sheet			
Kleen Concepts 8388 E Hartford Dr, Suite 105 Scottsdate, AZ 1 (480) 515-5576				
1.4. Emergency telephone number				
Emergency number	: 24 HR CHEMTREC: 1-800-	424-9300		
SECTION 2: Hazard(s) identificat	ion			
2.1. Classification of the substance				
GHS-US classification				
Flam. Liq. 2 Eye Irrit. 2A	H225 - H319 -	Highly flammable liquid and vapour Causes serious eye irritation		
STOT SE 3	H336 -	May cause drowsiness or dizziness		
Full text of H-phrases: see section 16				
2.2. Label elements				
GHS-US labeling				
Hazard pictograms (GHS-US)	GHS02 GHS07	>		
Signal word (GHS-US)	: Danger			
Hazard statements (GHS-US)	<ul> <li>H225 - Highly flammable liq H319 - Causes serious eye H336 - May cause drowsine</li> </ul>	irritation		
Precautionary statements (GHS-US)	P233 - Keep container tight P240 - Ground/bond contain P241 - Use only non-sparki P243 - Use only non-sparki P243 - Take precautionary P264 - Avoid breathing dust P274 - Vacid breathing dust P274 - Use only outdoors on P280 - Wear eye protection P303+P361+P353 - If on sk skin with water/shower P304+P340 - If inhaled: Ret	ier and receiving equipment electrical, lighting, ventilating equipment g tools measures against static discharge , gas, fume, spray, mist, vapors hjly after handling		

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## Hand Sanitizer Isopropyl - 75%

Revision Date: May 18, 2021

Safety Data Sheet according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations P370+P378 - In case of fire: Use alcohol resistant foam, carbon dioxide (CO2), dry extinguishing powder, Water spray to extinguish P403+P235 - Store in a well-ventilated place. Keep container tightly closed P405 - Store blocked up P501 - Dispose of conclusion to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation 2.3. Other hazards No additional information available
 2.4. Unknown acute toxicity (GHS US)
 Not applicable SECTION 3: Composition/Information on ingredients 3.1. Substance Name Product identifier (CAS No) 67-63-0 GHS-US classification % >= 75.0 Flam. Liq. 2, H225 concentration Eye Irrit. 2A, H319 Isopropyl Ale

NMS#420

Full text of H-phrases: see section 16       INUT Set 3, H338         12. Mixture       Next of applicable         SECTION 45, First all measures       INUT Set 3, H338         First-all measures general       : Next give anything by mosth to an unconscious person. If you feel unwell, seek medical advice (show the lake where possible).         First-all measures after inhalation       : Remove vicinity to the dark where possible).         First-all measures after skin contact       : Rinse calitously with water for several minutes. Remove contact lenses, I present and easy to advice (show the ide doctor) systical measures. Consult an eye specialist. Get medical advice/attention.         First-all measures after skin contact       : Rinse calitously with water for several minutes. Remove contact lenses, I present and easy to advice/attention.         First-all measures after ingestion       : Rinse calitously with water for several minutes. Remove contact lenses, I present and easy to advictation from.         First-all measures after ingestion       : Rinse calitously with water for several minutes. Remove contact lenses, I present and easy to advictation from.         First-all measures after ingestion       : Rinse mouth. Do NOT induce vomting. Obtain emergency medical attention.         12.       Most important symptoms and effects, both acute and dolayed         Symptoms/injuries after inhalation       : Advice for measures         5.1.       Indication of any immediate medical attention and special treatment needed         5.2. </th <th></th> <th>EN (English US) 2/7</th>		EN (English US) 2/7
Full text of H-phrases: see section 16       Initial control of first and measures         12.1       Mature         12.2       Mature         12.3       Mature         12.4       Mature         12.5       Sectification of first and measures         15:rst-ald measures general       : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).         15:rst-ald measures after inhalation       : Rever give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).         15:rst-ald measures after skin contact       : Rinse cantousky with water for several minutes. Remove contact lenses, if present and easy te do. Commune minary if you freet unwell.         16:rst-ald measures after ingestion       : Rinse cantousky with water for several minutes. Remove contact lenses, if present and easy te do. Commune minary if yer instation presists. Consult are ey specialist. Get medical advice/attention.         17:rst-ald measures after ingestion       : Rinse cantousky with water for several minutes. Remove contact lenses, if present and easy te do. Commune minary if yer instation presists. Consult are ey specialist. Get medical advice/attention.         17:rst-ald measures after ingestion       : Rinse cantousky with water for several minutes.         17:rst-ald measures after ingestion       : Rinse cantousky with are and keep secials. Get medical advice/attention.         17:rst-ald measures after ingestion	Emergency procedures	
Full text of H-phrases: see section 16       Induce       Induce         12.1       Mature       Wature       Wature         Void applicable       SECTION 45. First aid measures       Induce         14.1       Description of first aid measures       Induce         First-aid measures general       : Never give anything by mosth to an unconscious parson. If you feel unwell, seek medical air/oxis (phrow the label where possible).         First-aid measures after inhalation       : Remove vicin to fresh air and keep at rest in a position confortable for breathing. Call a POSON CENTER for dottor/physical minutes. Remove contact innes, if present and easy to dottor/physical minutes. Remove contact and easy to dottor/physical minutes. Remove contact and easy to dottor/physical minutes. Remove contact and easy to dottor/minutes after inputsion.         First-aid measures after ingestion       : Rinse addition (if yee initiation persists: Consult an eye specialist. Get medical advice/attention.         12.1       Moditation of any immediation       : May cause drowines of dizzhes.         13.1       Indication of any immediate medical attention and special treatment needed         Void administing media       : Foam. Dry powder. Carbon dixode. Water spray. Sand.         14.1       Extinguishing media       : Don. Dry advice stream.         15.2       Special hazards arising from the substance or mixture.       If Highly flammable liquid and vapor.         15.2       Special hazards arising from the		
Full text of H-phrases: see section 16       Instrue       Instrue         12. Mixture       Mixture       Mixture         void applicable       SECTION 45 First all measures       Section 44         14.1. Description of first all measures       : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).       : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).         :rist-ald measures after inhalation       : Remove vidim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER for doctor/prision innuels. Remove contact lenses, if present and easy to doctor/prision innuels. Remove contact lenses, if present and easy to doctor/prision innuels. Remove contact lenses, if present and easy to doctor/prision innuels. Remove contact enses, if present and easy to doctor/prision innuels. Remove contact lenses, if present and easy to doctor/prision innuels. Remove contact lenses, if present and easy to doctor/prision innuels. Remove contact lenses, if present and easy to doctor/prision innuels. Remove contact lenses, if present and easy to doctor/prision innuels. Remove contact lenses, if present and easy to doctor/prision innuels. Remove sentact and easy to doctor/prision and aspecial treatment needed		-
Full text of H-phrases: see section 16       Instruct of H-phrases: see section 16         12.1       Mixture         Void applicable       SECTION 41; First all measures         First-all measures general       : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).         First-all measures general       : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).         First-ald measures after inhalation       : Rever give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).         First-ald measures after skin contact       : Rines calluosky with water for several minutes. Remove contact lenses, if present and easy to do. Contum rinsing: If yes intration presists. Consult are ye specialsI. Get medical advice/attention.         First-ald measures after ingestion       : Rines enaturb. Do NOT induce vomiting. Obtain emergency medical attention.         First-ald measures after ingestion       : Rines mouth. Do NOT induce vomiting. Obtain emergency medical attention.         12.       Most important symptoms and effects, both acute and delayed         Symptomsinjuries after eye contact       : Causes serious eye initiation.         13.       Indication of any immediate medical attention and special treatment needed       Vo additional information available         Size theringuishing media       : Do not use a heavy water stream. <t< td=""><td>General measures</td><td></td></t<>	General measures	
Full text of H-phrases: see section 16       Initiation (Initiation (Initiatio) (Initiatio) (Initiatio) (Initiation (Initiatio) (Initi	6.1. Personal precautions, prot	ective equipment and emergency procedures
Full text of H-phrases: see section 16       Instruct       Instruct         12.1       Mature       Mature         12.2       Mature       Mature         12.3       Mature       Mature         12.4       Description of first all measures         First-all measures general       : Nevre give anything by mosth to an unconscious person. If you feel unwell, seek medical advice (show the lake where possible where po	SECTION 6: Accidental release	se measures
Full text of H-phrases: see section 16       INTER 200       [SIUTSE3.H336]         12.1       Mature       Wature       Wature         Vot applicable       SECTION 45.First all measures       Status         Sinstald measures general       : New give anything by modit to an unconscious person. If you feel unwell, seek medical advice (chew the lask where possible):       Status (chew the lask where possible):         Sinstald measures after inhalation       : Renove widtin for tesh air and keep and unwell.       Fall one service of the measures after skin contact       : Rises skin with water/shower. Rennove of Take off immediately all contaminated clothing.         First-ald measures after skin contact       : Rises datiously with water for several minutes. Renove contact lenses, it present and easy to an unconscious person. If you feel unwell.       Call a PD/CON/CEUTER or of colouble:         Vignominifying test after system on the set of the mediately all contaminated clothing.       : Rinse caulously with water for several minutes. Renove contact lenses, it present and easy to an unconscious person. If you feel unwell.       Call a PD/CON/CEUTER or of colouble:         Vignominifying after system and feelics, both acute and delayed       Symptominifying the site after inhalation.       Renove vices or distres.         Vignominifying after spectoalist. Cent medical attention and special treatment needed       so daditional information available       Section Secti	Protection during firefighting	: Do not enter fire area without proper protective equipment, including respiratory protection.
Full text of H-phrases: see section 16       INTER 40       [SIUTSE3.H336]         12.1       Mature       Wature       Wature         Vot applicable       SECTION 45. First all measures       Status         Straid measures general       : New give anything by modit to an unconscious person. If you feel unwell, seek medical actrice (show the label where possible).       Status (status (sta		chemical fire. Prevent fire-fighting water from entering environment.
Full text of H-phrases: see section 16       INTURE 42.00       [SIDISE 3.R36]         12.1       Mixture       Within 2000       Within 2000         Vol applicable       SECTION 41; First all measures       First-all measures general       INTURE 42.00         First-all measures after inhalation       I: Rever give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).         First-all measures after inhalation       I: Rever give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).         First-ald measures after inhalation       I: Rines exit with water for several minutes. Remove contact lenses, if present and easy to do. do. Continue rinsing: If gev eritation presists: Consult an eye specialist. Get medical advice/attention.         First-ald measures after ingestion       I: Rines eauth. Do NOT induce vomiting. Obtain emergency medical attention.         first-ald measures after ingestion       I: May cause drowsiness or dizziness.         first-ald measures after ingestion       I: May cause drowsiness or dizziness.         first-ald measures after sevenals       Section of any immediate medical attention and special treatment needed         No additional information available       Section of Section of any immediate medical attention and special treatment needed         Stable extinguishing media       I: Com. Dry powder. Carbon dixide. Water spray. Sand.         Subable extinguishing media	Firefighting instructions	: Use water spray or fog for cooling exposed containers. Exercise caution when fighting any
Full text of H-phrases: see section 16       INTER 200       [SIUTSE3.H336]         12.1       Mixture       Notapplicable         SECTION 45: First aid measures       Instantion of first aid measures         First-aid measures after inhalation       : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (stow the label where possible).         First-aid measures after inhalation       : Rever give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (stow the label where possible).         First-aid measures after inhalation       : Rever give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (stow the label where possible).         First-aid measures after skin contact       : Rinse caulously with water for several minutes. Remove contact lenses, I present and easy to do. Contine mining: fee initiation press: Consult an eye specialist. Get medical advice/attention.         First-aid measures after ingestion       : Rinse caulously with water for several minutes. Remove contact lenses, I present and easy to do. Contine mining: fee initiation press: Consult an eye specialist. Get medical advice/attention.         First-aid measures after ingestion       : Rinse caulously with water for several minutes. Remove contact lenses, I present and delayed         Symptoms/injuries after eye contact       : Causes serious ser diritation.         13.       Indication of any immediate medical attention and special treatment needed         to additional information available	5.3. Advice for firefighters	
Full text of H-phrases: see section 16       Indicate       Indicate       Indicate         12.1       Mature       Wature       Wature       Wature         Vot applicable       SECTION 45. First all measures       Indicate       Section 47.         Situ text of H-phrases: see section 16       Indicate       New give anything by mosth to an unconscisue person. If you feel unwell, seek medical advice (show the law here possible).         Situ text of text of the section of first ald measures       Indicate (show the law here possible).       Indicate (show the law here possible).         First-ald measures after inhalation       :       Remove vicine to fresh air and keep at rest in a position combratels for breathing. Call a PD/SION CENTER for dordcriptisation innucles. Fenore contract inness, if present and easy to dordcriptisation innucles. Fenore contract inness, if present and easy to dordcriptisation innucles. Fenore contract inness, if present and easy to dordcriptisation innucles. Fenore contract inness, if present and easy to dordcriptisation innucles. Fenore contract inness, if present and easy to dordcrinthing innucles. Fenore contract inness, if present and easy to dordcrinthing innucles. Fenore contract inness, if present and easy to dordcrinthing innucles. Fenore contract inness, if present and easy to dordcrinthing innucles. Fenore contract inness, if present and easy to dordcrinthing innucles. Fenore contract inness, if present and easy to dordcrinthing innucles. Fenore contract inness. If a section and double dordcrinthing innucles. Fenore contract inness.         12.1       Moditation of any immediation inditests, both acute and delayed dordcrinthing inness. <td>Explosion hazard</td> <td>: May form flammable/explosive vapor-air mixture.</td>	Explosion hazard	: May form flammable/explosive vapor-air mixture.
Full text of H-phrases: see section 16       INUT Set 3. H336         12.1       Mixture         Void applicable       SECTION 41; First ald measures         First-ald measures general       : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).         First-ald measures general       : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).         First-ald measures after inhalation       : Rever give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).         First-ald measures after skin contact       : Rinse castiously with water for several minutes. Remove contact tenes, if present and easy to do. Continue rinsing: If yey rintation pressits. Consult an eye specialist. Get medical advice/attention.         First-ald measures after ingestion       : Rinse castiously with water for several minutes. Remove contact tenes, if present and easy to do. Continue rinsing: If yey triation pressits. Consult an eye specialist. Get medical advice/attention.         First-ald measures after ingestion       : Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.         First-ald measures after ingestion       : May cause drowsiness or dizziness.         Symptomisingures after eye contact       : Causes serious eye inflation.         1.3       Indication of any immediate medical attention and special treatment neeeded to additoting information available	Fire hazard	: Highly flammable liquid and vapor.
Full text of H-phrases: see section 16       INUT Set 3, H336         12.1       Mixture         Vot applicable       SECTION 47. First all measures         STEATION 47. First all measures       Interver give anything by modil to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).         First-all measures general       : Never give anything by modil to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).         First-all measures after inhalation       : Rever give anything by modil to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).         First-all measures after skin contact       : Rinse casticuly with water for several minutes. Remove contact lenses, it present and easy to do. Continue rinsing: If yee intaiton persists. Consult an eye specialist. Get medical advice/attention.         First-ald measures after ingestion       : Rinse casticuly with water for several minutes. Remove contact lenses, it present and easy to do. Continue rinsing: If yee intaiton press. Consult an eye specialist. Get medical advice/attention.         12.1       Most important symptoms and effects, both acute and delayed         Symptoms/injuries after rige contact       : Causes serious ser diritation.         13.1       Indication of any immediate medical attention and appical treatment needed         0 codditional information available       SECTION 5; Firefightting media         13.1       Extinguishing media       : Feam. Dry powde	5.2. Special hazards arising fro	m the substance or mixture
Full text of H-phrases: see section 16       INUT Set 3, H336         12.       Mixture       Wixture         Void applicable       SECTION 41: First ald measures       SECTION 41: First ald measures         Straid measures general       : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).         Sirst-ald measures general       : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).         Sirst-ald measures after inhalation       : Rever give anything by mouth to an unconscious person. If you feel unwell, call a POISON CENTER or doctor/physician if you feel unwell.         Sirst-ald measures after skin contact       : Rinse castiously with water for several mixutes. Remove contact tenses, if present and easy to do. Continue rinsing: If yee rintation persists: Consult an eye specialist. Get medical advice/attention.         Sirst-ald measures after ingestion       : Rinse castiously with water for several mixutes. Remove contact tenses, if present and easy to do. Continue rinsing: If yee rintation persists: Consult an eye specialist. Get medical advice/attention.         Sirst-ald measures after ingestion       : Rinse eactiously with water for several mixutes. Remove contact tenses, if present and delayed         Symptoms/injuries after yeo contact       : Runse serious eye (initiation.         Sila       Indication of any immediate medical attention and special treatment needed         Via dotaiol information available <t< td=""><td>Unsuitable extinguishing media</td><td>: Do not use a heavy water stream.</td></t<>	Unsuitable extinguishing media	: Do not use a heavy water stream.
Full text of H-phrases: see section 16       INTER 200       [SIUTSE3.H336]         12.1       Mixture       Notapplicable         SECTION 45: First aid measures       Intervention of first aid measures         First-aid measures after inhalation       : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).         First-aid measures after inhalation       : Rever give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).         First-aid measures after inhalation       : Rever give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).         First-aid measures after skin contact       : Rinse caulously with water for several minutes. Remove contact lenses, It present and easy to do. Continue rinsing: If yey initiation presists: Consult are ye specialsit. Get medical advice/attention.         First-aid measures after ingestion       : Rinse caulously with water for several minutes. Remove contact lenses, It present and easy to do. Continue rinsing: If yey initiation presists: Consult are ye specialsit. Get medical advice/attention.         First-aid measures after ingestion       : Rinse multi-set and delayed         Symptoms/injuries after leye contact       : Causes serious eye initation.         13.       Indication of any immediate medical attention and special treatment needed         Vo additional information available       Secclion first-set measures <td>Suitable extinguishing media</td> <td>: Foam. Dry powder. Carbon dioxide. Water spray. Sand.</td>	Suitable extinguishing media	: Foam. Dry powder. Carbon dioxide. Water spray. Sand.
Full text of H-phrases: see section 16       INUT Set 3. H336         12.       Mature         Vot applicable       SECTION 45. First ald measures         First ald measures general       : Never give anything by mosth to an unconscious person. If you feel unwell, seek medical activities (show the label where possible).         First-ald measures after inhalation       : Remove vicine to had a rank top at rest in a position controtable for breathing.         First-ald measures after inhalation       : Rines exist with water/shower. Remove/Take of immediately all contaminated clohing.         First-ald measures after inhalation       : Rines exist with water/shower. Remove/Take of immediately all contaminated clohing.         First-ald measures after instrained response the induction of the static show the activity of the static and easy to doctrightigation innutules. Remove central tenses, if present and easy to doctrotethetion.         First-ald measures after ingestion       : Rines mouth. Do NOT induce vontiting. Obtain emergency medical attention.         8.2.       Most important symptoms and effects, both acute and delayed to several she inhalation         : Rines mouth. Do NOT induce vontiting.       Water serveral she inhalation.         : Rines mouth. Do NOT induce vontiting.       Simptominiquities after inges contact         : Causes drowiness of diziness.       : Causes serious eye initiation.         : All indication of any immediate medical attention and special treatment needed       Notation onavailable	5.1. Extinguishing media	
Full text of H-phrases: see section 16       INUT Set 3. H336         12.       Mature         Vot applicable       SECTION 45. First ald measures         First ald measures general       : Never give anything by mosth to an unconscious person. If you feel unwell, seek medical activities (show the label where possible).         First-ald measures after inhalation       : Remove vicine to had a rank top at rest in a position controtable for breathing.         First-ald measures after inhalation       : Rines exist with water/shower. Remove/Take of immediately all contaminated clohing.         First-ald measures after inhalation       : Rines exist with water/shower. Remove/Take of immediately all contaminated clohing.         First-ald measures after instrained response the induction of the static show the activity of the static and easy to doctrightigation innutules. Remove central tenses, if present and easy to doctrotethetion.         First-ald measures after ingestion       : Rines mouth. Do NOT induce vontiting. Obtain emergency medical attention.         8.2.       Most important symptoms and effects, both acute and delayed to several she inhalation         : Rines mouth. Do NOT induce vontiting.       Water serveral she inhalation.         : Rines mouth. Do NOT induce vontiting.       Simptominiquities after inges contact         : Causes drowiness of diziness.       : Causes serious eye initiation.         : All indication of any immediate medical attention and special treatment needed       Notation onavailable	SECTION 5: Firefighting mea	sures
Full text of H-phrases: see section 16       INUT Set 3, H336         12.       Mixture         Void applicable       SIOT Set 3, H336         SECTION 41: First ald measures         SECTION 41: First ald measures         Section of first ald measures after inhalation         Section of first ald measures after set with water for several mixutes. Remove contract lenses, if present and easy to do. Continue rinsing: I first-lad measures after ingestion         Section of first-lad measures after ingestion         Remove to contract insing I first indice working the several mixutes. Remove contract lenses, I present and easy to do. Continue rinsing I first indice working the several mixutes. Remove contract lenses, I present and easy to do. Continue rinsing I first indice working the several mixutes. Senone contract lenses, Soth acute and dolayed         Symptoms/inuries after ingestion       : Rinse eac		
Full text of H-phrases: see section 16       ISIOI'SE 3; H336         12.       Mixture         Vol applicable       SECTION 45; First all measures         First-all measures general       : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).         First-aild measures after inhalation       : Rever give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).         First-aild measures after inhalation       : Rever give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).         First-aild measures after skin contact       : Rinse cautiously with water for several minutes. Remove contact lenses, it present and easy to do. Contine mining: If yey initiatio pressible. Gent medical advice/attention.         First-aid measures after ingestion       : Rinse cautiously with water for several minutes. Remove contact lenses, it present and easy to do. Contine mining: If yey initiatio pressible. Gent medical advice/attention.         First-aid measures after ingestion       : Rinse multi-box NOT induce vonting. Obtain emergency medical attention.         L2       Most important symptoms and effects, both acute and delayed         Symptoms/injuries after index of attention.       : Causes serious eye initation.         Symptoms/injuries after index of attention.       : Causes serious eye initation.		e medical attention and special treatment needed
Full text of H-phrases: see section 16 Nature Not applicable SECTION 45 First aid measures Sinst-aid measures after inhalation Sinst-aid measures after independent Sinst-Sins		
Full text of H-phrases: see section 16 Kitture Mixture Description of first aid measures Kit Description of first aid measures ECTION 4: First aid measures ECTION 5: The first aid measures	.,	
Full text of H-phrases: see section 16 IN text of H-phrases: see section 16 IN text of V-phrases: Section		
Sult set of H-phrases: see section 16  Mixture Mixture Description of first aid measures  First-aid measures after inhalation  First-aid measures after inhalation  First-aid measures after skin contact  First-aid	-	
Full text of H-phrases: see section 16 INiture	First-aid measures after ingestion	: Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.
Full text of H-phrases: see section 16  I Mixture  Not applicable  STOTION 44: First aid measures  SECTION 44: First aid measu	First-aid measures after eye contact	do. Continue rinsing. If eye irritation persists: Consult an eye specialist. Get medical
Full text of H-phrases: see section 16 INitrue Mixture Vol applicable SECTION 4: First aid measures I: Description of first aid measures I: Description of first aid measures I: Description of first aid measures I: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible). I: rist-aid measures after inhalation I: Renow victim for feath air and keep at rest in a position comfortable for breathing. Call a	First-aid measures after skin contact	
Full text of H-phrases: see section 16 INitrue Not applicable SECTION 4: First ald measures INI Description of first ald measures INI Description	First-aid measures after inhalation	
Full text of H-phrases: see section 16 I. Mixture Vot applicable SECTION 4; First aid measures I.1. Description of first aid measures	First-aid measures general	
Full text of H-phrases: see section 16 I.2. Mixture Vi applicable SECTION 4: First aid measures		
STUT SE 3, H336 STUT SE 3, H336 STUT SE 3, H336 Stut se section 16 3.2. Mixture Not applicable		
Full text of H-phrases: see section 16 5.2. Mixture		
Full text of H-phrases: see section 16		
5101 SE 3, H336		
	Water	<= 25.0 STOT SE 3, H336

#### Hand Sanitizer Isopropyl - 75%

5.1.2. For emergency res			
Protective equipment		vapors.	ction. Avoid breathing dust, fume, gas, mist, spray,
Emergency procedures		Ventilate area.	
5.2. Environmental prec	cautions		
Prevent entry to sewers and pu	ublic waters. Notify a	uthorities if liquid enters sewers or publ	ic waters.
3.3. Methods and mater	rial for containment	and cleaning up	
Methods for cleaning up		Soak up spills with inert solids, such a spillage. Store away from other mater	is clay or diatomaceous earth as soon as possible. Collect ials.
6.4. Reference to other	sections		
See Heading 8. Exposure cont	trols and personal pr	otection.	
SECTION 7: Handling a	and storage		
7.1. Precautions for saf	e handling		
Additional hazards when proce	essed :	Handle empty containers with care be	cause residual vapors are flammable.
Precautions for safe handling		smoking and when leaving work. Prov of vapor. No open flames. No smoking	s with mild soap and water before eating, drinking or ide good ventilation in process area to prevent formation g. Use only non-sparking tools. Avoid breathing dust, nly outdoors or in a well-ventilated area.
Hygiene measures		Wash hands thoroughly after handling	1.
7.2. Conditions for safe	storage, including	any incompatibilities	
Fechnical measures			I static electricity should be followed. Ground/bond se explosion-proof electrical, lighting, Ventilation
Storage conditions		Keep only in the original container in a	a cool, well ventilated place away from : Ignition sources, oof place. Keep container tightly closed.
ncompatible products		Strong bases. Strong acids.	
ncompatible materials		Sources of ignition. Direct sunlight. He	eat sources.
	controls/persor	al protection	
	3	al protection	
3.1. Control parameters Isopropyl Alcohol (67-63-0) ACGIH	ACGIH TWA (ppr	n)	200 ppm
B.1.         Control parameters           Isopropyl Alcohol (67-63-0)         ACGIH           ACGIH         ACGIH	5	n)	200 ppm 400 ppm
3.1. Control parameters Isopropyl Alcohol (67-63-0) ACGIH	ACGIH TWA (ppr	n)	
B.1.         Control parameters           Isopropyl Alcohol (67-63-0)         ACGIH           ACGIH         ACGIH	ACGIH TWA (ppr ACGIH STEL (pp	n) m)	400 ppm
3.1. Control parameters Isopropyl Alcohol (67-63-0) ACGIH ACGIH ACGIH	ACGIH TWA (ppr ACGIH STEL (pp Remark (ACGIH)	n) m) ) (mg/m²)	400 ppm Eye & URT irr; CNS impair
Isopropyl Alcohol (67-63-0) ACGIH ACGIH ACGIH OSHA	ACGIH TWA (ppr ACGIH STEL (pp Remark (ACGIH) OSHA PEL (TWA	n) m) ) (mg/m²)	400 ppm Eye & URT irr; CNS impair 980 mg/m <sup>a</sup>
Control parameters           Isopropyl Alcohol (67-63-0)           ACGIH           ACGIH           ACGIH           OSHA	ACGIH TWA (ppr ACGIH STEL (pp Remark (ACGIH) OSHA PEL (TWA	n) m) ) (mg/m²)	400 ppm Eye & URT irr; CNS impair 980 mg/m <sup>a</sup>
S.1.         Control parameters           Isopropyl Alcohol (67-63-0)         ACGIH           ACGIH         ACGIH           ACGIH         OSHA           OSHA         OSHA	ACGIH TWA (ppr ACGIH STEL (pp Remark (ACGIH) OSHA PEL (TWA OSHA PEL (TWA	n) m) ) (mg/m²)	400 ppm Eye & URT irr; CNS impair 980 mg/m <sup>a</sup>
Control parameters     Isoproy/ Alcohol (67-63-0)     ACGIH     ACGIH     ACGIH     OSHA     OSHA     OSHA     S.2     Exposure controls     Personal protective equipment	ACGIH TWA (ppr ACGIH STEL (pp Remark (ACGIH) OSHA PEL (TWA OSHA PEL (TWA	n) m) ) (mg/m²) ) (ppm)	400 ppm Eye & URT irr; CNS impair 980 mg/m <sup>a</sup>
Control parameters     Sopropyl Alcohol (67-63-0)     ACGIH     ACGIH     ACGIH     ACGIH     OSHA     OSHA     S.2     Exposure controls     resonal protective equipment     tand protection	ACGIH TWA (ppr ACGIH STEL (pp Remark (ACGIH) OSHA PEL (TWA OSHA PEL (TWA	n) m) ) (mg/m*) ) (ppm) Avoid all unnecessary exposure.	400 ppm Eye & URT irr; CNS impair 980 mg/m <sup>a</sup>
B.1. Control parameters     Isoporoy/ Alcohol (87-63-0)     ACGIH     ACGIH     ACGIH     ACGIH     OSHA     OSHA     OSHA     S.2. Exposure controls Personal protective equipment Hand protection Respiratory protection	ACGIH TWA (ppr ACGIH STEL (pp Remark (ACGIH) OSHA PEL (TWA OSHA PEL (TWA	n) m) ) (mg/m <sup>4</sup> ) ) (ppm) Avoid all unnecessary exposure. Wear protective gloves. Chemical gogles or safety glasses. Where exposure through inhalation m recommended.	400 ppm Eye & URT irr; CNS impair 980 mg/m³ 400 ppm ay occur from use, respiratory protection equipment is
I.1. Control parameters     Isoporpyl Alcohol (87-63-0)     ACGIH     ACGIH     ACGIH     ACGIH     OSHA     OSHA     OSHA     S.2. Exposure controls     Personal protective equipment     Hand protection     sepiratory protection     Personal protection     Dither Information	ACGIH TWA (ppr ACGIH STEL (pp Remark (ACGIH) OSHA PEL (TWA OSHA PEL (TWA	n) m) ) (mg/m*) ) (ppm) Avoid all unnecessary exposure. Wear protective gloves. Chemical gogies or safety glasses. Where exposure through inhalation m recommended. Do not eat, drink or smoke during use	400 ppm Eye & URT irr; CNS impair 980 mg/m³ 400 ppm ay occur from use, respiratory protection equipment is
b.1. Control parameters     Isopropyl Alcohol (67-63-0)     ACGIH     ACGIH     ACGIH     ACGIH     OSHA     OSHA     OSHA     State     Stat	ACGIH TWA (ppr ACGIH STEL (pp Remark (ACGIH) OSHA PEL (TWA OSHA PEL (TWA OSHA PEL (TWA CSHA CSHA CSHA CSHA CSHA CSHA CSHA CSHA	n) m) ) (mg/m*) ) (ppm) Avoid all unnecessary exposure. Wear protective gloves. Chemical goggies or safety glases. Chemical goggies or safety glases. Chemical goggies or safety glases. De not eat, drink or smoke during use poperties	400 ppm Eye & URT irr; CNS impair 980 mg/m³ 400 ppm ay occur from use, respiratory protection equipment is
Control parameters     Isoporop/ Alcohol (67-63-0)     ACGIH     ACGIH     ACGIH     ACGIH     ACGIH     OSHA     OSHA     OSHA     State     Sersonal protective equipment     Hand protection     Sepiratory protection     Dther information     SECTION 9: Physical a	ACGIH TWA (ppr ACGIH STEL (pp Remark (ACGIH) OSHA PEL (TWA OSHA PEL (TWA OSHA PEL (TWA OSHA PEL (TWA COSHA PEL	n) m) )) (mg/m³) )) (mg/m³) )) (mg/m³) )) (mg/m³) Avoid all unnecessary exposure. Wear protective gloves. Chemical gogies or safety glasses. Where exposure through inhalation m recommended. Do not eat, drink or smoke during use opportios	400 ppm Eye & URT irr; CNS impair 980 mg/m³ 400 ppm ay occur from use, respiratory protection equipment is
L.1. Control parameters     Isopropyl Alcohol (67-63-0)     ACGIH     ACGIH     ACGIH     ACGIH     OSHA     OSHA     OSHA     S.2. Exposure controls     rersonal protective equipment     dand protection     reprotection     reprotection     Steprotoction     Dither Information     SECTION 39. Physical 14	ACGIH TWA (ppr ACGIH STEL (pp Remark (ACGIH) OSHA PEL (TWA OSHA PEL (TWA OSHA PEL (TWA OSHA PEL (TWA I I I I I I I I I I I I I I I I I I I	n) m) ) (mg/m²) ) (ppm) Avoid all unnecessary exposure. Wear protective gloves. Chemical gogles or safety glasses. Where exposure through inhalation m recommenda. Do not eat, drink or smoke during use pperfies mical properties Liquid	400 ppm Eye & URT irr; CNS impair 980 mg/m³ 400 ppm ay occur from use, respiratory protection equipment is
I.1 Control parameters     Isoporopyl Alcohol (67-63-0)     ACGIH     ACGIH     ACGIH     ACGIH     ACGIH     CSHA     CSHA	ACGIH TWA (ppr ACGIH STEL (pp Remark (ACGIH) OSHA PEL (TWA OSHA PEL (TWA OSHA PEL (TWA OSHA PEL (TWA OSHA PEL (TWA I I I I I I I I I I I I I I I I I I I	n) m) ) (mg/m²) ) (mg/m²) ) (ppm) Avoid all unnecessary exposure. Wear protective gloves. Chemical gogies or safety glasses. Where exposure through inhalation m recommende. Do not eat, drink or smoke during use <b>operties</b> Liquid Colorders liquid.	400 ppm Eye & URT irr; CNS impair 980 mg/m³ 400 ppm ay occur from use, respiratory protection equipment is
L.1. Control parameters     Isoporpyl Alcohol (87-63-0)     ACGIH     ACGIH     ACGIH     ACGIH     ACGIH     OSHA     OSHA     OSHA     S.2. Exposure controls     rersonal protective equipment     dand protection     vep notection     Respiratory protection     Stepritory	ACGIH TWA (ppr ACGIH STEL (pp Remark (ACGIH) OSHA PEL (TWA OSHA PEL (TWA OSHA PEL (TWA OSHA PEL (TWA Cosha PEL	n)	400 ppm Eye & URT irr; CNS impair 980 mg/m³ 400 ppm ay occur from use, respiratory protection equipment is
Control parameters     Isopropyl Alcohol (67-63-0)     ACGIH     ACGIH     ACGIH     OSHA     OSHA     OSHA     Separate protective equipment     Hand protection     Eye protection     Eyeprotection     Dyther information     SECTION 9; Physical a	ACGIH TWA (ppr ACGIH STEL (pp Remark (ACGIH) OSHA PEL (TWA OSHA PEL (TWA OSHA PEL (TWA OSHA PEL (TWA CoSHA COSHA COSH	n) m) ) (mg/m²) ) (mg/m²) ) (ppm) Avoid all unnecessary exposure. Wear protective gloves. Chemical gogies or safety glasses. Where exposure through inhalation m recommende. Do not eat, drink or smoke during use <b>operties</b> Liquid Colorders liquid.	400 ppm Eye & URT irr; CNS impair 980 mg/m³ 400 ppm ay occur from use, respiratory protection equipment is

#### Hand Sanitizer Isopropyl - 75%

cording to Federal Register / Vol. 77, No. 58 / M	nday, March 26, 2012 / Rules and Regulations
H	: No data available
Melting point	: No data available
reezing point	: -88 °C ; -126.2 °F
oiling point	: 82.3 °C ; 180.1 °F
lash point	: 12 °C ; 53.6 °F closed cup
elative evaporation rate (butyl acetate=1)	: 2.3
lammability (solid, gas)	: No data available
xplosion limits	: 2 - 12.7 vol %
xplosive properties	: No data available
xidizing properties	: No data available
apor pressure	: 45.4 mm Hg at 25°C
elative density	: 0.79
Relative vapor density at 20 °C	: 2.1
pecific gravity / density	: 0.785 g/cm <sup>3</sup> (at 20 °C)
Aolecular mass	: 60.1 g/mol
Solubility	: Soluble in water.
.og Pow	: 0.05 (at 25 °C)
uto-ignition temperature	: 399 °C ; 750.2 °F
ecomposition temperature	: No data available
/iscosity	: 2.04 cP at 25° C
/iscosity, kinematic	No data available
/iscosity, dynamic	: No data available
	. No data available
.2. Other information	
ECTION 10: Stability and react	: 99.95 % /ity
/OC content SECTION 10: Stability and react 0.1. Reactivity No additional information available	
<b>ECTION 10: Stability and react</b> 0.1. Reactivity lo additional information available	
<b>SECTION 10: Stability and react</b> 0.1. Reactivity lo additional information available 0.2. Chemical stability	vity
SECTION 10: Stability and react 0.1. Reactivity lo additional information available 0.2. Chemical stability lighly flammable liquid and vapor. May for	v <b>ity</b> flammable/explosive vapor-air mixture.
SECTION 10: Stability and react 0.1. Reactivity to additional information available 0.2. Chemical stability tighly flammable liquid and vapor. May for	v <b>ity</b> flammable/explosive vapor-air mixture.
SECTION 10: Stability and react 0.1. Reactivity to additional information available 0.2. Chemical stability lighty flammable liquid and vapor. May for 0.3. Possibility of hazardous reacti tot estabilished.	v <b>ity</b> flammable/explosive vapor-air mixture.
SECTION 10: Stability and react to additional information available 0.2. Chemical stability lighty fammable liquid and vapor. May for 0.3. Possibility of hazardous react iot established. 0.4. Conditions to avoid	v <b>ity</b> nfammable/explosive vapor-air mixture. ns
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SECTION 10: Stability and react 0.1. Reactivity Io additional information available 0.2. Chemical stability lighly fammable liquid and vapor. May for 0.3. Possibility of hazardous react 10 setablished. 0.4. Conditions to avoid birect sunight. Extremely high or low temp 0.5. Incompatible materials 10 torogatible materials 10 torogatible materials 10 torogatible decomposition pro- me. Carbon monoxide. Carbon dioxde. N EECTION 11: Toxiccological Infor 11. Information on toxicological el cude toxicly Isopropyl Alcohol (67:63-0) Lip50 oral rat Lip50 inhaltion tat (mg/l)	vity  Ifammable/explosive vapor-air mixture.  s  ratures. Open flame.  ucts ay release flammable gases. mation ccts  i Not classified  5050 mg/kg 4055 mg/kg 4055 mg/kg 72.6 mg/kg/(4) (Exposure time: 4 h)
SECTION 10: Stability and react 0.1. Reactivity lo additional information available 0.2. Chemical stability lighly fammable liquid and vapor. May for 0.3. Possibility of hazardous reacti lot established. 0.4. Conditions to avoid Direct smight. Extremely high or low temp 0.5. Incompatible materials Strong acids. Strong bases. 0.6. Hazardous decomposition pro- ume. Carbon monoxide. Carbon dixide. In SECTION 11: Toxicological infor 1.1. Information on toxicological effort loss of rat Loss of rat Loss of rat Loss of rat Loss of rat (mg)) ATE US (crai)	vity         n fammable/explosive vapor-air mixture.         ns         ratures. Open fame.         ucts         ay release flammable gases.         mation         ects         : Not classified         5050 mg/kg         4056 mg/kg         7.2.6 mg/kdh. (Exposure time: 4 h)         6050.00 mg/kg body weight
ECTION 10: Stability and react 0.1. Reactivity lo additional information available 0.2. Chemical stability liighly fammable liquid and vapor. May for 0.3. Possibility of hazardous react li ot estabilshed. 0.4. Conditions to avoid lirect sunight. Extremely high or low temp 0.5. Incompatible materials litrong adds. Strong bases. 0.5. Hazardous decomposition pro me. Carbon monoxide. Carbon diodes. h SECTION 11: Toxicological info 11. Information on toxicological el cude toxicly LD50 oral rat LD50 oral rat LD50 oral rat LD50 oral rat LD50 (real)	vity
SECTION 10: Stability and react 0.1. Reactivity lo additional information available 0.2. Chemical stability lighly fammable liquid and vapor. May for 0.3. Possibility of hazardous reacti lot established. 0.4. Conditions to avoid Direct smight. Extremely high or low temp 0.5. Incompatible materials Strong acids. Strong bases. 0.6. Hazardous decomposition pro- ume. Carbon monoxide. Carbon dixide. In SECTION 11: Toxicological infor 1.1. Information on toxicological effort loss of rat Loss of rat Loss of rat Loss of rat Loss of rat (mg)) ATE US (crai)	vity         n fammable/explosive vapor-air mixture.         ns         ratures. Open fame.         ucts         ay release flammable gases.         mation         ects         : Not classified         5050 mg/kg         4056 mg/kg         7.2.6 mg/kdh. (Exposure time: 4 h)         6050.00 mg/kg body weight

04/19/2020

#### Hand Sanitizer Isopropyl - 75%

EN (English US)

Hazard labels (DOT)		3 - Flammable liquid	
acking group (DOT)		II - Medium Danger	
OT Packaging Non Bulk (49 CFR 173.xxx)		202	
OT Packaging Bulk (49 CFR 173.xxx)	5	242	
OT Special Provisions (49 CFR 172.102)		(31HZ1). Additional F kPa at 50 C (1.1 bar a T4 - 2.65 178.274(d)( TP1 - The maximum of following: Degree of fi	Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite lequirement: Only liquids with a vapor pressure less than or equal to 110 112 ZP, or 310 ket at 55 C (13 bart at 131 F) are authorized. ) Normal: metal to the second secon
OT Packaging Exceptions (49 CFR 173.xxx)	5	4b;150	
OT Quantity Limitations Passenger aircraft/rail 9 CFR 173.27)		5 L	
OT Quantity Limitations Cargo aircraft only (49 FR 175.75)		60 L	
OT Vessel Stowage Location		passenger vessel carr passengers, or one pa	by be stowed "on deck" or "under deck" on a cargo vessel and on a ying a number of passengers limited to not more than the larger of 25 ssenger per each 3 m of overall vessel length; rand (iii) "On deck only" on which the number of passengers specified in paragraph (k)(2)(i) of this
mergency Response Guide (ERG) Number		129	
Other information		No supplementary info	ormation available.
DG			
to additional information available			
ransport by sea			
JN-No. (IMDG)		1219	
roper Shipping Name (IMDG)		ISOPROPANOL (ISO	PROPYL ALCOHOL)
Class (IMDG)		3 - Flammable liquids	
Packing group (IMDG)		II - substances preser	ting medium danger
Air transport			
JN-No. (IATA)		1219	
Proper Shipping Name (IATA)		Isopropanol	
Class (IATA)		3 - Flammable Liquids	i
Packing group (IATA)		II - Medium Danger	
ECTION 15: Regulatory information	1		
5.1. US Federal regulations			
Isopropyl Alcohol (67-63-0)			
Listed on the United States TSCA (Toxic Substa Subject to reporting requirements of United Stat	and tes	es Control Act) invento SARA Section 313	bry
SARA Section 313 - Emission Reporting		1.0 notif	% (only if manufactured by the strong acid process, no supplier ication)
15.2. International regulations			
Isopropyl Alcohol (67-63-0)			
Listed on the Canadian DSL (Domestic Substar	nce	s List)	
WHMIS Classification	Ĩ	Class B Division 2 - Fl	ammable Liquid
			bdivision B - Toxic material causing other toxic effects

## Hand Sanitizer Isopropyl - 75%

erious eye damage/irritation	: Causes serious eye irritation.
	: Causes senous eye imitation. : Not classified
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity Carcinogenicity	: Not classified
•	. Not dassing
Isopropyl Alcohol (67-63-0) IARC group	3 - Not classifiable
• •	· Not classified
Reproductive toxicity	
Specific target organ toxicity (single exposure)	: May cause drowsiness or dizziness.
Specific target organ toxicity (repeated exposure)	: Not classified
Aspiration hazard	: Not classified
Potential Adverse human health effects and symptoms	: Based on available data, the classification criteria are not met.
Symptoms/injuries after inhalation	: May cause drowsiness or dizziness.
Symptoms/injuries after eye contact	: Causes serious eye irritation.
SECTION 42: Ecological information	
SECTION 12: Ecological information	
12.1. Toxicity	
Isopropyl Alcohol (67-63-0)	
LC50 fish 1	9640 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])
EC50 Daphnia 1	13299 mg/l (Exposure time: 48 h - Species: Daphnia magna)
LC50 fish 2	11130 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])
2.2. Persistence and degradability	
Isopropyl Alcohol (67-63-0)	
Persistence and degradability	Not established.
12.3. Bioaccumulative potential	
Isopropyl Alcohol (67-63-0)	
Log Pow	0.05 (at 25 °C)
Bioaccumulative potential	Not established.
2.4. Mobility in soil	
No additional information available	
12.5. Other adverse effects	
Other information	: Avoid release to the environment.
SECTION 13: Disposal consideration	15
13.1. Waste treatment methods	
Waste disposal recommendations	<ul> <li>Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.</li> </ul>
Additional information	: Handle empty containers with care because residual vapors are flammable.
Ecology - waste materials	: Avoid release to the environment.
SECTION 14: Transport information	
Department of Transportation (DOT)	
n accordance with DOT	
Transport document description	: UN1219 Isopropanol, 3, II
JN-No.(DOT)	: UN1219
Proper Shipping Name (DOT)	: Isopropanol
	: 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120
Transport hazard class(es) (DOT)	
Transport hazard class(es) (DOT)	

#### Hand Sanitizer Isopropyl - 75%

Safety Data Sheet according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

## EU-Regulations No additional information available

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- No additional information available National regulations Isopropyl Alcohol (97-33-0) Listed on the ASC3 (Austinian Inventory of Chemical Substances) Produced or Imported in China) Listed on the Japanese ENSC (Stating & New Chemical Substances) Inventory Listed on the Japanese ENSC (Stating & New Chemical Substances) inventory Listed on the Koran ECL (Existing & New Chemical Substances) Listed on the Koran ECL (Existing Chemicas) List) Listed on NZIoC (New Zealand Inventory of Chemicals) Listed on the Corandian IDL (Ingredient Disclosure List) Listed on the Canadian IDL (Ingredient Disclosure List) Listed on the Canadian IDL (Ingredient Disclosure List) Listed on the Canadian IDL (Ingredient Oisclosure List) Listed on Turkish inventory of chemical
- 15.3. US State regulations Isopropyl Alcohol (67-63-0) State or local regulations

04/09/2020

EN (English US)

U.S. - Massachusetts - Right To Know List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List U.S. - Pennsylvania - RTK (Right to Know) List

#### SECTION 16: Other information

Revision date Other information None. Full text of H-phrases: Eye Irrit. 2A Flam. Liq. 2 STOT SE 3 H225 H319 H336

Serious eye damageleye irritation Category 2A Flammable liquids Category 2 Specific target organ toxizity (single exposure) Category 3 Highly flammable liquid and vapor Causes serious eye irritation May cause drowsiness or dizziness

SDS US (GHS HazCom 2012)

04/19/2020

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Effective date : 01.08.2015	Page 1 of
Нус	drochloric Acid,ACS
SECTION 1 : Identification of the substance	/mixture and of the supplier
Product name :	Hydrochloric Acid,ACS
Manufacturer/Supplier Trade name:	
Manufacturer/Supplier Article number:	S25358
Recommended uses of the product and uses	s restrictions on use:
Manufacturer Details:	
AquaPhoenix Scientific 9 Barnhart Drive, Hanover, PA 17331	
Supplier Details:	
Fisher Science Education 15 Jet View Drive, Rochester, NY 14624	
Emergency telephone number:	
Fisher Science Education Emergency Teleph	ione No.: 800-535-5053
SECTION 2 : Hazards identification	
Carsolfication of the substance or mixture:	single exposure, category 3
Corr. Skin 1B	
orr. Skin 1B ye Damage 1	
Corr. Skin 1B Gye Damage 1	
Corr. Skin 1B iye Damage 1 ITOT. SE 3	
Corr. Skin 18 Gye Damage 1 STOT. SE 3 Signal word :Danger	
Corr. Skin 18 iye Damage 1 TOT. SE 3 <b>iggnal word</b> :Danger <b>Hazard statements:</b> Hay be corrosive to metals	
Corr. Metais 1 Corr. Skin 18 Eye Damage 1 Stort. SE 3 Signal word :Danger Hazard statements: May be corrosive to metais Causes severe skin burns and eye damage	

May cause respiratory irritation Precautionary statements: if medical advice is needed, have product container or label at hand Keep out of reach of children Read label before use Near later before use Use only outdoors or in a well-ventilated area Wear protective gloves/protective clothing/eye protection/face protection Keep only in ariginal container Do not get in eyes, on skin, or on clothing Wash skin thoroughly after handling IF SWALLOWED: Rinse mouth. Do NOT induce vomiting

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#### Safety Data Sheet according to 29CFR1910/1200 and GHS Rev. 3 Effective date : 01 08 2015 Page 3 of 8 Hydrochloric Acid,ACS minutes.Remove contact lenses while rinsing.Continue rinsing eyes during transport to hospital

After swallowing: Rinse mouth thoroughly. Do not induce vomiting. Have exposed individual drink sips of water. Immediately seek medical attention

#### Most important symptoms and effects, both acute and delayed:

ost important symptoms and effects, both acute and delayed: Inhalation may cause irritation to nose and upper respiratory tract, ulceration, coughing, chest tightness and shortness of breath. Higher concentrations cause tachypnoea, pulmonary oedema and suffocation. Ingestion may cause corrosion of lips, mouth, oesophagus and stomach, dysphagia and vomiting Pain, eye ulceration, conjunctival initiation, cataractas and glaucoma may occur following eye exposure. Prythem and skin irritation, as well as chemical burns to skin and mucous membranes may arise following skin exposure. Protential sequelae following ingestion of hydrachionic acid include perforation, scarring of the oesophagus or stomach and stricture formation causing dysphagia or gastric outlet obstruction. In some cases, RADS may develop, Respiratory symptoms may take up to 36 hours to develop. Symptoms of burning sensation, cough, wheezing, laryngitis, shortness of breath, spasm, inflammation, edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema. Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin.

#### Indication of any immediate medical attention and special treatment needed:

1101104 000 101	in a second second	 a manual altribuist	in a construction of the	

SECTION 5 : Firefighting measures	
Extinguishing media	
Suitable extinguishing agents: Use water, dry chemical, chemical foam, carbon dioxide, or alcohol-resista foam.	ent

#### For safety reasons unsuitable extinguishing agents: Special hazards arising from the substance or mixture:

Combustion products may include carbon oxides or other toxic vapors. If in contact with metals toxic fumes may be released. Advice for firefighters:

Protective equipment: Wear protective eyeware, gloves, and clothing. Refer to Section 8. Wear respiratory Additional information (precautions): Thermal decomposition can produce poisoning chlorine. Hydrochloric

acid reacts also with many organic materials with liberation of heat. Avoid inhaling gases, fumes, dust, mist, vapor, and aerosols. Avoid contact with skin, eyes, and clothing.

#### SECTION 6 : Accidental release measures

Personal precautions, protective equipment and emergency procedures: Ensure adequate ventilation. Ensure that air-handling systems are operational

#### **Environmental precautions**

Should not be released into environment. Prevent from reaching drains, sewer, or waterway.

#### Methods and material for containment and cleaning up:

Always obey local regulations. If necessary use trained response staff or contractor. Evacuate personnel to safe areas. Containerize for disposal. Refer to Section 13. Keep in suitable closed containers for disposal. Soak up with inert absorbent material and dispose of as hazardous waste. Cover spill with soda ash or calcium carbonate. Mix and add water to form slurry. Wear protective eyeware, gloves, and clothing. Refer to Section 8. Reference to other sections:

#### SECTION 7 : Handling and storage

	Page
Hydrochloric Acid,ACS	California de Cal
off immediately all contaminated clothing. Rinse sl	in with water/shower

Safety Data Sheet

**IF INHALE** IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing Immediately call a POISON CENTER or doctor/physician

Immenuately call a PUDUM LENTER OF OOCDO//phySician Specific treatment (see supplemental first align instructions on this label) Wash contaminated clothing before reuse. Absorb spillage to prevent material damage Store in a well ventilated place. Keep container tightly closed Store locked up

Effective

IF ON SKIN

Store in corrosive resistant stainless steel container with a resistant inner liner Dispose of contents and container to an approved waste disposal plant

Other Non-GHS Classification



SECTION 3 : Composition/information on ingredients

Ingredients:		
CA5 7647-01-0	Hydrochlaric Acid, ACS	30-50 %
CAS 7732-18-5	Water	50-70 %

#### SECTION 4 : First aid measures

scription of first aid measures

After inhalation: Move exposed individual to fresh air, Loosen clothing as necessary and position individual in a comfortable position. Seek medical attention if irritation or coughing persists. After skin contact: Wash affected area with soap and water. Immediately remove contaminated clothing and

shoes. Rinse thoroughly with plenty of water for at least 15 minutes. Immediately seek medical att After eye contact: Protect unexposed eye. Flush thoroughly with plenty of water for at least 15

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#### Safety Data Sheet according to 29CFR1910/1200 and GHS Rev. 3 Effective date: 01.08.2015 Hydrochloric Acid,ACS

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#### Precautions for safe handling:

Prevent formation of aerosols. Never use hot water and never add water to the acid.Do not allow contact between hydrochloric acid, metal, and organics.Follow good hygiene procedures when handling chemical materials. Refer to Section 8. Prevent contact with skin, eyes, and clothing. Follow proper disposal methods. Refer to Section 13. Do not ead, drink, smoke, or use personal products when handling chemical substances. Use only in well ventilated areas.Avoid splashes or spray in enclosed areas.

#### Conditions for safe storage, including any incompatibilities:

Store in a cool location. Keep away from food and beverages. Protect from freezing and physical damage. Store away from incompatible materials. Provide ventilation for containers, Keep container tightly sealed. Containers for hydrochloric acid must be made from corrosion resistant materials: glass, polyethylene, polypropylene, polyvinyl chloride, carbon steel lined with rubber or ebanite.

SECTION 8 : Exposure controls/personal protection



7647-01-0, Hydrachloric Acid, ACGIH: 2 ppm Ceiling 7647-01-0, Hydrachloric Acid, NIOSH: 5 ppm Ceiling; 7 mg/m3 Ceiling

Not required index minimized information of use, where this assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. When necessary use NIOSH approved breathing equipment.

Select glove material impermeable and resistant to the substance. Select glove material based on rates of diffusion and degradation. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Use proper glove removal technique without touching outer surface. Avoid skin contact with used gloves. Wear protective clothing.

7647-01-0, Hydrochlonc Acia, NIUSH: 3 ppm Cening: / mgma Seming Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapor and mists below the applicable workplace exposure limits (Occupational Exposure Limits-OELS) indicated above. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of handling. Not required under normal conditions of use. Where risk assessment ehems sin-antiving memiators are anononate use a full-face particle Appropriate Engineering controls:

Respiratory protection:

Protection of skin:

**Control Parameters:** 

Eye protection:

Faceshield (8-inch minimum). Tightly fitting safety goggles Perform routine housekeeping. Wash hands before breaks and immediately after handling the product. Avoid contact with skin, eyes, and clothing. Before rewearing wash contaminated clothing. General hygienic measures:

#### **SECTION 9 : Physical and chemical properties**

Appearance (physical state,color):	Clear, colorless liquid,	Explosion limit lower: Explosion limit upper	Non Explosive Non Explosive
Odor:	Pungent ador	Vapor pressure:	5.7mmHg @ 0C
Odor threshold	0.3 - 14.9 mg/m3	Vapor density:	1.27 (Air=1)
pH-value:	< 1	Relative density:	1.0 - 1.2

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Effective date : 01.08.2015

Melt Boili rang Flas cup) Evap Flam (solid Dens Hydr

ting/Freezing point:	- 74 C	Solubilities:	Miscible
ing point/Boiling je:	81.5 - 110 C	Partition coefficient (n- octanol/water):	Not Determined
h point (closed	Not Applicable	Auto/Self-ignition temperature:	Not Determined
poration rate:	>1.00	Decomposition temperature:	Not Determined
nmability d,gaseous):	non combustible	Viscosity:	a. Kinematic:Not Determined b. Dynamic: Not Determined

SECTION 10 : Stability and reactivity

Reactivity:Reacts violently with bases and is corrosive.

Chemical stability:No decomposition if used and stored according to specifications

ce of water forming flammable explosive gas

Chemical stability:No decomposition if used and stored according to specifications. Possible hazardous reactions:Attacks many metals in the presence of water forming flammable explosive (hydrogen).Reacts violently with oxidants forming toxic gas (chlorine). Conditions to avoid:incompatible materials. Incompatible materials:Bases. Amines, Aikali metals, Metals, permanganates (potassium permanganate), Flourine, Metal acetylides. Hexatihium dislicide. Hazardous decomposition products:Hydrogen chloride gas.Carbon oxides.

#### SECTION 11 : Toxicological information

Acute Toxicity:		
Inhalation:	7647-01-0	LD50 Rat 3124 ppmyhour
Oral	7647-01-0	LD50 Rat 238 - 277 mg/kg
Dermal:	7647-01-0	LD50 Rabbit >5010 mg/kg
Chronic Toxicit	y: No additional information.	18
Corrosion Irrita	tion:	
Dermal:	7647-01-0	Skin - rabbit Result: Causes burns.
Ocular:	7647-01-0	Eyes - rabbit Result: Corrosive to eyes
Sensitization:		No additional information.
Single Target 0	irgan (STOT):	7647-01-0: The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation.
Numerical Mea	sures:	No additional information.
Carcinogenicity		No additional information.
Mutagenicity:		No additional information.

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#### Safety Data Sheet according to 29CFR1910/1200 and GHS Rev. 3 Hydrochloric Acid, ACS

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CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act)

7647-01-0 Hydrochloric Acid 5000 lbs

#### Proposition 65 (California):

Effective date : 01.08.2015

Chemicals known to cause cancer:

None of the ingredients is listed

Chemicals known to cause reproductive toxicity for females

None of the ingredients is listed

Chemicals known to cause reproductive toxicity for males: None of the ingredients is listed

Chemicals known to cause developmental toxicity

None of the ingredients is listed

Canada

Canadian Domestic Substances List (DSL): All ingredients are listed. Canadian NPRI Ingredient Disclosure list (limit 0.1%):

None of the ingredients is listed

Canadian NPRI Ingredient Disclosure list (limit 1%): 7647-01-0 Hydrochloric Acid

SECTION 16 : Other information

This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and the This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and the SOS contains all the information required by the Controlled Products Regulations. Note:. The responsibility to provide a safe workplace remains with the user. The user should consider the health hazards and safety information contained herein as a guide and should take those precautions required in an individual operation to instruct employees and develop work practice procedures for a safe work environment. The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by the use of this material. It is the responsibility of the user to comply with all applicable laws and regulations applicable to this material.

#### GHS Full Text Phrases

Abbreviations and acronyms: IMDC: International Maritime Code for Dangerous Goods PNEC: Predicted No-Effect Concentration (REACH) CRR: Code of Pederal Regulations (USA) SARA: Superfund Amendments and Reauthorization Act (USA) SARA: Supertund Amenoments and reasultionization AC (USA) RCRA: Resource Conservation and Recovery Act (USA) TSCA: Toxic Substances Control Act (USA) NPRI: National Pollutant Release Inventory (Canada) DOT: US Department of Transportation IATA: International Air Transport (Canada) All Cassification and Labelling of Chemicals ACCIL: American Conference of Concenserate Instructure Livering Con-ACGIH: American Conference of Governmental Industrial Hygienists CAS: Chemical Abstracts Service (division of the American Chemical Society) NFPA: National Fire Protection Association (USA)

### Safety Data Sheet

	Page 6 of 8
н	lydrochloric Acid,ACS
Reproductive Toxicity:	No additional information.
SECTION 12 : Ecological information	
The second s	
The second s	a affinis (Mosquito fish) - 282 mg/l - 96 h (Hydrochloric acid)
7647-01-0: Toxicity to fish LC50 - Gambusi	a affinis (Mosquito fish) - 282 mg/l - 96 h (Hydrochloric acid)
7647-01-0: Toxicity to fish LC50 - Gambusi Persistence and degradability: Bioaccumulative potential:	a affinis (Mosquito fish) - 282 mg/l - 96 h (Hydrochloric acid)
7647-01-0: Toxicity to fish LC50 - Gambusi Persistence and degradability: Bioaccumulative potential:	a affinis (Mosquito fish) - 282 mg/l - 96 h (Hydrochloric acid)
Ecotoxicity 7647-01-0: Toxicity to fish LC50 - Gambusi Persistence and degradability: Bioaccumulative potential: Mobility in soil: Other adverse effects:	a affinis (Mosquito fish) - 282 mg/l - 96 h (Hydrochloric acid)

#### Waste disposal recommendations

Do not allow product to reach sewage system or open water. It is the responsibility of the waste generator to Lo not allow product to reach sewage system or open water. It is the responsibility of the waste generator to properly characterize all waste materials according to applicable regulatory entities (US 40CFR26.11). Contact a licensed professional waste disposal service to dispose of this material. Dispose of empty containers as unused product. Product or containers must not be disposed together with household garbage. Chemical waste generators must altermine whether a discarded chemical is classified as a hazerdous waste. Chemical waste generators must also consult local, regional, and national hazerdous waste regulations, Ensure complete and accurate advectification. accurate classification.

## SECTION 14 : Transport information

UN-Nu	mber
178	19
UN pre	oper shipping name
HY	DROCHLORIC ACID
Trans	port hazard class(es)
-	Class: 8 Corrosive substances
Packin	ig group:ll
Enviro	nmental hazard:
Transp	port in bulk:
Specia	I precautions for user:

SECTION 15 : Regulatory information

#### United States (USA)

U

SARA Section 311/312 (Specific toxic chemical listings): Acute SARA Section 313 (Specific toxic chemical listings) 7647-01-0 Hydrochloric Acid RCRA (hazardous waste code): None of the ingredients is listed TSCA (Toxic Substances Control Act)

All ingredients are listed.

Created by Global Safety Management, Inc. -Tel: 1-813-435-5161 - www.gsmsds.com

# Safety Data Sheet according to 29CFR1910/1200 and GHS Rev. 3 Hydrochloric Acid, ACS

Page 8 of 8

HMIS: Hazardous Materials Identification System (USA) WHMIS: Workplace Hazardous Materials Information System (Canada) DNEL: Derived No-Effect Level (REACH)

Effective date : 01.08.2015 Last updated : 03.20.2015

Effective date : 01.08.2015



NFPA health hazard NFPA fire hazard NFPA reactivity

HMIS III Rating Health

Flammability

Physical

1/1/2017

Nitrogen

Substance/mixture

CAS number/other identifiers CAS number

Chemical name

Other means of identification

Product code

Ingredient nan

in this section.

Eye contact

Inhalation

Nitrogen

 Exposure could cause irritation but only minor residual injury even if no treatment is given. 0 - Materials that will not bur 0 - Normally stable, even under fire e and are not reactive with water.

0 Minimal Hazard 0 Minimal Hazard

EN (English

Section 3. Composition/information on ingredients

: nitrogen (dot); nitrogen gas; Nitrogen NF, Nitrogen FG

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting

100

Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelds. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.

Sector Sector

Substance

nitrogen

: 001040

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures Description of necessary first aid measures

: 7727-37-9

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

2 Moderate Hazard - Temporary or minor injury may occur



Nickel Bare Wire Safety Data Sheet

> CAS number 7727-37-9



	Nitrogen an Air Liquide company
Section 1. Identific	cation
GHS product identifier	: Nitrogen
Chemical name Other means of	: nitrogen : nitrogen (dot); nitrogen gas; Nitrogen NF, Nitrogen FG
identification	: hidogen (dol), hidogen gas, Nidogen NF, Nidogen FG
Product type	: Gas.
Product use	: Synthetic/Analytical chemistry.
Synonym SDS #	: nitrogen (dot); nitrogen gas; Nitrogen NF, Nitrogen FG : 001040
Supplier's details	: Airgas USA, LLC and its affiliates
	259 North Radnor-Chester Road Suite 100
	Radnor, PA 19087-5283
	1-610-687-5253
24-hour telephone	: 1-866-734-3438
Section 2. Hazards	
OSHA/HCS status	<ul> <li>This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).</li> </ul>
Classification of the	: GASES UNDER PRESSURE - Compressed gas
substance or mixture	SIMPLE ASPHYXIANTS
GHS label elements	
Hazard pictograms	
	$\sim$
Signal word	· Worping
Signal word Hazard statements	: Warning : Contains gas under pressure; may explode if heated.
	May displace oxygen and cause rapid suffocation.
Precautionary statements	
General	: Read and follow all Safety Data Sheets (SDS'S) before use. Read label before use. Keep out of reach of children. If medical advice is needed, have product container or
	label at hand. Close valve after each use and when empty. Use equipment rated for
	cylinder pressure. Do not open valve until connected to equipment prepared for use. Use a back flow preventative device in the piping. Use only equipment of compatible
	materials of construction.
Prevention	: Not applicable.
Response Storage	Not applicable.     Protect from sunlicht. Store in a well-ventilated place.
Storage Disposal	<ul> <li>Protect from sunlight. Store in a well-ventilated place.</li> <li>Not applicable.</li> </ul>
Supplemental label	: Keep container tightly closed. Use only with adequate ventilation. Do not enter storage
elements	areas and confined spaces unless adequately ventilated.
Hazards not otherwise classified	: In addition to any other important health or physical hazards, this product may displace
	oxygen and cause rapid suffocation.
	oxygen and cause rapid surrocation.
	oxygen and cause rapid surrocation.
Data of insus/Data of multion	
Date of issue/Date of revision	oxygen and cause rapid surrocation. :4/30/2019 Date of previous issue :4/30/2019 Version :1.03 1/1
Date of issue/Date of revision	
Date of issue/Date of revision	
	: 4/30/2019 Date of previous issue : 4/30/2019 Version : 1.03 1/1
Nitrogen	:4/30/2019 Date of previous issue :4/30/2019 Version :1.03 1/1 d measures : In case of inhalation of decomposition products in a fire, symptoms may be delayed.
Nirogen Section 4. First aid Notes to physician	:4/30/2019 Date of previous issue :4/30/2019 Version :1.03 1/1 <b>d measures</b> : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
Nitrogen Section 4. First aic Notes to physician Specific treatments	: 4/30/2019 Date of previous issue : 4/30/2019 Version : 1.03 1/1 d measures : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours. : No specific treatment.
Nirogen Section 4. First aid Notes to physician	: 4/30/2019 Date of previous issue : 4/30/2019 Version : 1.03 1/1 d measures : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours. : No specific treatment. : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should we are an appropriate mask or
Nitrogen Section 4. First aic Notes to physician Specific treatments	2302019 Date of previous issue : 4/302019 Version : 1.03 1/1      24/302019 Date of previous issue : 4/302019 Version : 1.03 1/1      24/302019 Date of previous issue : 4/302019 Version : 1.03 1/1      4/302019 Date of previous issue : 4/302019 Version : 1.03      4/302019 Date of previous issue : 4/302019 Version : 1.03      4/302019 Date of previous issue : 4/302019 Version : 1.03      4/302019 Date of previous issue : 4/302019 Version : 1.03      4/302019 Date of previous issue : 4/302019      4/302019 Version : 1.03      4/302019       4/302019      4/3020
Nilrogen Section 4. First aid Notes to physician Specific treatments Protection of first-aiders	:4302019       Date of previous issue       :4302019       Version       :1.03       1/1         :4302019       Date of previous issue       :4302019       Version       :1.03       1/1         :4302019       Date of previous issue       :4302019       Version       :1.03       1/1         :4302019       Date of previous issue       :4302019       Version       :1.03       1/1         :4302019       Date of previous issue       :4302019       Version       :1.03       1/1         :4302019       Date of previous issue       :4302019       Version       :1.03       1/1         :4302019       Date of previous issue       :4302019       Version       :1.03       1/1         :4302019       Date of previous issue       :4302019       Version       :1.03       1/1         :5402019       Date of previous issue       :4302019       Version       :1.03       1/1         :5402019       Date of previous issue       :4302019       Version       :1.03       1/1         :5402019       Date of previous issue       :4302019       Version       :1.03       1/1         :5402019       Date of previous issue       :4302019       Date of previous issue       :1.03       :1.03
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Nilrogen Section 4. First aid Notes to physician Specific treatments Protection of first-aiders See toxicological information Section 5. Fire-figl	:4302019       Date of previous issue       :4302019       Version       :1.03       1/1         :4302019       Dete of previous issue       :4302019       Version       :1.03       1/1         :4302019       Dete of previous issue       :4302019       Version       :1.03       1/1         :4302019       Dete of previous issue       :4302019       Version       :1.03       1/1         :4302019       Dete of previous issue       :4302019       Version       :1.03       1/1         :4302019       Dete of previous issue       :4302019       Version       :1.03       1/1         :4302019       Dete of previous issue       :4302019       Version       :1.03       1/1         :4302019       Dete of previous issue       :4302019       Version       :1.03       1/1         :4302019       Dete of previous issue       :4302019       Version       :1.03       1/1         :4302019       Dete of previous issue       :4302019       Version       :1.03       1/1         :4302019       Dete of previous issue       :4302019       Version       :1.03       1/1         :4302019       Dete of previous issue       :4302019       Version       :1.03       1/1 <td< td=""></td<>
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Nitrogen Section 4. First aid Notes to physician Specific treatments Protection of first-aiders See toxicological information Section 5. Fire-figl Extinguishing media Suitable extinguishing	24302019 Date of previous issue :4302019 Version :1.03 1/1      24 measures     32 In case of inhalation of decomposition products in a fire, symptoms may be delayed.     The exposed person may need to be kept under medical surveillance for 48 hours.     10 sopecific treatment.     10 No action shall be taken involving any personal risk or without suitable training. If it is     suspected that fumes are still present, the rescuer should wear an appropriate mask or     self-continued breakting apparatus. It may be dangerous to the person providing aid to     give mouth-to-mouth resuscitation.     In (Section 11)  hting measures
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Narogen Section 4. First aid Notes to physician Specific treatments Protection of first-aiders See toxicological informatior Section 5. Fire-figl Extinguishing media Suitable extinguishing media Unsuitable extinguishing media Specific hazards arising from the chemical Hazardous thermal	24302019 Date of previous issue :4/302019 Version :1.03 1/1      4 measures     5 In case of inhalation of decomposition products in a fire, symptoms may be delayed.     The exposed person may need to be kept under medical surveillance for 48 hours.     10 specific treatment.     No action shall be taken involving any personal risk or without suitable training. If it is     suspected that tumes are still present, the rescuer should wear an appropriate mask or     give mouth-to-mouth resuscitation.     In (Section 11)     hting measures     Use an extinguishing agent suitable for the surrounding fire.     None known.     Contains gas under pressure. In a fire or if heated, a pressure increase will occur and     the container may burst or explode.     Decomposition products the following materials:
Nirropen Section 4. First aid Notes to physician Specific treatments Protection of first-aiders See toxicological information Section 5. Fire-figl Extinguishing media Suitable extinguishing media Unsuitable extinguishing media Specific hazards arising from the chemical	2 202019 Date of previous issue : 4/30/2019 Version : 1.03 1/1      2 202019 Date of previous issue : 4/30/2019 Version : 1.03 1/1      2 202019     2 20201     2 2020     2 20201
Nirogen Section 4. First aid Notes to physician Specific treatments Protection of first-aiders See toxicological information Section 5. Fire-fig! Extinguishing media Suitable extinguishing media Unsuitable extinguishing media Specific hazards arising from the chemical Hazardous thermal decomposition products	:4'302019       Date of previous issue       :4'302019       Version       :1.03       1/1         :4'302019       Date of previous issue       :4'302019       Version       :1.03       1/1         :4'302019       Date of previous issue       :4'302019       Version       :1.03       1/1         :5'       In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.       :No specific treatment.       :No saction shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or give mouth-to-mouth resuscitation.       in (Section 11)         htting measures       :       Use an extinguishing agent suitable for the surrounding fire.         :       Wore known.       :       Contains gas under pressure. In a fire or if heated, a pressure increase will occur and the container may burst or explode.         :       Decomposition products may include the following materials: nitrogen oxides
Narogen Section 4. First aid Notes to physician Specific treatments Protection of first-aiders See toxicological informatior Section 5. Fire-figl Extinguishing media Suitable extinguishing media Unsuitable extinguishing media Specific hazards arising from the chemical Hazardous thermal	:4302019       Date of previous issue       :4302019       Version       :1.03       1/1         :4302019       Date of previous issue       :4302019       Version       :1.03       1/1         :1       In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.       No specific treatment.       :No section shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or give mouth-to-mouth resuscitation.       in (Section 11)         hting measures       :       Use an extinguishing agent suitable for the surrounding fire.         :       None known.       :       Contains gas under pressure. In a fire or if heated, a pressure increase will occur and the container may burst or explode.         :       Decomposition products may include the following materials: nitrogen oxides       :         :       Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable
Nitrogen Section 4. First aid Notes to physician Specific treatments Protection of first-aiders See toxicological information Section 5. Fire-figi Extinguishing media Suitable extinguishing media Specific hazards arising from the chemical Hazardous thermal decomposition products Special protective actions	:4302019       Date of previous lasue       :4302019       Version       :1.03       1/1         :4302019       Dete of previous lasue       :4302019       Version       :1.03       1/1         :4302019       Dete of previous lasue       :4302019       Version       :1.03       1/1         :4302019       Dete of previous lasue       :4302019       Version       :1.03       1/1         :4302019       Dete of previous lasue       :4302019       Version       :1.03       1/1         :50       action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or get/contained breathing appartus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.         in (Section 11)       https://doi.org/doi
Narogen Section 4. First aid Notes to physician Specific treatments Protection of first-aiders See toxicological information Section 5. Fire-figl Extinguishing media Suitable extinguishing media Unsuitable extinguishing media Specific hazards arising from the chemical Hazardous thermal decomposition products Special protective actions for fire-fighters	:4302019       Date of previous issue       :4302019       Version       :1.03       1/1         d measures       :       In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.       : No specific treatment.         : No specific treatment.       :       No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or give mouth-to-mouth resuscitation.         in (Section 11)       https://docs.org/docs.or
Nitrogen Section 4. First aid Notes to physician Specific treatments Protection of first-aiders See toxicological information Section 5. Fire-figi Extinguishing media Suitable extinguishing media Specific hazards arising from the chemical Hazardous thermal decomposition products Special protective actions	:4302019       Date of previous issue       :4302019       Version       :1.03       17         :4302019       Date of previous issue       :4302019       Version       :1.03       17         :4302019       Date of previous issue       :4302019       Version       :1.03       17         :4302019       Date of previous issue       :4302019       Version       :1.03       17         :4302019       Date of previous issue       :4302019       Version       :1.03       17         :5       No specific treatment.       :       No scion shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing appartus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.         in (Section 11)       https://doc.org
Nirogen Section 4. First aid Notes to physician Specific treatments Protection of first-eiders See toxicological information Section 5. Fire-figit Extinguishing media Unsuitable extinguishing media Unsuitable extinguishing Media Specific hazards arising from the chemical Hazardous thermal decomposition products Special protective actions for fire-fighters Special protective equipment for fire-fighters	2 202019 Date of previous issue : 4302019 Version : 1.03 17     2 202019 Date of previous issue : 4302019 Version : 1.03 17     2 202019     2 20201     2 20
Nirogen Section 4. First aid Notes to physician Specific treatments Protection of first-eiders See toxicological information Section 5. Fire-figl Extinguishing media Suitable extinguishing media Unsuitable extinguishing media Unsuitable extinguishing media Unsuitable extinguishing media Specific hazards arising from the chemical Hazardous thermal decomposition products Special protective actions for fire-fighters Special protective equipment for fire-fighters Section 6. Accider	:4302019       Date of previous issue       :4302019       Version       :1.03       1/1         :4302019       Date of previous issue       :4302019       Version       :1.03       1/1         :       In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical survellance for 48 hours.       : No specific treatment.       : No scion shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breating appartus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.         in (Section 11)       https://doc.org
Nirrogen Section 4. First aid Notes to physician Specific treatments Protection of first-aiders See toxicological information Section 5. Fire-figl Extinguishing media Unsuitable extinguishing media Unsuitable extinguishing media Unsuitable extinguishing media Specific hazards arising from the chemical Hazardous thermal decomposition products Special protective actions for fire-fighters Special protective aquipment for fire-fighters Section 6. Accider Parsonal pracautions, protec	2 202019 Date of previous issue : 4302019 Version : 1.03 17     2 202019 Date of previous issue : 4302019 Version : 1.03 17     2 202019     2 20201     2 20
Ntrogen Section 4. First aid Notes to physician Specific treatments Protection of first-aiders See toxicological information Section 5. Fire-figl Extinguishing media Suitable extinguishing media Specific hazards arising from the chemical decomposition products Special protective actions for fire-fighters Special protective equipment for fire-fighters Section 6. Accider Personal precautions, protec	:4302019       Date of previous issue       :4302019       Version       :1.03       1/1         :4       In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.       : No specific treatment.         : No specific treatment.       : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing appartus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.         in (Section 11)       htting measures         : Use an extinguishing agent suitable for the surrounding fire.         : None known.         : Ocntains gas under pressure. In a fire or if heated, a pressure increase will occur and the container may burst or explode.         : Decomposition products may include the following materials: nitrogen oxides         : Promptly isolate the scene by removing all persons from the vicinity of the incident if threa is a fire. No action shall be taken involving any personal risk or without suitable training. Contact suppire immediately for specialist advice. Move containers from fire area if this can be done without first. Use water spray to keep fire-exposed containers cool.         : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (ISCBA) with a full face-piece operated in positive pressure mode.

Skin contact Ingestion

Most important symptoms/effects, acute and delayed

Potential acute nealtr	I Effects
Eye contact	: Contact with rapidly expanding gas may cause burns or frostbite.
Inhalation	<ul> <li>At very high concentrations, can displace the normal air and cause suffocation from lack of oxygen.</li> </ul>
Skin contact	: Contact with rapidly expanding gas may cause burns or frostbite.
Frostbite	: Try to warm up the frozen tissues and seek medical attention.
Ingestion	: As this product is a gas, refer to the inhalation section.
Over-exposure signs	symptoms
Eye contact	: No specific data.
Inhalation	: No specific data.
Skin contact	: No specific data.
Ingestion	: No specific data.

: As this product is a gas, refer to the inhalation section.

Indication of immediate medical attention and special treatment needed, if necessary

Date of issue/Date of revision	: 4/30/2019	Date of previous issue	: 4/30/2019	Version : 1.03	2/11
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Methods and materials for containment and cleaning up

For emergency responders

Small spill Large spill requipment. If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Immediately contact emergency personnel. Stop leak if without risk. Immediately contact emergency personnel. Stop leak if without risk. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Environmental precautions : Ensure emergency procedures to deal with accidental gas releases are in place to avoid contamination of the environment. Inform the relevant authorities if the product has caused environmental politulor (severs, waterways, soil or air).

3/11

Nitrogen					
Section 7. Handli	ng and st	torage			
Precautions for safe handli Protective measures	: Put on ap pressure. respirator equipmen Protect cy hand truck Avoid co	propriate personal protect Avoid breathing gas. Us when ventilation is inade trated for cylinder pressu- inders from physical dan k for cylinder movement. Intact with eyes, skin and e hazardous.	e only with adequat quate. Do not punct ire. Close valve afte nage; do not drag, re	e ventilation. Wear ture or incinerate col er each use and whe oll, slide, or drop. Us	appropriate ntainer. Use en empty. se a suitable
Advice on general occupational hygiene	: Eating, dr handled, s drinking a	inking and smoking shoul stored and processed. W nd smoking. Remove co ating areas. See also Se	orkers should wash ntaminated clothing	hands and face bef and protective equip	ore eating, oment before
Conditions for safe storage including any incompatibilities	Store awa incompati protection Cylinder to	ay from direct sunlight in a ble materials (see Section cap in place, and firmly semperatures should not e d until ready for use. See	dry, cool and well- 10). Cylinders sho ecured to prevent fa xceed 52 °C (125 °F	ventilated area, away build be stored uprigh alling or being knock -). Keep container t	r from t, with valve ted over. ightly closed
Section 8. Expos	ure contr	ols/personal pi	otection		
Control parameters Occupational exposure lin	<u>nits</u>				
Ingredient name			Exposure lin	nits	
Nitrogen			ACGIH TLV ( Depletion [As	United States, 3/20 sphyxiant].	17). Oxygen
Appropriate engineering controls	other eng	with adequate ventilation. ineering controls to keep nded or statutory limits.			
Environmental exposure controls	they comp cases, fur	s from ventilation or work bly with the requirements ne scrubbers, filters or er cessary to reduce emissio	of environmental pro gineering modificati	otection legislation. ons to the process e	In some
Individual protection meas	ures				
Hygiene measures	eating, sn Appropria Wash cor	nds, forearms and face the noking and using the lava te techniques should be un taminated clothing before are close to the workstation	tory and at the end o used to remove pote reusing. Ensure th	of the working period intially contaminated	l. clothing.
Eye/face protection	assessme gases or o	ewear complying with an a ent indicates this is neces dusts. If contact is possib sment indicates a higher	sary to avoid exposi- le, the following pro	ure to liquid splashes tection should be wo	s, mists, orn, unless
Skin protection Hand protection	worn at al necessary during use noted that glove mar	-resistant, impervious glo I times when handling ch /. Considering the param a that the gloves are still r the time to breakthrough nufacturers. In the case c time of the gloves canno	emical products if a eters specified by the etaining their protect for any glove mater f mixtures, consistir	risk assessment ind ae glove manufactur tive properties. It sh rial may be different ng of several substan	icates this is er, check nould be for different
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Nitrogen					
Section 10. Stability and reactivity					
Reactivity	: No specific test data related to reactivity available for this product or its ingredients.				
Chemical stability	: The product is stable.				
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.				
Conditions to avoid	: Do not allow gas to accumulate in low or confined areas.				
Incompatible materials	: No specific data.				
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.				

#### Hazardous polymerization : Under normal conditions of storage and use, hazardous polymerization will not occur. Section 11. Toxicological information

Section 11. Loxic	-				
Information on toxicologic Acute toxicity	al effects				
Not available.					
Irritation/Corrosion Not available.					
Sensitization Not available.					
Mutagenicity Not available.					
Carcinogenicity Not available.					
Reproductive toxicity Not available.					
Teratogenicity Not available.					
Specific target organ toxi Not available.	city (single exp	osure)			
Specific target organ toxi Not available.	city (repeated e	exposure)			
Aspiration hazard Not available.					
Information on the likely routes of exposure	: Not availa	ble.			
Potential acute health effer					
Eye contact		ith rapidly expanding gas			
Inhalation	: At very hig of oxygen		place the normal air a	nd cause suffocation fron	1 lack
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Section 8. Exposu	re controls/personal protection			
Body protection	: Personal protective equipment for the body should be selected based on the task bein performed and the risks involved and should be approved by a specialist before handling this product.			
Other skin protection	<ul> <li>Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by specialist before handling this product.</li> </ul>			
Respiratory protection	specialist before handling this product. The gas can cause asphyniation without warning by replacing the oxygen in the air. Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. If operating conditions cause high gas concentrations to be produced or any recommended or statutory exposure limit is exceeded, use an air-fed respirator or self-contained breathing apparatus. Respirator must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.			
Section 9. Physica	I and chemical properties			
Appearance				
Physical state	: Gas. [Compressed gas.]			
Color	: Colorless.			
Odor	: Odorless.			
Odor threshold	: Not available.			
рН	: Not available.			
Melting point	: -210.01°C (-346°F)			
Boiling point	: -196°C (-320.8°F)			
Critical temperature	: -146.95°C (-232.5°F)			
Flash point	: [Product does not sustain combustion.]			
Evaporation rate	: Not available.			
Flammability (solid, gas)	: Not available.			
Lower and upper explosive (flammable) limits	: Not available.			
Vapor pressure	: Not available.			
Vapor density	: 0.967 (Air = 1) Liquid Density@BP: 50.46 lb/ft3 (808.3 kg/m3)			
Specific Volume (ft 3/lb)	: 13.8889			
Gas Density (lb/ft 3)	: 0.072			
Relative density	: Not applicable.			
Solubility	: Not available.			
Solubility in water	: Not available.			
Partition coefficient: n- octanol/water	: 0.67			
Auto-ignition temperature	: Not available.			
Decomposition temperature	: Not available.			
Viscosity	: Not applicable.			
	: Not available.			
Flow time (ISO 2431) Molecular weight	: 28.02 g/mole			

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Skin contact	: Conta	act with rapidly expanding gas may cause burns or frostbite.
Ingestion	: As thi	is product is a gas, refer to the inhalation section.
Symptoms related to the phy	ical, ch	emical and toxicological characteristics
Eye contact	: No sp	pecific data.
Inhalation	: No sp	pecific data.
Skin contact	: No sp	pecific data.
Ingestion	: No sp	pecific data.
Delayed and immediate effect	s and al	so chronic effects from short and long term exposure
Short term exposure		
Potential immediate effects	: Not a	vailable.
Potential delayed effects	: Not a	vailable.
Long term exposure		
Potential immediate effects	: Not a	vailable.
Potential delayed effects	: Not a	vailable.
Potential chronic health eff Not available.	<u>cts</u>	
General	: No kr	nown significant effects or critical hazards.
Carcinogenicity		nown significant effects or critical hazards.
Mutagenicity	: No kr	nown significant effects or critical hazards.
Teratogenicity	: No kr	nown significant effects or critical hazards.
Developmental effects	: No kr	nown significant effects or critical hazards.
Fertility effects	: No kr	nown significant effects or critical hazards.

## Section 12. Ecological information

Toxicity Not available.

Persistence and degradability Not available.

Bioaccumulative potential			
Product/ingredient name	LogPow	BCF	Potential
Nitrogen	0.67	-	low

	: Not available.	Mobility in soil Soil/water partition coefficient (Koc)
--	------------------	---

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## Section 12. Ecological information

Other adverse effects No known significant effects or critical hazards

## Section 13. Disposal considerations

The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal eliopilation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sever unless fully compliant with the requirements of all authorities with jurisdiction. Emply Arigas-owned pressure vessels should be returned to Arigas. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Emply containers or liners may retain some product residues. Do not puncture or incinerate container. container

	0011	tannor.					
Section 14. Transport information							
	DOT	TDG	Mexico	IMDG	IATA		
UN number	UN1066	UN1066	UN1066	UN1066	UN1066		
UN proper shipping name	NITROGEN, COMPRESSED	NITROGEN, COMPRESSED	NITROGEN, COMPRESSED	NITROGEN, COMPRESSED	NITROGEN, COMPRESSED		
Transport hazard class(es)	2.2	2.2	2.2	2.2	2.2		
Packing group	-	-	-	-	-		
Environmental hazards	No.	No.	No.	No.	No.		

"Refer to CFR 49 (or authority having jurisdiction) to determine the information required for shipment of the

Additional information		
DOT Classification	ł	Limited quantity Yes. Quantity limitation Passenger aircraft/rail: 75 kg. Cargo aircraft: 150 kg.
TDG Classification	:	Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.13-2.17 (Class 2). Explosive Limit and Limited Quantity Index 0.125 Passenger Carrying Road or Rail Index 75
IATA	ŝ	Quantity limitation Passenger and Cargo Aircraft: 75 kg. Cargo Aircraft Only: 150 kg.
Special precautions for user	:	Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.
Transport in bulk according to Annex II of MARPOL and the IBC Code	:	Not available.

Nitrogen	
Section 15. Re	gulatory information
Taiwan	: This material is listed or exempted.
Thailand	: Not determined.
Turkey	: Not determined.
United States	: This material is listed or exempted.
Viet Nam	: Not determined.
Section 16. Ot	her information
Hazardous Material Inf	formation System (U.S.A.)
Health	/ 0
Flammability	0

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Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on SDSs or products leaving a facility under 28 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.



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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

#### Procedure used to derive the classification

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	Classif	cation		Justification			
GASES UNDER PRESSUF SIMPLE ASPHYXIANTS	GASES UNDER PRESSURE - Compressed gas SIMPLE ASPHYXIANTS						
History					_		
Date of printing	: 4/30/2019						
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Date of previous issue	: 4/30/2019						
Version	: 1.03						
Key to abbreviations	BCF = Bio GHS = Glo IATA = Int IBC = Inte IMDG = In LogPow =	ernational Air Transport A rmediate Bulk Container ternational Maritime Dan logarithm of the octanol/	ssociation gerous Goods vater partition coeffi	nd Labelling of Chemicals cient of Pollution From Ships, 1973			
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J.S. Federal regulations	1	TSCA 8(a) CDR Exempt/Partial exemption: This material is listed or exempted.							
Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs)	:	Not listed							
Clean Air Act Section 602 Class I Substances	1	Not listed							
Clean Air Act Section 602 Class II Substances	1	Not listed							
DEA List I Chemicals (Precursor Chemicals)	1	Not listed							
DEA List II Chemicals (Essential Chemicals)	1	: Not listed							
SARA 302/304									
Composition/information	on	ingredients							
No products were found.									
SARA 304 RQ		Not applicable.							
SARA 311/312	1	Not applicable.							
Classification		Refer to Section 2: Hazards Identification of this SDS for classification of substance.							
	1								
State regulations									
Massachusetts		This material is listed.							
New York		This material is not listed.							
New Jersey		This material is listed.							
Pennsylvania	1	This material is listed.							
International regulations									
Chemical Weapon Conver Not listed.	ntio	h List Schedules I, II & III Chemicals							
Montreal Protocol (Annexe Not listed.	es A	<u>. B. C. E)</u>							
Stockholm Convention on Not listed.	Pe	rsistent Organic Pollutants							
Rotterdam Convention on Not listed.	Pri	or Informed Consent (PIC)							
UNECE Aarhus Protocol o Not listed.	n P	OPs and Heavy Metals							
Inventory list									
Australia		This material is listed or exempted.							
Canada		This material is listed or exempted.							
China		This material is listed or exempted.							
Europe	:	This material is listed or exempted.							
Japan	:	Japan inventory (ENCS): Not determined. Japan inventory (ISHL): Not determined.							
Malaysia		Not determined.							
New Zealand		This material is listed or exempted.							
Philippines		This material is listed or exempted.							
Republic of Korea		This material is listed or exempted.							

## Section 16. Other information

as modified by the Protocol of 1978. ("Marpol" = marine pollution) UN = United Nations

: Not available.

References Notice to reader

Nitroae

Nitroger

Notice to reason: To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

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# **Safety Data Sheet**

Nitrogen Liquid Red Ball Oxygen Co., Inc. P.O. Box 7316 Shreveport, LA 71137-7316 Phone: 318-425-3211 Fax: 318-425-6302 http://www.redballoxygen.com

#### Section 1: Product and Company Identification

Red Ball Oxygen Co., Inc. P.O. Box 7316 Shreveport, LA 71137-7316 Phone: 318-425-3211 Fax: 318-425-6302 http://www.redballoxygen.com

Product Code: Nitrogen Liquid

#### Section 2: Hazards Identification



Hazard Classification Aspiration Hazard (Category 1) Gases Under Pressure

Hazard Statements: Contains gas under pressure; may explode if heated May be fatal if swallowed and enters airways

Precautionary Statements

Response: Do NOT induce vomiting. If swallowed: Rinse mouth. Do NOT induce vomiting. Immediately call a poison center or doctor.

Storage: Protect from sunlight. Store in well-ventilated place. Store locked up.

Engineering Controls

Dispose of contents and/or container in accordance with applicable regulations

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Engineering Controls Handle only lully enclosed systems. Eye Protection Wear splash resistant safety goggles. Contact lenses should not be worn. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

General Hygiene considerations • Avoid breathing vapor or mist • Avoid contact with eyes and skin • Wash thoroughly after handling and before eating or drinking

Section 9: Physical and Chemical Properties

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Respiratory Protection

Respiratory protection may be needed for frequent or heavy

#### Section 3: Composition/Information on Ingredients

CAS # 7727-37-9

Chemical Substance	Chemical Family	Trade Names
NITROGEN, CRYOGENIC LIQUID	non-metallic	NITROGEN, REFRIGERATED LIQUID; NITROGEN, REFRIGERATED LIQUID, CRYOGENIC LIQUID; NITROGEN; NITROGEN (LIQUID); LIQUID NITROGEN; UN 1977

#### Section 4: First Aid Measures

	Eye Contact Ingestion		Inhalat	Inhalation			
Immediately flush with plenty of lukewarm water (105-115 F; 41-46 C). DO NOT USE HOT WATER. If warm water is not available, gently wrap affected parts in blankets. Get immediate medical attention.	If a large amount is swallowed, get medical attention.		If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.		For inhalatio consider oxygen.		
Section 5: Fire Fighting M	leasures						
Suitable Extinguishing Media			Products o Combustio		Protection of Firefig	phters	
Non-flammable. Use suitable extinguishing fire. Cylinders may rupture or explode if ex		ding	Non-flamma	able		protection may heavy exposure	
	Tord oron and dan	ventre			Precautions	Methods for	
Keep unnecessary people away, isolate ha	izard area and den	y entry.	No sig	nificant e	Precautions ffects from expected.		ssible without
Keep unnecessary people away, isolate ha Stay upwind and keep out of low areas. Methods for Cleanup Other Information N/A N/A	on	y entry.	No sig	nificant e	ffects from	Stop leak if po	ssible without
Keep unnecessary people away, isolate ha Stay upwind and keep out of low areas. Methods for Cleanup N/A Other Informatio N/A	on	y entry.	No sig	nificant e	ffects from	Stop leak if po	ssible without
N/A N/A Section 7: Handling and Handling	Storage		No sig contan	nificant e nination e	ffects from expected.	Stop leak if po personal risk.	ssible without
Keep unnecessary people away, lexite to Stay upwind and keep out of low areas.         Methods for Cleanup       Other Informatic N/A         N/A       N/A         Section 7: Handling and	Storage		No sig contan	nificant e nination e	ffects from xpected. Storn ge regulations: Keep	Stop leak if po personal risk.	ssible without
Keep unnecessary people away, isolate hs Stay upwind and keep out of low areas. Methods for Cleanup Other Informatic NA NA NA Section 7: Handling and Handling Store and handle in accordance with all cu	Storage	nd stand	No sig contan	nificant e nination e t to stora	ffects from xpected. Storn ge regulations: Keep	Stop leak if po personal risk.	ssible without
Keep unnecessary people away, isolate he Stay upwind and keep out of low areas. Methods for Cleanup Other Informatic N/A Other Informatic N/A Section 7: Handling and Handling Store and handle in accordance with all cu U.S. OSHA 29 CFR 1910.101.	Storage	nd stand	No sig contan	nificant e nination e t to stora	ffects from xpected. Storn ge regulations: Keep	Stop leak if po personal risk.	ssible without

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## Section 12: Ecological Information

Fate and Transport								
Eco toxicity	Persistence / Degradability	Bioaccumulation / Accumulation	Mobility in Environment					
Fish toxicity: Not available Invertibrate toxicity: Not available Algal toxicity: Not available	Not available	Not available	Not available					
Phyto toxicity: Not available Other toxicity: Not available								

#### Section 13: Disposal Considerations

Dispose in accordance with all applicable regulations.

#### Section 14: Transportation Information

U.S. DOT 49	CFR 172.	101					
Proper Shipping Name	ID Number	Hazard Class or Division	Packing Group	Labeling Requirements	Passenger Aircraft or Railcar Quantity Limitations	Cargo Aircraft Only Quantity Limitations	Additional Shipping Description
Nitrogen, refrigerated liquid	UN1977	2.2	Not applicable	2.2	75 kg or L	150 kg	N/A

 Canadian Transportation of Dangerous Goods

 Shipping Name
 UN Number
 Class
 Packing Group / Risk Group

 Nitrogen, refrigerated liquid
 UN1977
 2.2
 Not applicable

#### Section 15: Regulatory Information

U.S. Regulations

 CERCLA Sections
 SARA 355.30
 SARA 355.40

 Not regulated.
 Not regulated.
 Not regulated.

SARA 370.21

rv Stati

 Acute
 Chronic
 Fire
 Reactive
 Sudden Release

 Yes
 No
 No
 No
 Yes

SARA 372.65 Not regulated.

OSHA Process Safety Not regulated.

State Regula CA Proposition 65 Not regulated.

National Inve

Canadian Regulations WHMIS Classification

US Inventory (TSCA) TSCA 12b Export Notification Canada Inventory (DSL/NDSL) Listed on inventory. Not listed. Not determined.

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Physical	State	App	pearance	Color	Change in Appearance Physical Form Odd		n Odor	Taste					
Gas		Clea	ar	Colorless	N/A	N/A		Liquefied gas	Odorless	Tasteless			
Flash Po Not flamr		_	nmability available	Partition O	<b>v</b>		per Explosive Limits Lower Explosive L nflammable Nonflammable		e Limits				
Boiling Point	Freez Point		Vapor Pressure	Vapor Density	Specifi Gravity			pH	Odor Threshold	Evaporati Rate	on	Viscosity	
-321 F (-196 C)	-346 I 210 C		760 mmHg @ -196 C	0.967 (Air=1)	Not applica	ble 20 C		Not applicable	Not available	Not applicable		0.01787 cP @ 27 C	
Molecula Weight	ır	Molecular Density V			ght pei Ion		olatility by olume	Volatility	Solvent Solubility				
28.0134		N2		1.250 g/L	6 Not			00%	1	Soluble: So Soluble: alo		e: liquid ammo	nia Slight

Skin Protection

Wear appropriate protective, cold insulating

#### Section 10: Stability and Reactivity

Stability	Conditions to Avoid	Incompatible Materials
Stable at normal temperatures and press	ire. Stable at normal temperatures and pre	ssure. Metals, oxidizing materials
Hazardous Decomposition Products	Possibility of Hazardous Reactions	
	Will not polymerize.	

#### Section 11: Toxicology Information

Oral LD50	Dermal LD50	In	halation				
Not available	Not availa		Nausea, vomiting, difficulty breathing, headache, drowsiness, dizziness, tingling sensation, loss of coord convulsions, coma				
Eve Irritation	1	Skin In	ritation	Sensitization	_		
	te, blurred vision Blisters, frostbite			Difficulty breath	ing		
Frostbite blu	rred vision	Blisters	, frostbite	Difficulty breath	ing		
	£6						
Chronic E Carcinogeni		genicity	Reprod	uctive Effects	Deve	elopmental Effects	ſ

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#### Section 16: Other Information

NFPA Rating HEALTH=3 FIRE=0 REACTIVITY=0

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard

## **SAFETY DATA SHEET**



Propane

Section 1. Identif	cation
GHS product identifier	: Propane
Chemical name	: propane
Other means of identification	Propyl hydride; n-Propane; Dimethyl methane; Bottled gas; propane in gaseous state; propane liquefied, n-Propane; Dimethylmethane; Freon 290; Liquefied petroleum gas; Lpg; Propyl hydride; R 290; C3H8; UN 1075; UN 1978; A-108; Hydrocarbon propellant.
Product type	: Liquefied gas
Product use	: Synthetic/Analytical chemistry.
Synonym	Propyl hydride; n-Propane; Dimethyl methane; Bottled gas; propane in gaseous state; propane liquefied, n-Propane; Dimethylmethane; Freon 290; Liquefied petroleum gas; Lpg; Propyl hydride; R 290; C3H8; UN 1075; UN 1978; A-108; Hydrocarbon propellant.
SDS #	: 001045
Supplier's details	: Airgas USA, LLC and its affiliates 259 North Radnor-Chester Road Suite 100 Radnor, PA 19087-5263 1-610-687-5253
24-hour telephone	: 1-866-734-3438
Section 2. Hazard	s identification
OSHA/HCS status	: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Classification of the	: FLAMMABLE GASES - Category 1
substance or mixture GHS label elements	GASES UNDER PRESSURE - Liquefied gas
Hazard pictograms	
nazaru pierograma	
Signal word	: Danger
Hazard statements	: Extremely flammable gas. Contains gas under pressure; may explode if heated. May cause frostbite. May displace oxygen and cause rapid suffocation. May form explosive mixtures with air.
Precautionary statements	
General	: Read and follow all Safety Data Sheets (SDS'S) before use. Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand. Close valve after each use and when empty. Use equipment rated for cylinder pressure. Do not open valve until connected to equipment prepared for use. Use a back flow preventative device in the piping. Use only equipment of compatible materials of construction. Always keep container in upright position. Approach suspected leak area with caution.
Prevention	: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Response	: Leaking gas fire: Do not extinguish, unless leak can be stopped safely. In case of leakage, eliminate all ignition sources.
Storage	: Protect from sunlight. Store in a well-ventilated place.

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Section 2. Hazards identification Not applicable Hazards not otherwise : Liquid can cause burns similar to frostbite classified Section 3. Composition/information on ingredients Substand Substance/mixt **Chemical name** propane propaire Propyl hydrate: n-Propane; Dimethyl methane; Bottled gas; propane in gaseous state; propane liquefied, n-Propane; Dimethylmethane; Freon 290; Liquefied petroleum gas; Log: Propyl hydride; R 290; C3H8; UN 1075; UN 1978; A-108; Hydrocarbon propellant. Other means of identification 001045 Product code CAS number/other identifiers : 74-98-6 CAS number Ingredient name CAS number 100 Propane 74-98-6 Any concentration shown as a range is to protect confidentiality or is due to batch variation. There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting concentrations in this section. Occupational exposure limits, if available, are listed in Section 8. Section 4. First aid measures Description of necessary first aid measures Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs. Eve contact minutes. Get medical attention it irritation occurs. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, the bett or individual. Inhalation tie, belt or waistband. ue, beit of waistoano. Wash contaminated skin with soap and water. Remove contaminated clothing and shoes. To avoid the risk of static discharges and gas ignition, soak contaminated clothing theroughly with vater before removing it. Get medical attention if symptoms occur. In case of contact with liquid, warm frozen tissues slowly with lukewarm wate and get medical attention. Do not rub affected area. Wash clothing before reuse. Skin contact Clean shoes thoroughly before reuse. Clean shoes thoroughly before reuse. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if adverse health effects persist or are severe. Ingestion of liquid can cause burns similar to frostibite. If frostibite occurs, get medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, lie, belt or waishand. As this product rapidly becomes a gas when released, refer to the inhalation section. Ingestion Most important symptoms/effects, acute and delayed Potential acute health effects Eve contact Liquid can cause burns similar to frostbite

No known significant effects or critical hazards

Date of previous issue

frostbite.

Dermal contact with rapidly evaporating liquid could result in freezing of the tissues or

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Skin contact

Date of issue/Date of revision

Propane Section 4. First aid measures Try to warm up the frozen tissues and seek medical attention Frostbite Ingestion : Ingestion of liquid can cause burns similar to frostbite Over-exposure signs/symptoms Eye contact Adverse symptoms may include the following:, frostbite Inhalation No specific data. Skin contact Adverse symptoms may include the following:, frostbite Ingestion Adverse symptoms may include the following:, frostbite Indication of immediate medical attention and special treatment needed, if necessary Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. Notes to physician Specific treatments No specific treatment. No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Protection of first-aiders See toxicological information (Section 11) Section 5. Fire-fighting measures Extinguishing media Suitable extinguishing : Use an extinguishing agent suitable for the surrounding fire media Unsuitable extinguishing media : None known Contains gas under pressure. Extremely flammable gas. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapor/gas is heavier than air and will spread along the ground. Gas may accumulate in low or confined areas or travel a considerable distance to a source of lgnition and flash back, causing fire or explosion. Decomposition products may include the following materials: earbon divide. Specific hazards arising from the chemical Hazardous therma composition products carbon dioxide carbon monoxide Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Contact supplier immediately for specialist advice. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. If involved in fire, shut off flow immediately if it can be done without itsk. If this is impossible, withdraw from area and allow fire to burn. Fight fire from protected location or maximum possible distance. Eliminate all lightion sources if safe to do so. Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCAB) with a full face-piece operated in positive pressure mode. For incidents involving large quantities, thermally insulated undergarments and thick textile or leather gloves should be worn. Special protective actions for fire-fighters Special protective equipment for fire-fighters Section 6. Accidental release measures Personal precautions, protective equipment and emergency procedures A exclument and unregency processions A coldental relates pose a serious fire or explosion hazard. No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing gas. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective events. For non-emergency personnel equipment.

### Propane Section 6. Accidental release measures

For emergency responders	: If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non- emergency personnel".
Environmental precautions	: Ensure emergency procedures to deal with accidental gas releases are in place to avoid contamination of the environment. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
Methods and materials for co	ntainment and cleaning up
Small spill	: Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment.
Large spill	: Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.
Section 7. Handling	g and storage
Precautions for safe handling	
Protective measures	: Put on appropriate personal protective equipment (see Section 8). Contains gas under pressure. Do not get in eyes or on skin or clothing. Avoid breathing gas. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter is storage areas and confined spaces unless adequately ventilated. Do not puncture or incinerate container. Use equipment rated for cylinder pressure. Close valve after each use and when empty. Protect cylinders from physical damage; do not drag, roll, side, or drop. Use a suitable hand truck for cylinder movement. Use only non-sparing tools. Empty containers retain product residue and can be hazardous. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment.
Advice on general occupational hygiene	: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
Conditions for safe storage, including any incompatibilities	Store in accordance with local regulations. Store in a segregated and approved area. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Eliminate all ignition sources. Cylinders should be stored upright, with valve protection cap in place, and firmly secured to prevent falling or being knocked over. Cylinder temperatures should not exceed 52 °C (125 °F). Keep container tightly closed and sealed until ready for use. See Section 10 for incompatible materials before handling or use.

Control parameters

Ingredient name		Exposure limits
Propane		NIOSH REL (United States, 10/2016). TWA: 1800 mg/m³ 10 hours. TWA: 1000 ppm 10 hours. OSHA PEL (United States, 5/2018). TWA: 1800 mg/m³ 8 hours. TWA: 1000 ppm 8 hours. TWA: 1800 mg/m³ 8 hours. TWA: 1800 mg/m³ 8 hours. TWA: 1800 mg/m³ 8 hours. TWA: 1000 ppm 8 hours. ACGIH TLV (United States, 3/2019). Oxyger Depletion [Asphyxind]. Explosive potentia
ate of issue/Date of revision : 11/15	2020 Date of previous issue	: 10/5/2020 Version : 1.02 4/

,	I and chemical properties
Critical temperature	: 96.55°C (205.8°F)
Flash point	: Closed cup: -104°C (-155.2°F) Open cup: -104°C (-155.2°F)
Evaporation rate	: Not available.
Flammability (solid, gas)	: Extremely flammable in the presence of the following materials or conditions: open flames, sparks and static discharge and oxidizing materials.
Lower and upper explosive (flammable) limits	: Lower: 1.8% Upper: 8.4%
Vapor pressure	: 109 (psig)
Vapor density	: 1.6 (Air = 1)
Specific Volume (ft 3/lb)	: 8.6206
Gas Density (Ib/ft 3)	: 0.116 (25°C / 77 to °F)
Relative density	: Not applicable.
Solubility	: Not available.
Solubility in water	: 0.0244 g/l
Partition coefficient: n- octanol/water	: 1.09
Auto-ignition temperature	: 287°C (548.6°F)
Decomposition temperature	: Not available.
Viscosity	: Not applicable.
Flow time (ISO 2431)	: Not available.
Molecular weight	: 44.11 g/mole
Aerosol product	
Heat of combustion	: -46012932 J/kg
Section 10. Stabilit	y and reactivity
Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow gas to accumulate in low or confined areas.
Incompatible materials	: Oxidizers
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Hazardous polymerization	: Under normal conditions of storage and use, hazardous polymerization will not occur.

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Appropriate engineering controls	: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation other engineering controls to keep worker exposure to airborne contaminants below ar recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.
Environmental exposure controls	: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.
Individual protection meas	ures
Hygiene measures	: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
Eye/face protection	: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.
Skin protection	
Hand protection	Chemical-resistant, impervious gloves complying with an approved standard should be worn at all limes when handling chemical products if a risk assessment indicates this is necessary. If contact with the liquid is possible, insulated gloves suitable for low temperatures should be worn. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
Body protection	Personal protective equipment for the body should be selected based on the task bein performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti- static protective dothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.
Other skin protection	<ul> <li>Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by specialist before handling this product.</li> </ul>
Respiratory protection	: Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.
Thermal hazards	: If there is a risk of contact with the liquid, all protective equipment worn should be suitable for use with extremely low temperature materials.
Section 9. Physic	cal and chemical properties
Appearance	
Physical state	: Gas.
Color	: Colorless.
Odor	: Odorless.BUT MAY HAVE SKUNK ODOR ADDED.
Odor threshold	: Not available.
pH	Not available.
Melting point	: -187.6°C (-305.7°F)
Boiling point	: -42.1°C (-43.8°F)

Information on toxicologica	l effec	ts				
Acute toxicity						
Not available.						
Irritation/Corrosion						
Not available.						
Sensitization						
Not available.						
Mutagenicity Not available.						
Carcinogenicity						
Not available.						
Reproductive toxicity						
Not available.						
Teratogenicity						
Not available.						
Specific target organ toxic	itv (sir	ale expos	ure)			
Not available.						
Aspiration hazard						
Not available.						
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Section 11. Toxico	ological information				Section 14.	. Transpo	rt informatio	n		
Potential chronic health effe	-					рот	TDG	Mexico	IMDG	IATA
Not available.				-	UN number	UN1978	UN1978	UN1978	UN1978	UN1978
General Carcinogenicity	<ul> <li>No known significant effects or</li> <li>No known significant effects or</li> </ul>			-						
Carcinogenicity Mutagenicity	<ul> <li>No known significant effects or</li> <li>No known significant effects or</li> </ul>				UN proper shipping name	PROPANE S ALSO	E PROPANE	PROPANE SEE ALSO	PROPANE	PROPANE
Teratogenicity	: No known significant effects or				snipping name	PETROLEUN		PETROLEUM		
Developmental effects	: No known significant effects or					GASES, LIQUEFIED		GASES, LIQUEFIED		
Fertility effects	: No known significant effects or	r critical hazards.				EIGOLITIED		(propane)		
merical measures of toxic cute toxicity estimates ot available.	ity				Transport hazard class(es)	2.1	2.1	2.1	2.1	2.1
				-	Packing group Environmental	- No.	- No.	- No.	- No.	- No.
ection 12. Ecolog	gical information				hazards			determine the inform		
t available.				F	product."		aring janoaioaon/ t			
rsistence and degradabilit t available.	ty.				Additional inform DOT Classificat		Limited quantity Yes.			
oaccumulative potential oduct/ingredient name	LogPow	BCF	Potential	٦			Packaging instructi Passenger aircraft			
opane	1.09 -		low	-			Quantity limitation: F	orbidden.		
	·		•	_			Cargo aircraft Quantity limitation: 1	50 kg		
<u>bility in soil</u> bil/water partition pefficient (Koc)	: Not available.						Special provisions 19, T50	•		
er adverse effects	: No known significant effects or	r critical hazards.					For domestic transpo	rtation only, UN1075 m substitution is consiste	ay be substituted f	or the UN number
	sal considerations						papers, and emerger	icy response informatio	n. See 49 CFR 172	2.102 Special Provi
posal methods	<ul> <li>The generation of waste should of this product, solutions and all</li> </ul>						Containers of NON-O NON-ODORIZED or	DORIZED liquefied per NOT ODORIZED as of		
	requirements of environmental regional local authority requirer	I protection and waste dispose	sal legislation and any		TDO Olive 10	len	326(d), 330(c) and 3		no of the T-	lation of D-
	via a licensed waste disposal c the sewer unless fully complian Empty Airgas-owned pressure	contractor. Waste should no nt with the requirements of a	ot be disposed of untreated to all authorities with jurisdiction.		TDG Classificat	ion :	Goods Regulations: Explosive Limit and	per the following sectio 2.13-2.17 (Class 2). Limited Quantity Inde		tation of Dangerou:
	should be recycled. Incineration not feasible. This material and	on or landfill should only be o d its container must be dispos	considered when recycling is used of in a safe way. Empty				ERAP Index 3000 Passenger Carrying Passenger Carrying	Vessel Index 65 Road or Rail Index Fo	orbidden	
	containers or liners may retain container.	some product residues. Do	o not puncture or incinerate		IATA	:	Special provisions Quantity limitation			Cargo Aircraft Onl
							kg.			
					Special precautio	ons for user :	upright and secure. E	er's premises: always insure that persons tran		
				s			event of an accident	or spillage.		
							event of an accident	or spillage.		
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#### Section 16. Other information

Key to abbro

References

Other spec considerations

ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor GHS = Globally Harmonized System of Classification and Labelling of Chemicals IATA = International Air Transport Association IBC = Intermediate Bulk Container IBC – Interniteutate built Collitatiet MIDG = International Maritime Dangerous Goods LogPow = logarithm of the octanol/water partition coefficient MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution) UN = Uhited Nations Not available. Not available. The information below is given to call attention to the issue of "Naturally occurring radioactive materials". Although Radon-222 levels in the product represented by this MSDS do not present any direct Radon exposure hazard, customers should be aware the potential for Radon daughter build up within their processing systems, whatever the source of their product streams. Radon-222 is a naturally occurring radioactive gas which can be a contaminant in natural gas. During subsequent processing, Radon tends to be concentrated in Liquefied Petroleum Gas streams and in product streams having a similar boiling point range. Industry experience has shown that this product may contain small amounts of Radon-222 and its radioactive decay products, called Parton "tatubeter". The active I concentration of Parton-220 and taribactive durabeter

Radon "daughters". The actual concentration of Radon-222 and radioactive daughters reusor datagetters - in the calegories and the geographical source of the net adgress as in the delivered product is dependent on the geographical source of the net adgress storage time prior to delivery. Process equipment (1.e. lines, filters, pumps and reaction units) may accumulate significant levels of radioactive daughters and show a gamma units) may accumulate significant levels of radioactive daughters and show a gamma radiaton reading during operation. A potential external radiation hazard exists at or near any pipe valve or vessel containing a Radon enriched stream, or containing internal deposits of radioactive material due to the transmission of gamma radiation through its wall. Field studies reported in the literature have not shown any conditions that subject workers to cumulative exposures in excess of general population limits. Equipment emitting gamma radiation should be presumed to be internally contaminated with alpha emitting deary products which may be a hazard if inhaled or ingested. Protective equipment such as coveralls, gloves, and respirator (NIOSH/MHSA approved for high efficiency particulates and radionucides, or supplied air) should be worn by personnel entering a vessel or working on contaminated process equipment to prevent skin contamination, ingestion, or inhalation of any residues contamination. Airborne contamination may be minimized by handling scale and/or contaminated materials in a wet state. materials in a wet state

: 10/5/2020

Version : 1.02

**E**xonMobil

12/12

#### Notice to reader

To the best of To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Information contained internit. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Product Name: GASOLINE, UNLEADED AUTOMOTIVE Revision Date: 12 Apr 2016 Page 2 of 17

: 11/15/2020

Causes skin irritation. H336: May cause drowsiness or dizziness. H340: May cause genetic defects. H350: May cause cancer

Date of previous issue

#### Precautionary Statements:

te of issue/Date of revision

Precautionary Statements: P101: If medical advice is needed, have product container or label at hand. P102: Keep out of reach of children. P103: Read label before use P201: Obtain special instructions before use. P202: Do not handle until all safety precautions have been read and understood. P210: Keep away from heat/sparkatopen flames/hot surfaces. - No smoking. P233: Keep container tightly closed. P240: Ground / bond container and receiving equipment. P241: Use explosion-proof electrical, ventilating, and lighting equipment. P242: Use only non-sparking tools. P243: Take precautionary measures against static discharge. P2261: Avoid treathing mist / vapours. P264: Wash skin thoroughly after handling. P271: Use only non-sparking tools. P243: Take precaubonary measures against static discharge. P2261: Avoid treathing mist / vapours. P264: Wash skin thoroughly after handling. P271: Use only non-sparking tools. P243: Take precaubonary measures against static discharge. P263: Avoid treathing mist / vapours. P264: Wash skin thoroughly after handling. P271: Use only non-sparking tools. P273: Store lock of immediately all contaminated clothing. Rinse skin with vell-ventilated area. P273: Avoid release to the environment. P280: Wear protective glows/protective clothing/sey protection/face. Vol rel NHALED: Remove person to fresh air and keep comfortable for breathing. P308 + P313: IF exposed or concernet: Get medical advice/ attention. P312: Call a POISON CENTER or doctor/physician if you feel unwell. P331: Do NOT induce vorniting. P312: Hale POISON CENTER or doctor/physician if you feel unwell. P331: Do NOT induce vorniting. P312: Hale POISON CENTER or doctor/physician if you feel unwell. P331: Do NOT induce vorniting. P324: P331: If skin initiation occurs: Get medical advice/ attention. P362 + P364: Take off contaminated tothing and wash it before reuse. P370 + P378: In case of fire: Use water fog. foam, dry chemical or carbon dioxide (CO2) to extinguish. P391: Collect spillage.P403 + P233: Store in a

Contains: GASOLINE

Other hazard information:

HAZARD NOT OTHERWISE CLASSIFIED (HNOC): None as defined under 29 CFR 1910.1200.

## PHYSICAL / CHEMICAL HAZARDS

ALT CINEMICAL INACANDS Material can ecomulate static charges which may cause an ignition. Material can release vapors that readily form flammable mixtures. Vapor accumulation could flash and/or explode if ignited.

#### HEALTH HAZARDS

HIRPARSUS High-pressure injection under skin may cause serious damage. May be irritating to the eyes, nose, throat, and lungs. Exposure to benzene is associated with cancer (acute myeloid leukemia and myelodysplastic syndrome), damage to the blood-producing system, and serious blood disorders (see Sociar 11) (see Section 11).

#### ENVIRONMENTAL HAZARDS

Expected to b environment. be toxic to aquatic organisms. May cause long-term adverse effects in the aquatic

NFPA Hazard ID: HMIS Hazard ID:	Health: Health:		Flammability: Flammability:		Reactivity: Reactivity:	
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NOTE: This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks

Product Name: GASOLINE, UNLEADED AUTOMOTIVE Revision Date: 12 Apr 2016 Page 1 of 17

rec'1 2/20/2018

ExonMobil

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## SAFETY DATA SHEET

SECTION 1	PRODU	CT AND COMPANY IDENTIFICATION
PRODUCT		
Product Description	SOLINE, UNLEADED Hydrocarbons and A 3455-20 Gasoline	AUTOMOTIVE dditives
COMPANY IDENTIFICATION		
Supplier:	EXXON MOBIL CORP 22777 Springwoods V	
	Spring, TX. 77253 L	JSA
24 Hour Health Emergency		609-737-4411
Transportation Emergency Pr Product Technical Information	ione	800-424-9300 or 703-527-3887 CHEMTREC
MSDS Internet Address	1	800-662-4525 http://www.excon.com, http://www.mobil.com
SECTION 2	HAZARD	SIDENTIFICATION
This material is hazardous acc		delines (see (M)SDS Section 15).
CLASSIFICATION:		

Flammable liquid: Category 1. Skin irritation: Category 2. Germ Cell Mutagen: Category 1B. Carcinogen: Category 1B. Specific target organ toxicant (central nervous system): Category 3. Aspiration toxicant: Category 1.



Signal Word: Dange

Hazard Statements: H224: Extremely flammable liquid and vapor. H304: May be fatal if swallowed and enters airways. H315:

# Product Name: GASOLINE, UNLEADED AUTOMOTIVE Revision Date: 12 Apr 2016 Page 3 of 17

which may vary from person to person.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS This material is defined as a mixture.

#### us Substance(s) or Co ov Substanssist

Na ETI GA

ame	CAS#	Concentration*	GHS Hazard Codes
HYL ALCOHOL	64-17-5	< 11%	H225, H319(2A)
ASOLINE	86290-81-5	89 - 100%	H224, H304, H336, H340(1B), H350(1B) H315, H401, H411

Hazardous Constituent(s) Contained	in Complex Substance(s) rec	uired for disclosure
Name	CASH	lo l

Name	CAS#	le l	and the second se
BENZENE		Concentration*	GHS Hazard Codes
ETHYL BENZENF	71-43-2	<= 1.85%	H225, H303, H304, H340(1B), H350(1A), H315, H319(2A), H372, H401
N-HEXANE	100-41-4	1 - 5%	H225, H332, H373, H401, H412
NAPHTHALENE	110-54-3	1 - 5%	H225, H304, H336, H361(F), H315, H373, H401, H411
	91-20-3	<1%	H302, H351, H400(M factor 1), H410(M factor 1)
PSEUDOCUMENE (1,2,4-TRIMETHYLBENZENE)	95-63-6	1 - 5%	H226, H332, H335, H315, H319(2A), H401, H411
FOLUENE	108-88-3	5 - 10%	H225, H304, H336, H315, H373, H401, H412
(YLENES	25551-13-7	1-5%	H226, H315
TLENES	1330-20-7	5 - 10%	H226, H304, H312, H332, H335, H315, H320(2B), H373, H401

All concentrations are percent by weight unless material is a gas. Gas concentrations are in percent by volume

NOTE: The concentration of the components shown above may vary substantially. In certain countries, benzene content may be limited to lower levels. Oxygenates such as tertiary-amyl-methyl ether, ethanol, di-isopropyl teher, and ethyl-tertiary-butyl ether may be present. Because of volatility considerations, gasoline vapor may have concentrations of components very different from those of liquid gasoline. The major percentages, shown in the composition/information on ingredients section, are based on APIs evaluation of a typical gasoline mixture. Oxygenates may be present up to the maximum permitted by European Standard PL228. Motor gasoline is considered a mixture by EPA under the Toxis Cubstances Control Act (TSCA). The refinery streams used to blend motor gasoline are all on the TSCA Chemical Substances Inventory.

As per paragraph (i) of 29 CFR 1910.1200, formulation is considered a trade secret and specific chemical identify and exact percentage (concentration) of composition may have been withheid. Specific chemical

Product Name: GASC Revision Date: 12 Apr 2016 Page 4 of 17 GASOLINE, UNLEADED AUTOMOTIVE

identity and exact percentage composition will be provided to health professionals, employees, or designated representatives in accordance with applicable provisions of paragraph (i).

SECTION 4 FIRST AID MEASURES

#### INHALATION

Remove from further exposure. For those providing assistance, avoid exposure to yourself or others Use adequate respiratory protection. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.

#### SKIN CONTACT

UNIACT Wash contact areas with scap and water. Remove contaminated clothing. Launder contaminated clothing before reuse. If product is injected into or under the skin, or into any part of the body. regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

EYE CONTACT Flush thoroughly with water. If irritation occurs, get medical assistance

INGESTION

Seek immediate medical attention. Do not induce vomiting

#### NOTE TO PHYSICIAN

TO PHYSICIAN If ingested, material may be aspirated into the lungs and cause chemical pneumonitis. Treat appropriately. This light hydrocarbon material, or a component, may be associated with cardiac sensitization following very high exposures (well above occupational exposure limits) or with concurrent exposure to high stress levels or heart-stimulating substances like epinephrine. Administration of such substances should be avoided.

SECTION 5 FIRE FIGHTING MEASURES

#### EXTINGUISHING MEDIA

Appropriate Extinguishing Media: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

Inappropriate Extinguishing Media: Straight Streams of Water

#### FIRE FIGHTING

Fire Fighting Instructions: Evacuate area. If a leak or spill has not ignited, use water spray to disperse the vapors and to protect personnel attempting to stop a leak. Prevent runoff from fire control or dilution from entering streams, severs, or drinking water supply. Firefighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

Unusual Fire Hazards: Extremely Flammable. Vapors are flammable and heavier than air. Vapors may travel across the ground and reach remote ignition sources causing a flashback fire danger. Hazardous material. Firefighters should consider protective equipment indicated in Section 8.

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Product Name: GASOLINE, UNLEADED AUTOMOTIVE Revision Date: 12 Apr 2016 Page 6 of 17

and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken

ENVIRONMENTAL PRECAUTIONS Large Spills: Dike far ahead of liquid spill for later recovery and disposal. Prevent entry into waterways, sewers, basements or confined areas.

SECTION 7 HANDLING AND STORAGE

#### HANDLING

LING Avoid all personal contact. Prevent exposure to ignition sources, for example use non-sparking tools and explosion-proof equipment. Potentially toxio/inftating fumes/vapors may be evolved from heated or agitated material. Do not siphon by mouth. Use only with adequate ventilation. Do not use as a cleaning solvent or other non-motor fuel uses. For use as a motor fuel only, it is dangerous and/or unlawful to put fuel into unapproved containers. Do not fill container while it is in or on a vehicle. Static electricity may ignite vapors and cause fine. Place container on ground when filling and keep nozzle in contact with container. Do not use electronic devices (including but not limited to cellular phones, computers, calculators, pagers or other electronic devices, etc.) in or around any fueling operation or storage area unless the devices are certified intrinsically safe by an approved national testing agency and to the safety standards required by national and/or local laws and regulations. Prevent small splits and leakage to avoid silp hazerd. Material can accumulate static charges which may cause an electrical spark (ignition source). Use proper bonding and/or ground procedures. Advisor, adjanist fignitions Arising out of Static, Lightning and Stray Currents) or National Fire Protection Against fignitions Arising out of Static, Lightning and Stray Currents) or National Fire Protection Against fignitions device for the avoidance of hazards due to static electricity).

Static Accumulator: This material is a static accumulator. A liquid is typically considered a nonconductive, static accumulator if its conductivity is below 100 pS/m (100x10E-12 Siemens per meter) and is considered a semiconductive, static accumulator if its conductivity is below 10,000 pS/m. Whether a liquid is nonconductive or semiconductive, the precautions are the same. A number of factors, for example liquid temperature, presence of contaminants, anti-static additives and filtration can greatly influence the conductivity of a liquid.

#### STORAGE

GCE Ample fire water supply should be available. A fixed sprinkler/deluge system is recommended. The type of container used to store the material may affect static accumulation and dissipation. Keep container closed. Handle containers with care. Open slowly in order to control possible pressure release. Store in a cool, well-ventilated area. Outside or detached storage preferred. Keep away from incompatible materials. Storage containers should be grounded and bonded. Fixed storage container closes and storage containers should be grounded and bonded. Fixed storage containers, transfer containers and associated equipment should be grounded and bonded to prevent accumulation of static charge.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

#### EXPOSURE LIMIT VALUES

Exposure limits/standards (Note: Exposure limits are not additive)

Product Name: GASOLINE, UNLEADED AUTOMOTIVE Revision Date: 12 Apr 201 Page 5 of 17

Hazardous Combustion Products: Aldehydes, Incomplete combustion products, Oxides of carbon, Smoke, Fume, Sulfur oxides

#### FLAMMABILITY PROPERTIES

Flash Point [Method]: <40°C (-40°F) [ASTM D-56] Flammable Limits (Approximate volume % in air): LEL: 1.4 UEL: 7.6 Autoignition Temperature: >250°C (482°F)

SECTION 6 ACCIDENTAL RELEASE MEASURES

#### NOTIFICATION PROCEDURES

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations. US regulations require reporting releases of this material to the environment which exceed the applicable reportable quantity or oil spills which ocuded reach any waterway including intermittent dry creeks. The National Response Center can be reached at (800/424-8802.

#### PROTECTIVE MEASURES

ECTIVE MEASURES Avoid contact with spilled material. Warn or evacuate occupants in surrounding and downwind areas if required due to toxicity or fiammability of the material. See Section 5 for firs fighting information. See the Hazard Identification Section for Significant Hazards. See Section 4 for First Ald Advice. See Section 6 for advice on the minimum requirements for personal protective equipment. Additional protective measures may be necessary, depending on the specific circumstances and/or the expert judgment of the emergency responders.

For emergency responders: Respiratory protection: half-face or full-face respirator with filter(s) for organic vapor and, when applicable, H2S, or Self Contained Breathing Apparatus (SCBA) can be used depending on the size of spill and potential level of exposure. If the exposure cannot be completely characterized or an oxygen deficient atmosphere is possible or anticipated, SCBA is recommended. Work gloves that are resistant to aromatic hydrocarbons are recommended. More gloves made of polying acatetate (PVA) are not water-resistant and are not suitable for emergency use. Chemical goggies are recommended if splashes or contact with eyes is possible. Small splils normal antistatic work cidene are usually adequate. Large splils: full body suit of chemical resistan antistatic material is recommended.

#### SPILL MANAGEMENT

MANAGEMENT Land Spill: Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop leak if you can do it without risk. All equipment used when handling the product must be grounded. Do not touch or with fithough spilled material. Prevent entry into waterways, sewer, basements or confined areas. A vapor suppressing floam may be used to reduce vapors. Use clean non-sparking tools to collect absorbed material. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. Large Spills: Water spray may reduce vapor, but may not prevent ignition in closed spaces.

Water Spill: Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop leak if you can do it without risk. Do not confine in area of spill. Advise occupants and shipping in downwind areas of fire and explosion hazard and warn them to stay clear. Allow liquid to evaporate from the surface. Seek the advice of a specialist before using dispersants.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave

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Product Name: GASOLINE, UNLEADED AUTOMOTIVE Revision Date: 12 Apr 2016 Page 7 of 17

Substance Name	Form	Limit / St	andard		NOTE	10-
BENZENE		OSHA Action level	0.5 ppm		N/A	Source OSHA Sp.Reg.
BENZENE		STEL	5 ppm		N/A	OSHA
BENZENE		TWA	1 ppm		N/A	Sp.Reg. OSHA
BENZENE		STEL	1			Sp.Reg.
BENZENE		TWA	1 ppm		N/A	ExxonMob
BENZENE		STEL	0.5 ppm		N/A	ExxonMob
BENZENE		TWA	2.5 ppm		Skin	ACGIH
ETHYL ALCOHOL			0.5 ppm		Skin	ACGIH
ETHYL ALCOHOL		AWT	1900 mg/m3	1000 ppm	N/A	OSHA Z1
		STEL	1000 ppm		N/A	ACGIH
ETHYL BENZENE	-	TWA	435 mg/m3	100 ppm	N/A	OSHA Z1
ETHYL BENZENE		TWA	20 ppm		N/A	ACGIH
GASOLINE		STEL	200 ppm		N/A	ExxonMobi
GASOLINE		TWA	100 ppm		N/A	ExxonMobi
GASOLINE		STEL	500 ppm		N/A	ACGIH
GASOLINE		TWA	300 ppm		N/A	
N-HEXANE .		TWA	1800 mg/m3	500 ppm	N/A	ACGIH OSHA Z1
N-HEXANE		TWA	50 ppm		-	and the second second
NAPHTHALENE		TWA	50 mg/m3	40	Skin	ACGIH
NAPHTHALENE	-	TWA	10 ppm	10 ppm	N/A	OSHA Z1
PSEUDOCUMENE (1,2,4-TRIMETHYLBENZENE)		TWA	25 ppm		Skin N/A	ACGIH ACGIH
TOLUENE		Ceiling	300 ppm		N/A	
TOLUENE		Maximum	500 ppm			OSHA Z2
		concentrat	300 ppm		N/A	OSHA Z2
TOLUENE		TWA	200 ppm		N/A	00000
TOLUENE		TWA	20 ppm		N/A	OSHA Z2
RIMETHYL BENZENE		TWA	25 ppm		N/A N/A	ACGIH
(YLENES		TWA		100		ACGIH
YLENES		STEL	455 mg/ma 150 ppm	100 ppm	N/A	OSHA Z1
YLENES					N/A	ACGIH
		IIWA	100 ppm		N/A	ACGIH

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

#### **Biological limits**

Substance	Specimen	Sampling Time	Limit	Determinant	Source
BENZENE	Creatinine in urine	End of shift	500 ug/g		ACGIH BEL
BENZENE	Creatinine in urine	End of shift	25 ug/g	S-Phenylmercapturic acid	(BEIs) ACG/H BELs (BEIs)
ETHYL BENZENE	Creatinine in urine	End of shift	0.15 g/g		ACGIH BELS

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Product Name: GASOLINE, UNLEADED AUTOMOTIVE Revision Date: 12 Apr 2016 Page 50 17

N-HEXANE	Urine	End of shift at end of work wk	0.4 mg/l	2,5-Hexanedion, without hydrolysis	ACGIH BELs (BEIs)
NAPHTHALENE	No Biological Specimen provided	End of shift	Not Assigned	1-Naphthol, with hydrolysis + 2-Naphthol, with hydrolysis	ACGIH BELs (BEIs)
TOLUENE	Blood	Prior to last shift of work wk	0.02 mg/l		ACGIH BELS (BEIS)
TOLUENE	Creatinine in urine	End of shift	0.3 mg/g	o-Cresol, with hydrolysis	ACGIH BELS (BEIS)
TOLUENE	Urine	and the second	0.03 mg/l	Toluene	ACGIH BELS (BEIs)
XYLENES	Creatinine in urine	End of shift	1.5 g/g	Methylhippuric acids	ACGIH BELS

#### ENGINEERING CONTROLS

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider: Use explosion-proof ventilation equipment to stay below exposure limits.

#### PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, norm

usage. Respiratory Protection: If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include: Half-face filter respirator

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapor warning properties are poor, or if air purifying filter capacity/rating may be exceeded. may be exceeded

Hand Protection: Any specific glove information provided is based on published literature and glove manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include: Chemical resistant gloves are recommended. Eve Protection: If contact is likely, safety glasses with side shields are recommended.

Every rotection: To contact is likely, safety grasses with side shields are recommended.
Skin and Body Protection: Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include: Chemical/oil resistant clothing is recommended.
Specific Hygiene Measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routlinely wash work clothing and protective equipment to remove constrainmants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

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POSSIBILITY OF HAZARDOUS REACTIONS: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

#### INFORMATION ON TOXICOLOGICAL EFFECTS

Hazard Class	Conclusion / Remarks
Inhalation	
Acute Toxicity: (Rat) 4 hour(s) LC50 > 5000 mg/m3 (Vapor)	Minimally Toxic. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 403
Irritation: No end point data for material.	Elevated temperatures or mechanical action may form vapors, mist, or fumes which may be irritating to the eyes, nose, throat, or lungs.
Ingestion	
Acute Toxicity (Rat): LD50 > 5000 mg/kg	Minimally Toxic. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 401
Skin	A A A A A A A A A A A A A A A A A A A
Acute Toxicity (Rabbit): LD50 > 2000 mg/kg	Minimally Toxic. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guidefine 402
Skin Corrosion/Irritation (Rabbit): Data available.	Irritating to the skin. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 404
Eye	to be build and a similar to be buildeline 404
Serious Eye Damage/Irritation (Rabbit): Data available.	May cause mild, short-lasting discomfort to eyes. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 405
Sensitization	
Respiratory Sensitization: No end point data for material.	Not expected to be a respiratory sensitizer.
Skin Sensitization; Data available.	Not expected to be a skin sensitizer. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 406
Aspiration: Data available.	May be fatal if swallowed and enters airways. Based on physico-chemical properties of the material.
Germ Cell Mutagenicity: Data available.	Caused genetic effects in laboratory animals, but the relevance to humans is uncertain. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 471 475 476
Carcinogenicity: Data available.	Caused cancer in laboratory animals. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 451
teproductive Toxicity: Data available.	Not expected to be a reproductive toxicant. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 416 421
actation: No end point data for material.	Not expected to cause harm to breast-fed children.
pecific Target Organ Toxicity (STOT)	2. duar-los children.
unternar.	May cause drowsiness or dizziness.
	Not expected to cause organ damage from prolonged or repeated exposure. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 410 412 453

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#### ENVIRONMENTAL CONTROLS

Comply with applicable environmental regulations limiting discharge to air, water and soil. Protect the environment by applying appropriate control measures to prevent or limit emissions.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Note: Physical and chemical properties are provided for safety, health and environmental considerations only and may not fully represent product specifications. Contact the Supplier for additional information.

#### GENERAL INFORMATION

Physical State: Liquid Color: Clear (May Be Dyed) Odor: Petroleum/Solvent Odor Threshold: N/D

 Otor Hinteshnic: NPD

 IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION Rolative Density (at 15 °C): 0.74

 Density (at 15 °C): 720 kg/m² (6.01 lbs/gal, 0.72 kg/dm²) - 758 kg/m² (6.33 lbs/gal, 0.76 kg/dm²) Flammability (Solid, Gas): NA

 Flash Point [Method]: <-40°C (-40°F) [ASTM D-56]</td>

 Flammability (Solid, Gas): NA

 Flash Point [Method]: <-40°C (-40°F) [ASTM D-56]</td>

 Flammability (Solid, Gas): NA

 Boiling Point / Range: > 20°C (48°F)

 Boiling Point / Range: > 20°C (68°F)

 Decomposition Temperature: > 25°C (48°F)

 Decomposition Temperature: > 20°C (68°F)

 Vapor Density (Air = 1): 3 at 101 kPa

 Vapor Pressure: > 26.6 kPa (200 mm Hg) at 20 °C

 Evaporation Rate (-butyl acetate = 1): > 10

 pH: N/A

 Log Pow (n-Octanol/Water Partition Coefficient): > 3

 Solubility in Water: Negligible

 Log Pow (n-octamorwater Particle) solution (not particular) Solubility in Water: Negligible Viscosity: <1 cSt (1 mm2/sec) at 40 °C Oxidizing Properties: See Hazards Identification Section. OTHER INFORMATION

Freezing Point: N/A Melting Point: N/A N/D

SECTION 10 STABILITY AND REACTIVITY REACTIVITY: See sub-sections below

STABILITY: Material is stable under normal conditions

CONDITIONS TO AVOID: None

MATERIALS TO AVOID: Alkalies, Halogens, Strong Acids, Strong oxidizers

HAZARDOUS DECOMPOSITION PRODUCTS: Material does not decompose at ambient temperatures.

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#### TOXICITY FOR SUBSTANCES

NAME	ACUTE TOXICITY	
ETHYL BENZENE	Inhalation Lethality: 4 hour(s) LC50 17.8 mg/l (Vapor) (Rat); Oral Lethality: LD50 3.5 g/kg (Rat)	
NAPHTHALENE	Inhalation Lethality: 4 hour(s) LC50 > 0.4 mg/l (Max attainable vapor conc.) (Rat); Oral Lethality: LD50 533 mg/kg (Mouse)	

#### OTHER INFORMATION

For the product itself:

For the product itself: Laboratory animal studies have shown that prolonged and repeated inhalation exposure to light hydrocarbon wapors in the same boiling range as this product can produce adverse kidney effects in maie rats. However, to a such effects were not observed in similar studies with female rats, maie and female mice, or in limited studies with other animal species. Additionally, in a number of human studies, there was no clinical evidence of such effects at normal occupational levels. In 1991, The U.S. EPA determined that the male rat kidney is not useful for assessing human risk. Vapor concentrations above recommended exposure levels are irritating to the eyes and the respiratory affects. Mapor concentrations above recommended exposure levels are irritating to the eyes and the respiratory affects or pulmonary edema. Very high exposure (confined spaces / abuse) to light hydrocarbons may presult in abnormal heart rhythm (arrhythmias). Concurrent high stress levels and/or co-exposure to high evelse of hydrocarbons (above occupational exposure limits), and to heart-stimulating substances like epinephrine, nasai decongestants, asthma drugs, or cardiovascular drugs may initiate arrhythmias feasible mice and kidney tumors in male rats. Nethor result considered significant for human health risk assessment by the United States EPA and others. Did not cause mutatons in Vitro or In Vito. Negative in inhalation developmentia tudies and reproductive tax vidues Inhalation of hydro contrations in animals resulted in reversible central nervous system depression, but no persistent taxic effect on the nervous system. Non-sensitizing in test animals. Caused nerve damage in humans from abusive use (sniffing).

Contair

Contains: BENZENE: Caused cancer (acute myeloid laukemia and myelodysplastic syndrome), damage to the blood-producing system, and serious blood disorders in human studies. Caused genetic effects and effects on the immune system in laboratory animal and some human studies. Caused toxicity to the fetus and cancer in laboratory animal studies. ETHANOL: Prolonged or repeated exposure to high concentrations of ethanol vapor or overexposure by ingestion may produce adverse effects to brain, kidney, liver, and reproductive cograns, birth defects in offspring, and developmental toxicity in offspring. NAPHTHALENE: Exposure to high concentrations of naphthalane may cause destruction of red blood cells, anemia, and cataracts. Naphthalene caused cancer in laboratory animal studies, but the relevance of these findinos to humans is uncertain.

anemia, and cataracts. Naphthalene caused cancer in laboratory animal studies, but the relevance of these findings to humans is uncertain. N-HEXANE: Prolonged and/or repeated exposures to n-Hexane can cause progressive and potentially inteversible damage to the peripheral nervous system (e.g. fingers, feet, arms, legs, etc.). Simultaneous exposure to Metry Ethyl Kenon (MEK) or Methyl Isobutyl Kotone (MIBK) and n-Hexane can potentiate the risk of adverse effects from n-Hexane on the peripheral nervous system. n-Hexane has been shown to cause testicular dramage at high doses in male rats. The relevance of this effect for humans is unknown. TOLUENE : Concentrated, prolonged or deliberate inhalation may cause brain and nervous system adverse fetal developmental effects. TRIMETHYLBENZENE: Long-term inhalation exposure of trimethylbenzene cause deflects to the blood in laboratory animals.

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ETHYLBENZENE: Caused cancer in laboratory animal studies. The relevance of these findings to humans is uncert

The following ingredients are cited on the lists below:

Chemical Name	CAS Number	List Citations	_
BENZENE	71-43-2	1, 3, 6	
ETHYL BENZENE	100-41-4	1, 5, 0 E	
GASOLINE	86290-81-5	5	
NAPHTHALENE	91-20-3	2.5	

= NTP CARC 2 = NTP SUS

--REGULATORY LISTS SEARCHED--5 = IARC 2B 6 = OSHA CARC

#### SECTION 12 ECOLOGICAL INFORMATION

3 = IARC 1 4 = IARC 2A

The information given is based on data available for the material, the components of the material, and similar

#### ECOTOXICITY

Material – Expected to be toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

#### MOBILITY

More volatile component – Highly volatile, will partition rapidly to air. Not expected to partition to sediment and wastewater solids. Less volatile component – Low solubility and floats and is expected to migrate from water to the land. Expected to partition to sediment and wastewater solids.

#### PERSISTENCE AND DEGRADABILITY

Persola funce Biodegradation: Majority of components – Expected to be inherently biodegradable Atmospheric Oxidation: More volatile component – Expected to degrade rapidly in air

#### BIOACCUMULATION POTENTIAL

CONDLATION POTENTIAL Majority of components – Has the potential to bioaccumulate, however metabolism or physical properties may reduce the bioconcentration or limit bioavailability.

Product Name: GASOLINE, UNLEADED AUTOMOTIVE Revision Date: 12 Apr 2016 Page 14 of 17

UN Number: 1203 Packing Group: II Marine Pollutant: Yes

Label(s): 3 Transport Document Name: UN1203, MOTOR SPIRIT or GASOLINE or PETROL, 3, PG II, (-40°C c.c.), MARINE POLLUTANT

AIR (IATA)

Proper Shipping Name: MOTOR SPIRIT or GASOLINE or PETROL Hazard Class & Division: 3 Inizial of the of the off the

SECTION 15 REGULATORY INFORMATION OSHA HAZARD COMMUNICATION STANDARD: This material is considered hazardous in accordance with OSHA HazCom 2012, 29 CFR 1910.1200.

Listed or exempt from listing/notification on the following chemical inventories: AICS, DSL, ENCS, KECI, PICCS, TSCA

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section

CERCLA: This material is not subject to any special reporting under the requirements of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). Contact local authorities to determine if other reporting requirements apply.

SARA (311/312) REPORTABLE HAZARD CATEGORIES: Fire. Immediate Health. Delayed Health.

#### SARA (313) TOXIC RELEASE INVENTORY:

Chemical Name	CAS Number	Typical Value	_
BENZENE	71-43-2	<= 1.65%	
ETHYL BENZENE	100-41-4	1 - 5%	
N-HEXANE	110-54-3	1 - 5%	
NAPHTHALENE	91-20-3	<1%	
PSEUDOCUMENE (1,2,4-TRIMETHYLBENZENE)	95-63-6	1 - 5%	
TOLUENE	108-88-3	5 - 10%	
XYLENES	1330-20-7	5 - 10%	_

The following ingredients are cited on the lists below

Product Name: GASOLINE, UNLEADED AUTOMOTIVE Revision Date: 12 Apr 2016 Page 13 of 17

SECTION 13

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

#### DISPOSAL RECOMMENDATIONS

Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products as under the supervised incineration of undesirable combustion of undesirable combustion.

DISPOSAL CONSIDERATIONS

REGULATORY DISPOSAL INFORMATION RCRA Information: Disposal of unused product may be subject to RCRA regulations (40 CFR 261). Disposal of the used product may also be regulated due to ignitability, corrosivity, reactivity or toxicity as determined by the Toxicity Characteristic Leaching Procedure (TCLP). Potential RCRA characteristics: IGNITABILITY. TCLP (BENZENE)

Empty Container Warning Empty Container Warning (where applicable): Empty containers may contain residue and can be dangerous. Do not attampt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through wutably qualified or licensed contractor and in accordance with governmental regulations. Do NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

## SECTION 14 TRANSPORT INFORMATION

LAND (DOT) Proper Shipping Name: GASOLINE Hazard Class & Division: 3 ID Number: 1203 Packing Group: II Marine Pollutant: ERG Number: 128

Erro rummør: 120 Label(9): 3 Transport Document Name: UN 1203, GASOLINE, 3, PG II, MARINE POLLUTANT

LAND (TDG)

Proper Shipping Name: GASOLINE Hazard Class & Division: 3 UN Number: 1203 Packing Group: II Special Provisions: 17

#### SEA (IMDG)

Proper Shipping Name: MOTOR SPIRIT or GASOLINE or PETROL Hazard Class & Division: 3 EMS Number: F-E, S-E

# Product Name: GASOLINE, UNLEADED AUTOMOTIVE Revision Date: 12 Apr 2016 Page 15 of 17

#### Chemical Name CAS Number List Citations 1, 2, 4, 10, 11, 13, 15, 16, 17, 18, 19 1, 4, 13, 16, 17, 18 BENZENE ETHYL ALCOHOI 71-43-2 64-17-ETHYL BENZENE 100-41-1, 4, 10, 13, 16, 17, 18, 19 GASOLINE N-HEXANE NAPHTHALENE 1, 18 1, 4, 13, 16, 17, 18, 19 86290-81-5 110-54-3 91-20-3 95-63-6 1, 4, 10, 17, 19 1, 13, 16, 17, 18, 19 PSEUDOCUMENE (1,2,4-TRIMETHYLBENZENE) TOLUENE 108-88-3 1, 4, 11, 13, 15, 16, 17, 18, 19 TRIMETHYL BENZENE 25551-13-7 1, 13, 16, 17, 18 XYLENES

1 = ACGIH ALL 2 = ACGIH A1 3 = ACGIH A2 4 = OSHA Z	6 = TSCA 5a2 7 = TSCA 5e 8 = TSCA 6	RY LISTS SEARCHED 11 = CA P65 REPRO 12 = CA RTK 13 = IL RTK	16 = MN RTK 17 = NJ RTK 18 = PA RTK
4 = OSHA Z	9 = TSCA 12b	14 = LA RTK	18 = PARTK
5 = TSCA 4	10 = CA P65 CARC	15 = MI 293	19 = RI RTK

Code key: CARC=Carcinogen; REPRO=Reproductive

SECTION 16 OTHER INFORMATION

This warning is given to comply with California Health and Safety Code 25249.6 and does not constitute an admission or a waiver of rights. This product contains a chemical known to the State of California to cause cancer, birth defects, or other reproductive harm. Chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm are created by the combustion of this product.

N/D = Not determined, N/A = Not applicable

N/D = Not determined, N/A = Not applicable KEY TO THE H-CODES CONTAINED IN SECTION 3 OF THIS DOCUMENT (for information only): H224: Extremely flammable liquid and vapor; Flammable Liquid, Cat 1 H226: Flammable liquid and vapor; Flammable Liquid, Cat 2 H228: Flammable liquid and vapor; Flammable Liquid, Cat 3 H302: Harmful if swallowed; Acute Tox Oral, Cat 4 H303: May be harmful if swallowed; Acute Tox Oral, Cat 5 H304: May be fatal if swallowed and enters alivays; Aspiration, Cat 1 H312: Harmful in contact with skin; Acute Tox Dermal, Cat 4 H315: Causes skin irritation; Skin Corrifination, Cat 2 H319(2A): Causes seve irritation; Serious Eye Damage/Irr; Cat 2A H320(2B): Causes seve irritation; Serious Eye Damage/Irr; Cat 2B H322: Harmful if inhaled; Acute Tox Inh, Cat 4 H335: May cause and cause seve irritation; Target Organ Single, Resp Irr H336: May cause and cause cause; Carcinogenicity, Cat 1B H350(1A): May cause cancer; Carcinogenicity, Cat 1B H351: Suspected of causing cancer; GHS Carcinogenicity, Cat 2

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Product Name: GASOLINE, UNLEADED AUTOMOTIVE Page 16 cf. 17

H361(D): Suspected of damaging the unborn child; Repro Tox, Cat 2 (Develop) H361(F): Suspected of damaging fertility; Repro Tox, Cat 2 (Fertility) H372: Causes damage to organs through prolonged or repeated exposure; Target Organ, Repeated, Cat 1 H373: May cause damage to organs through prolonged or repeated exposure; Target Organ, Repeated, Cat 2

- 2 4400: Very toxic to aquatic life; Acute Env Tox, Cat 1 H401: Toxic to aquatic life; Acute Env Tox, Cat 2 H410: Very toxic to aquatic life with long lasting effects; Chronic Env Tox, Cat 1 H411: Toxic to aquatic life with long lasting effects; Chronic Env Tox, Cat 2 H412: Harmful to aquatic life with long lasting effects; Chronic Env Tox, Cat 3

#### THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:

THIS SAFETY DATA SHEET CONTAINS THE FULLOWING REVISIONS. Section 06: Accidental Release - Spill Management - Water information was modified. Section 07: Handling and Storage - Handling Information was modified. Section 07: Handling and Storage - Storage Phrases information was modified. Section 07: Handling and Storage - Storage Phrases information was modified. Section 07: Handling and Storage - Storage Phrases information was modified. Section 07: Materials to Avoid information was modified. Section 10: Materials to Avoid information was modified. Section 11: Chronic Tox - Component Information was modified. Section 11: Chronic Tox - Component Information was modified. Section 11: Chronic Tox - Component Information was modified. Section 11: Cher Health Effects Information was modified. THIS MSDS COVERS THE FOLLOWING MATERIALS: ESSO EXTRA MIDGRADE UNLEADED | ESSO MIDGRADE UNLEADED | ESSO PREMIUM UNLEADED | ESSO REGULAR UNLEADED | ESSO SUPER PREMIUM UNLEADED | EXXON MIDGRADE UNLEADED | EXXON PREMIUM UNLEADED | EXXON REGULAR UNLEADED | MOBIL REGULAR UNLEADED | MOBIL EXTRA UNLEADED | MOBIL SUPER UNLEADED | PREMIUM UNLEADED | MOBIL PREGULAR UNLEADED | MOBIL SUPER UNLEADED | PREMIUM UNLEADED | MOBIL SPECIAL UNLEADED | MOBIL SUPER UNLEADED | PREMIUM UNLEADED | REGULAR UNLEADED | MOBIL SUPER UNLEADED | PREMIUM UNLEADED | REGULAR UNLEADED | UNLEADED | MOBIL SUPER UNLEADED | PREMIUM UNLEADED | REGULAR UNLEADED | UNLEADED | MOBIL SUPER UNLEADED | PREMIUM UNLEADED | REGULAR UNLEADED | UNLEADED | UNLEADED | SUPER UNLEADED | PREMIUM UNLEADED | REGULAR UNLEADED | UNLEADED | SO SUPER PREMIUM UNLEADED | REGULAR UNLEADED | UNLEADED | UNLEADED | SUPER UNLEADED | PREMIUM UNLEADED | REGULAR UNLEADED | UNLEADED | GASOLINE

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DGN: 2000316XUS (1011203)

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Oxygen, compressed Safety Data Sheet P-4638

PRAXAIR

This SDS conforms to U.S. Code of Federal Regulations. 29 CFR 1910.1200, Hazard Communication. Date of Issue: 01/01/1979 Revision date: 01/27/2021 Supersedes: 06/28/2020 Version: 2.0

1.1. Product identifier	
Product form	: Substance
Trade name	: Oxygen, MediPure Oxygen
CAS-No.	7782-44-7
Formula	: 02
Other means of identification	<ul> <li>Oxygen, Compressed, MediPure Oxygen; Aviator's Breathing Oxygen; USP Oxygen, Oxygen - Diving Grade</li> </ul>
1.2. Relevant identified uses o	the substance or mixture and uses advised against
Use of the substance/mixture	: Medical applications. Industrial use Diving Gas (Underwater Breathing)
1.3. Details of the supplier of the	ne safety data sheet
	Linde Inc. 10 Rivervice Univer Danbury, CT 06810-6268 - USA
1.4. Emergency telephone num	iber
Emergency number	Onsite Emergency: 1-800-845-4633
	CHEMTREC, 24hr/day 7daya/week — Within USA: 1-800-424-5900, Outside USA: 001-703-527-3887 (collect calls accepted, Contract 17729)
SECTION 2: Hazard Identifica	ition
2.1. Classification of the subst	ance or mixture
GHS US classification	
Ox. Gas 1 H270 Press. Gas (Comp.) H280	
2.2. Label elements	
GHS US tabeling	
Hazard pictograms (GH5 US)	$\wedge$ $\wedge$

Signal word (GHS US)	Danger	
Hazard statements (GHS US)	H270 - MAY CAUSE OR INTENSIFY FIRE; OXIDIZER H280 - CONTAINS GAS UNDER PRESSURE; MAY EXPLODE IF HEATED	
Precautionary statements (GHS US)	P202 - Do not handle until all safety presenutions have been read and understood. P202 - Neep/Store away from combustible materials. dorbing P244 - Keep reduction velves/velves and fittings free from oil and grease P271+P403 - Use and store evel vulcators or to well-ventilated pace, P370-P376 - NL A&E OF FIRE: Stop leak if safe to do so CGAP-P026 - Use a back from preventive device in the piping.	
EN (English US)	SDS ID: P-4638	1/10

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# **E**xonMobil

Linde	Oxygen, compressed	PRAXAIR
ocinite	Safety Data Sheet P-4638	
	and the second	1 1997 - 19 M
Date of issue: 01	nms to U.S. Code of Federal Regulations 29 CFR 1910.1200, He /01/1979 Revision date: 01/27/2021 Supersedes: 0	azard Communication. 18/28/2020 Version: 2,0
	CGA-PG20+CGA-PG10 - Use only with equipment of 1 rated for cylinder pressure. CGA-PG22 - Use only with equipment cleaned for oxy CGA-PG12 - Do not open valve until connected to equi CGA-PG12 - Don valve solwy. CGA-PG09 - Close valve after each use and when own CGA-PG09 - Close valve after each use and when own CGA-PG09 - Porteet from swinght whom mithint temp	pen service. prent prepared for use. phy.
2.3 Other hazards	•	
Other hazards not contributing to the classification	Breathing 80 percent or more sxygen at atmospheric p cause masal aufilmess, cough, sore throad, chest pain, cougen at higher pressure recenses the likelihood of a system (CNS) effects, resulting in dizmess, poor coor hearing disturbances, muncular whiching, unconscisus oxygen under pressure may cause prolongation of ada peripheral wision.	and breathing difficulty. Breathing dverse effects within a shorter time use lung damage and central nervous dination, tingling sensation, visual and ness, and convulsions. Breathing
2.4. Unknown acute toxicity (GHS U	IS) No data available	and the second
SECTION 3: Composition/Inform		
3.1, Substances		
Name CAS-No	Oxygen, compressed 7782-44-7	
Name	Product identifier %	
Oxygen	(CAS-No.) 7782-44-7 99.5 - 100	
3.2. Mixtures		
Not applicable		
SECTION 4: First aid measures		
4.1. Description of first aid measure First-aid measures after inhalation	<ul> <li>Move to fresh air. Get medical advice/attention.</li> </ul>	
First-aid measures after skin contact	Adverse effects not expected from this product.	
First-aid measures after eye contact	<ul> <li>Adverse effects not expected from this product. In case plenty of water. Consult an ophthalmologist if irritation plant</li> </ul>	of eye irritation: Rinse immediately with persists.
First-aid measures after ingestion	Ingestion is not considered a potential route of exposur	
4.2. Most important symptoms and	effects, both acute and delayed	A MARKA CARD MARKAN PROPERTY.
	No additional information available	
	dical attention and special treatment needed	
	15	
Suitable extinguishing media	<ul> <li>Vigorously accelerates combustion. Use media approp safety shower) is the preferred extinguishing media for</li> </ul>	
Fire hazard	<ul> <li>Oxidizing agent: vigorously accelerates combustion. C cause fire or explosion.</li> </ul>	ontact with flammable materials may
None. SECTION 55 Firefighting measure 5.1, Extinguishing media Selable extinguishing media 6.2. Special hazards arising from th Fire hazard	<ul> <li>Vigorously accelerates combustion. Use media approp safety shower) is the preferred extinguishing media for</li> </ul>	clothing fires.
	SOS ID: P-4638	2/10
EN (English US)	5US IU; P-4638	



EN (English US)

Oxygen, compressed Safety Data Sheet P-4638

This SDS conforms to U.S. Code of Federal Regulations 29 CFR 1910 1200, Hazard Communication, Date of issue: 01/01/1979 Revision date: 01/27/2021 Supersides: 08/28/2020 Version: 2,0

PRAXAIR

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Oxygen, compressed



 
 Safety Data Sheet P-4633

 This SDS conforms to U.S. Code of Federal Regulations 29 CFR 1910.1200, Hazard Communication, Date of issue: 01/01/1979
 Revision date: 01/27/2021
 Supersedes: 08/28/2020 Version: 2.0

5.3.	Advice for firefighters	
Firefigh	ting instructions	High-pressure, oxidizing gas.
		Evisuate all personnel from the damper area. Use self-contained breathing apparatus (SGDA) and protective clothing. Immediately cool containen, with water from maximum distances. Step flow of gas it safe to do so, while continuing cooling water spary. Remove ignition sources if safe to do so, Remove containers from area of the if a safe to do so. On-while fire bingates must comply with CB/HA 20 CPF 1910.156 and applicable standards under 29 CFR 1910 Subpart I—Fire Pretection.
Special protective equipment for fire lighters		Standard protective clothing and equipment (Self Contained Breathing Apparatus) for fire fighters;
Specifi	a methods	: Use fire control measures appropriate for the surrounding fire. Exposure to fire and heat radiation may cause gas containers to rupture. Cool endangered containers with water spray jet from a protected position. Prevent water used in emergency cases from entering severs and drainage systems.
		Stop flow of product if safe to do so.
		Use water spray or fog to knock down fire fumes if possible.
Other i	nformation	I Head of fire can build pressure in container and cause it to applies. Containers are equipped with a pressure incubile clucker, (Exceptions may exist where authorized by DOT.) No part of the container should be subjected to a temperature higher than 125°F (EVC). Smoking, fames, and sector sparks in the presence of enriched corgen atmospheres are potential explosion hazards.
SECT	ION 6: Accidental release mea	isures
SECT		ISURGES quipment and emergency procedures
6.1.		
6.1. Genera	Personal precautions, protective ec	pupment and emergency procedures Prevent from ordering severs, basements and workpils, or any place where its accumulation can be dargenous. Entrus adequate all vertilation. Eliminate ignition sources. Evacuale and apparatus when entering area unless atmosphere is proven to be safe. Stop leak if safe to do ao.
6.1. Genera 5.1.1	Personal precautions, protective ec I measures For non-emergency personnel	pulpment and emergency procedures ; Prevent from ontering severs, basements and workpits, or any place where its accumulation can be drageneous. Ensure adqueues air ventilation. Eliminate ignition sources. Evacuate area. Try to stop release. Montor concentration or dreleased product. Wear self-contained breathing apparatus when entering area unless atmosphere is proven to be safe. Sop leak if safe to do
6.1. Genera 5.1.1	Personal precautions, protective ed I measures	pupment and emergency procedures Prevent from ordering severs, basements and workpils, or any place where its accumulation can be dargenous. Entrus adequates all vertilations. Etiminate ignition sources. Execute and accumulation and any processing of the several several several and apparatus when entering area unless atmosphere is proven to be safe. Stop leak if safe to do ac.
8.1. Genera 5.1.1.	Personal precautions, protective ec I measures For non-emergency personnel	supment and emergency procedures. ) Provent from entring server, basements and veryingte, or any place where its accumulation con the dangencia. Enners adequate air verification. Eliminate ignifican sources. Evicaulte ano, Try to site preses. Mortor concentration of released and outcomestion of the entring separatus when entering area unless atmosphere is proven to be safe. Stop teak if safe to do ac. No additional information available
6.1. Genera 6.1.1. 6.1.2.	Personal precautions, protective ac measures For non-emergency personnel For emergency responders	supment and emergency procedures. ) Provent from entring server, basements and veryingte, or any place where its accumulation con the dangencia. Enners adequate air verification. Eliminate ignifican sources. Evicaulte ano, Try to site preses. Mortor concentration of released and outcomestion of the entring separatus when entering area unless atmosphere is proven to be safe. Stop teak if safe to do ac. No additional information available
6.1. Genera 6.1.1. 6.1.2. 6.2.	Personal precautions, protective ac measures For non-emergency personnel For emergency responders	<ul> <li>Period and emergency procedures.</li> <li>Period from the same procession of the same marks and verifields or any place where its accumulation the same process of any accumulation of the same same same same same same same sam</li></ul>
6.1. Genera 6.1.1. 6.1.2. 6.2.	Personal precautions, protective ac measures For non-emergency personnel For emergency responders Environmental precautions	<ul> <li>Period and emergency procedures.</li> <li>Period from the same procession of the same marks and verifields or any place where its accumulation the same process of any accumulation of the same same same same same same same sam</li></ul>
6.1.	Personal precautions, protective ac measures For non-emergency personnel For emergency responders Environmental precautions	pupment and emergency procedures           Prevent from ordering severs, basements and workpils, or any place where its accumulation can be dargened. Entrus adoption as inventilation. Eliminate ignition sources. Evacuate area, apparable, when entering area unless atmosphere is proven to be safe. Stop leak if safe to do ac.           No additional information available           No additional information available           Try to stop release.           and detaining up

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	ing and storage			
	or safe handling			
Precautions for safe han	ling	Were leasther safety gloves and safety shoes when handling cylinders. Protect cylinders from physical demages, to not drog, not y sile or drog. While moving cylinder, aways keep in place removable valve accover. Never alternpt to the cylinder by its call, the cap is intended solely to truck, dots (signape to transport privides). Revent and the cylinder is a cylinder by the call of the cylinder is the cap is intended solely to truck, dots (signape to transport privides). Revent activate call, signape to transport privides. Revent entran object (cg) works, drawed been adjustable target works to transport privides. Revent entran object (cg) works, drawed been adjustable target works to remove overdight or runder caps. Slow typoet the valve and there each use key closed over worker and runder caps. Slow typoet the valve. If the valve is hand to open, discording use may dominant your supplets. Close the container valve pressave relief advises to bit prematurely, verting the container contents, For other pressavions in unique this product, see section 16.		
Safe use of the product		The suitability of this product as a component in underwater breathing gas mixtures is to be detamined by or under the supervision of personnel experienced in the use of underwater breathing gas mixtures and familiar with the physiological effects, methods employed, frequency and duration of use, hazards, side effects, and precautions to be taken.		
7.2. Conditions fo	r safe storage, including	any incompatibilities		
Storage conditions		Silos only where temporature will not excest 129°F (20°C): Pool 'No Smoking/No Open Filmers' signs: in storage and use areas. Three most to no sources of grainton. Separate packages and protect against potential (if e and/or aquioson damage following appropriate codes and requirements (e.g., RPPA 30, MPPA 58, MPPA 70, and/or PAZ 21 in the U.S.) of excess orbanes uproprint to keep them from faining or being brocked over: Instal whee protection again, the provider, three in place by hand when the occharene is on in use. Store full and empty containers separately. Use a first in, first-out inventory system to prevent toxing k10, or other provider, three in place by hand when the occharene is escession 60. OTHER REECAUTIONS FOR HANDLING, STORAGE, AND USE: When handing product inder prevents: explicit and explicited advertises advertised by escilated the explicited account is a bit on the web and there prevention and the excitations is been shown in a pressource dystem. Use a black from preventive dowice in the occharene is escilated for the explicited account. See a bit and entry outpressing work on a pressource dystem. Use a black from preventive dowice in the preventive data and the excitation is the occharene is escilated for the explicited account. Also be the occharene is escilated for the explicit advertised by stem. Use a black from preventive dowice in the preventive data and excitation and black from preventive data and enterpressing. The maximum and the excitation is ablack count, and bala with advertised and an enterpressing the table. Never place a container where it is may become part of an electric crudit.		
7.3. Specific end u	so(s)			
		None		
SECTION 8: Expos	ure controls/perso	nal protection		
8.1. Control param				
Oxygen, compressed		A REAL PROPERTY OF A READ REAL PROPERTY OF A REAL P		
ACGIH	Not established			
	Not established			
USA OSHA				
	and the second se			
USA OSHA Oxygen (7782-44-7) ACGIH	Not established			
Oxygen (7782-44-7)	Not established Not established			
Oxygen (7782-44-7) ACGIH USA OSHA	Not established			
Oxygen (7782-44-7) ACGIH USA OSHA 8.7. Exposure con Appropriate engineering	Not established trots controls	Avoid oxygen rich (>23.5%) atmospheres. Use a local exhaust system with sufficient flow velocity to maintain an adequate supply of air in the worker's treating zone. Mechanical (general). General exhaust writistion may be acceptable if it can maintain an adequate supply of air.		
Oxygen (7782-44-7) ACGIH USA OSHA	Not established trots controls	velocity to maintain an adequate supply of air in the worker's breathing zone. Mechanical (general): General exhaust ventilation may be acceptable if it can maintain an adequate supply		

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Ande		gen, compresse afety Data Sheet P-4638	a	PRAXAIR
This SDS conform Date of issue: 01/01		of Federal Regulations 29 Cl Revision date: 01/27/2021	R 1910.1200, Hazard C Supersedes: 08/28/2	
Skin and body protection	on : Wear metatarsel shoes and work gloves for cylinder handling, and protective cobiling needed. Wear appropriate chemical gloves during cylinder changeout or wherever co product a possible. Seaker per CSNA 20 CFR 1901 132, 1910 133, and 1910 138. The veiding, wear hand, haid, and body protection to help prevent nigrly from radiation sparks. (Sea NAIS 244.) 1.4 an inimum, the includes veiders gives and pretective opgogles, and may include sem protectore, aprons, hats, and shoulder protection as we substantial cleffing.		angeout or wherever contact with 0.136, and 1910.138. As needed vent injury from radiation and er's gloves and protective	
Respiratory protection	meets ( Use an respirat respirat emerge	OSHA 29 CFR 1910.134, ANS	I 288.2, or MSHA 30 CF tridge if the action level on factor for the exposu st be appropriate for the	Is exceeded. Ensure that the re level. If cartridge type chemical exposure. For
SECTION 9: Physical and chemica	I propertie	5		
9.1. Information on basic physical and			No. of the other states	the second second
Physical state	Gas			
Appearance	Colories	is gas.		
Aolecular mass	32 g/m	st		
Solor	: Colories			
Odar	No odor	warning properties.		
Ddor threshold		available		
H	+ Not app	licable,		
telative evaporation rate (butyl scetate=1)	No data	available		
Relative evaporation rate (ether=1)	Not applicable.			
Aeiting point	: -219 °C (-362*F)			
reezing point	No data available			
Boiling point	: +183 °C (-297"F)			
flash point	Not app	ficable		
Critical temperature	: -118.6*	C (-181.48°F)		
Auto-Ignition temperature	Not app	licable.		
Decomposition temperature	: No data	avaitable		
Tammability (solid, gas)	: No data	available		
/apor pressure	: Not app	licable.		
Critical pressure		r (731.4 psia)		
Relative vapor density at 29 °C		bift3 (1.325 kg/m3) absolute v	apor density at 70°F/21	1°C, 1 atm
Relative density	: 1.1			
Density	: 1.4289	kg/m3 (at 21.1 °C)		
Relative gas density	: 1.5	28 - 19 - 19 - 19 - 19 - 19 - 19 - 19 - 1		
Solubility	: Water: 3	Ngm 66		
og Pow	: Not app	licable.		
og Kow	: Not app	licable.		
/iscosity, kinematic	: Not app	licable.		
Ascosity, dynamic	1 Not app	licable.		
ixplosive properties	1 Not app	licable.		
Dxidizing properties	: Oxidizer	Course of		
Explosion limits	: No data	available		
2. Other information				
Gas group	Compre	ssed gas		
19 A		10		

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Linde	Oxygen, compressed Safety Data Sheet P-4638	<b>PRAXAIR</b>
This SDS conforms Date of issue: 01/01/	ts U.S. Code of Federal Regulations 29 CFR 1910.1200 1979 Revision date: 01/27/2021 Supersede	Hazard Communication. s: 08/26/2020 Version: 2,0
Additional information	<ul> <li>GasAspor heavier than air. May accumulate in cont level.</li> </ul>	fined spaces, particularly at or below ground
SECTION 10: Stability and reactivity		
10.1. Reactivity	Destination of the later of the	CITATION CONTRACTOR DATA
	No additional information available	
10.2. Chemical stability	Contraction of the second s	A DESCRIPTION OF A DESC
	Stable under normal conditions.	
10.3. Possibility of hazardous reactions	THE REPORT OF A DAMAGE AND A	
	Violently oxidizes organic material.	
10.4. Conditions to avoid		
10.4. Conditions to avoid	None under recommended storage and handling co	editions (non section 7)
	None onder recommended eiorage and nationing co	removia fage account /).
10.5. Incompatible materials		
	Keep equipment the from oil and grease. Consider of chlorinated or fluorinated polymers in high pressu combustion. May react violently with combustible m agents.	re (> 30 bar) oxygen lines in case of
10.6, Hazardous decomposition products		
	None.	
SECTION 11: Toxicological information	ion/	the second s
1.1. Information on toxicological effects		
Acute toxicity	: Not classified	
Skin corresionArritation	: Not classified	
	pH: Not applicable.	
Serious eye damage/imitation	1 Not classified	
	pH: Not applicable.	
Respiratory or skin sensitization	1 Not classified	
Serm cell mutagenicity	Not classified	
Sarcinogenicity	1 Not classified	
Reproductive toxicity	Not classified	
Specific target organ toxicity - single exposure	Not classified	
Specific target organ toxicity - repeated	: Not classified	
Aspiration hazard	Not classified	
SECTION 12: Ecological information	101 - 300 - 200 - 200 - 200	
2.1. Toxicity		
Ecology - general	: No ecological damage caused by this product.	
	The association demote caused by this product.	
Condy - German		
	AND	
2.2. Persistence and degradability	No ecological damage caused by this product.	
2.2. Persistence and degradability Oxygen, compressed (7782-44-7)	No ecological damage caused by this product.	
2.2. Persistence and degradability Oxygen, compressed (7782-44-7) Persistence and degradability	No ecological damage caused by this product.	
Persistence and degradability     Oxygen, compressed (7782-44-7)     Persistence and degradability     Oxygen (7782-44-7)	1	

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12.3. Bioaccumulative potential Oxygen, compressed (7782-44-7) Log Pow Log Kow Bioaccumulative potential

Oxygen (7782-44-7)

Log Pow Log Kow Bioaccumulative potential 12.4. Mobility in soil Oxygen, compressed (7782-44-7) Mobility in soil

Ecology - soil Oxygen (7782-44-7) Mobility in coll Mobility in soil Ecology - soil

Effect on the global warming SECTION 13: Disposal considerati 13.1. Waste treatment methods Product/Packaging disposal recommen

UN-Na.(DDT) Proper Shipping Name (DOT) Class (DOT) Hazard labels (DOT)

Additional information Emergency Response Guide (ERG) Number

Other information

EN (English US)

DOT Special Provisions (49 CFR 172.102)

UN-No.(DOT)

12.5. Other adverse effects Effect on ozone layer

SECTION 14: Transport information In accordance with DOT Transport document description

This SOS o Date of issue: 01/01/1979

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Not applicable. Not applicable. No ecological damage caused by this product

Not applicable. Not applicable. No ecological damage caused by this product

No data available. No ecological damage caused by this product

No data available. No ecological damage caused by this product.

No known effects from this product.

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: No supplementary information available.

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None.

UN1072

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ns to U.S. Code of Federal Regulations 29 CFR 1910.1200, Hazard Communication. 1/1979 Revision date: 01/27/2021 Supersedes: 08/28/2020 Version: 2.0

Dispose of contents/container in accordance with local/regional/national/international regulations. Contact supplier for any special requirements.

110. First entropyliciters transmoored under UINId4 may include intellited educting antidigen strategies and the strategies and the strategies and the strategies and the Division 2.2, provided the appropriate quantity of delagnating (propertient) excitosives deels or occored 3.2, prevented the appropriate quantity of delagnating (propertient) excitosives deels or occored 3.2, prevented the automatication of the strategies and the strategies and control of the strategies and the strategies and the strategies and A14 - This material is not automatication to be transported as a timited quantity or consumer commodity in accordance with 173.350 of this subcharge when transported based and architecture.

Dxygen, compressed 2.2 - Class 2.2 - Non-Rammable compressed gas 49 CFR 173.115 2.2 - Non-flammable gas 5.1 - Oxidize





#### Oxygen, compressed



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This SDS conform	is to U.S. Code of Federal Regulations 29 CFR 1910.1200, Hazard Communication.
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Special transport precautions	2 Avoid transport on vehicles where the load space is not separated from the driver's compartment. Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the overt of an avoident or an energency. Before transporting product containers: - Ensure there is adequate vehilitation Ensure were vehicle advice is closed and not latking Ensure were used not only extension of the latking
Transport by sea	
UN-No. (IMDG)	: 1072
Proper Shipping Name (IMDG)	: OXYGEN, COMPRESSED
Class (IMDG)	2 - Gases
Division (IMDG)	: 2.2 - Nori-flammable, non-toxic gases
MFAG·No	122
Air transport	
UN-No. (IATA)	: 1072
Proper Shipping Name (IATA)	: Oxygen, compressed
Class (IATA)	: 2
Civil Aeronautics Law	: Gases under pressure/Gases nonflammable nontoxic under pressure
SECTION 15: Regulatory informati	on
15.1. US Federal regulations	
Oxygen, compressed (7782-44-7)	
Listed on the United States TSCA (Toxic Sut	betances Control Act) Inventory
SARA Section 311/312 Hazard Classes	Sudden release of pressure hazard Fire hazard
	All components of this product are listed on the Toxic Substances Control Act (TSCA) inventory.

Oxygen, compressed (7782-44-7)	
Listed on the Canadian DSL (Domestic Substances List)	
Oxygen (7782-44-7)	
Listed on the Canadian DSL (Domestic Substances List)	
Oxygen, compressed (7782-44-7)	
Listed on the EEC inventory EINECS (European Inventory	of Existing Commercial Chemical Substances)

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Oxygen, compressed Safety Data Sheet P-4638

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alian Inventory of Chemical Su					
(Existing Chemicals List) aland Inventory of Chemicals) nes Inventory of Chemicals an National Inventory of Chemica	inces Produced or Imported in C d Chemical Substances) il Substances)	hinā)			
(82-44-7)					
tion 65 - Carcinogens List	No				
tion 65 - Developmental	No				
U.S California - Proposition 65 - Reproductive Toxicity - Female		No			
U.S California - Proposition 65 - Reproductive Toxicity - Male		No			
	U.S Massachusetts - Right To Know List U.S New Jersey - Right to Know Hazardous Substance List U.S Pennsylvania - RTV (Right to Know) List				
65 - This product does not con reproductive harm	tain any substances known to the	e state of California to cause cance	ur,		
U.S California - Proposition 65 - Developmental Toxicity	U.S California - Proposition 65 - Reproductive Toxicity - Female	U.S California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)		
No	No	No			
	aland Twintoy of Chemicals an National Inventory of Chemicals an National Inventory of Chemicals in Chemical Substance Inventor 122-44-7) 106-05 - Cervilogners List tion 65 - Cervilogners List tion 65 - Reproductive 106 - Reproductive 106 - Reproductive 106 - This product does not con reproductive harm U.S California - Preposition 65 - Developmental Toxicity	aland Inventory of Chemicals) naland Inventory of Chemicals and Chemicals Substances) National Inventory of Chemical Substances) National Inventory of Chemical Substances National Inventory of Chemical Substances No	aland Inventory of Chemicals Jusciances) National Inventory of Chemical Substances) National Inventory of Chemical Substances) International Substance Inventory) International Substance Inventory) International Substance Inventory) International Substance Inventory International Substance Inventory International Substance Inventory International Substance Inventory International Substance International Substance List U.S New Jensey - Right to Know List U.S California - Proposition 65 - Proposition 65 - Reproductive Toxicity - Male Reproductive Toxicity - Nale		

U.S. - Indexactuses - right to know List U.S. - New Jensey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List

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SECTION 16: Other inform	ation
Other information	When you mix two or more chemicals, you can create additional, unexpected hazards: Obtain and evaluate the safety information for each component before you produce the mixture. Consult an industrial hyginaris or other trained person when you evaluate the end product. Before using any plastics, confirm their compatibility with this product.
	Linde axis uses of this product to study this SDS and become areas of the product heartist and sadely information. To provoka sade uses of this product, a user should (1) confly engiptives, agents, and contractors of the information in this SDS and of any other known product hazards and a delay information. (2) fumals this information to each purchases of the product, and (3) axis each purchase to notify its employees and customers of the product hazards and safety information.
	The opinions expressed herein are those of qualified experts within Linde inc. We believe that the information contained herein is current as of the date of this safety Data Sheet. Since the use of this information and the conditions of use are not within the control of Linde inc, it is the user's obligation to determine the conditions of safe use of the product.
	Linde SDSs are furnished on sale or delivery by Linde or the independent distributors and suppliers who package and sale our products. To distin surversi SDSs for these products, contact your sales representative, local distribution, or supplier, or download from www.findeus.com. If you have equations regarding Linde SDSs, would like the other number and distributed SDS, or would like the names of the Linde suppliers in your area, phone or write the Linde Call Center (Phone: 1400-T72-8247, Address: Linde Call Center, Linde for, P.O. Box 44, Transmint, WT 1415-10044).
	Linde, Praxar, the Linde workmark and the Flowing Airstream design are trademarks or registered trademarks of Linde pic or its affiliates. The information contained herein is offered for use by technically qualified personnel at their discretion and risk without warranty of any kind.
	Copyright © 2020, Linde plc.
Revision date	01/27/2021
NFPA health hazard	: 0 - Materials that, under emergency conditions, would offer no hazard beyond that of ordinary combusible materials.
NFPA fire hazard	: 0 - Materials that will not burn under typical fre conditions, including intrinsically noncombustible materials such as concrete, store, and sand.
NFPA instability	0 - Material that in themselves are normally stable, even     under fire conditions.
NFPA specific hazard	<ul> <li>OX - Materials that posses oxidizing properties.</li> </ul>

#### SDS US GHS DUAL BRANDED LINDE-+PRAXA9

This information is based on our sument inneededge and is inter guaranteeing any apacific property of the product nental requesements cirily. If absold not therefore be com itse the product for the purposes of health, safety and animo

EN (English US)

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## C Purolite

### SAFETY DATA SHEET

1.1. Product identifier	
Trade name or designation of the mixture	Purolite <sup>®</sup> CT252
Registration number	*
Synonyms	None.
Issue date	22-December-2011
Version number	02
Revision date	31-October-2016
Supersedes date	22-December-2011
	f the substance or mixture and uses advised against
Identified uses	Ion Exchange, Absorbent and/or Catalyst
Uses advised against	None known.
1.3. Details of the supplier of t	
1.3. Details of the supplier of t Supplier	Purolite Ltd.
supplier	
	Llantrisant Business Park Llantrisant, Wales, UK CF72 8LF
Talashana	Liantrisant, Wales, UK CF72 8LF +44 1443 229334
Telephone	+44 1443 223334 +44 1443 227073
Fax	+44 1443 227073
Manufacturer	Purolite
	150 Monument Road
	Bala Cynwyd, PA 19004 USA
Telephone	+1 610 668 9090
Fax	+1 610 668 8139
	Purplite S.R.L.
	Str. Aleea Uzinei nr.11.
	505700 Victoria
	Judetul Brasov
	Romania 505 700
Telephone	+40 26 824 3001
Fax	+40 26 824 3002
rea	-40 20 024 0002
	Purolite (China) Co. Limited,
	Qianlong Economic Development Zone,
	Gianyuan Town, Deging County,
	Huzhou City, Zhejiang, China 313216
Telephone	+86 572 842 2908
Fax	+86 572 842 5345
Contact person	SDS Coordinator
e-mail	msds@purolite.com
1.4. Emergency telephone	+1 866 387 7344
number	
	+1 760 602 8703
SECTION 2: Hazards idea	tification
2.1. Classification of the subst	ance or mixture
The mixture has been asses applies.	sed and/or tested for its physical, health and environmental hazards and the following classification
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Ingestion	Rinse mouth thoroughly. Get medical attention if any discomfort continues. Never give liquid to an unconscious person. Do not induce vomising, if vomiting occurs, the head should be kept low so that stranger work doesn't retar the kengs.
4.2. Most important symptoms and effects, both acute and defayed	Eye contact: Contact may cause initiation with redness, teating, pain, and/or blurred vision.
4.3, Indication of any Immediate medical attention and special treatment needed	Treet symptometically.
SECTION 5: Firefighting n	nedsures
General fire hazards	This product is not flammable. Thermal decomposition or combustion may liberate carbon exides and other texic gases or vapours.
<ol> <li>5.1. Extinguishing media Suitable extinguishing media</li> </ol>	Extinguish with foam, carbon cloxide, dry powdar or water log,
Unsultable extinguishing media	None known.
5,2, Special hazards arising from the substance or mixture 5,3, Advice for firefiginers	By heating and fire, harmful vapours/gases may be formed,
5.3. Advice for prenginers Special protective equipment for firefighters	Wear self-contained breathing apparatus and protective clothing.
Special fire fighting procedures	In the event of fign and/or explosion do not breathe lumes. Move containers from fire area if you can do so without task. Prevent runoff from fire control or diflution from entering streams, sowers or diffining water supply.
SECTION 6: Accidental re	lease measures
5.1. Personal precautions, prote For non-emergency personnel	icitive equipment and emergency procedures Keep unnecessary personnel away. Avoid contact with skin and eyes. For personal protection, see section 6 of the SDS.
For emergency responders	Keep unnecessary personnel away. Wear protective dothing as cescribed in Section 8 of this safety data sheet.
5,2. Environmental precautions	Prevent further leakage or spillage if safe to do so. Cover with plastic sheet to prevent spreading. Do not allow to enter drains, sewers or watercourses.
3. Methods and material for containment and cleaning up	Avoid the generation of dusts during clean-up.
outoning the occurring of	Large Spills: Dike the spilled material, where this is possible. Sweep or shovel up material and place in a clearly labeled container for waste. For waste disposal, see section 13 of the SDS.
	Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal,
	Never return spille to original containers for re-usa.
i.4. Reference to other sections	For personal protection, see section 8 of the SDS. For waste disposal, see section 13 of the SDS.
SECTION 7: Handling and	storage
7.1. Precautions for safe handling	Weer protective clothing as described in Section 8 of this safety data sheet. Observe good industrial hygisme practices. Use with adoquate vehiliation. Wash thronus thy after handling. Aveld release to the anvironment.
7.2. Conditions for safe storage, including any ncompatibilities	Keep containers tightly classed in a dry, cool and well-ventilated place. Store away from incompatible materials (see section 10 of the SDS).
3. Specific and use(s)	Ion Exchange, Absorbent ané/or Catalyst
SECTION 8: Exposure con	trois/personal protection
.t. Control parameters	
locupational exposure limits	No exposure limits noted for ingredient(s).
tiological limit values	No biological exposure limits noted for the ingradient(s).
lecommended monitoring	Follow standard monitoring proceduros.
procedures Derived no effect lavels DNELs)	Not available.
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Classification according to Regulation (EC) No 1272/2008 as amended Health hazards Serious eye damage/eye irritation Category 2 H319 - Causes serious eye Hazard summary Exposure to powder or dusts may be irritating to eyes, nose and throat. 2.2. Label elements Label according to Regulation (EC) No. 1272/2008 as amended Hazard pictograms

# Waming

H319 Precautionary stater Prevention

P264 P280 Response

Signal word Hazard statements Causes serious eye irritation. Wash thoroughly after handling. Wear eye protection/face protection. P305 + P351 + P338

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing, if yes irritation exists: Get medical advice/attention. Store away from incompatible materials, P337 + P313 Storage Disposal P501 Dispose of contents/container in accordance with local/regional/national/international regulations Supplemental label information None. Not a PBT or vPvB substance or mixture. 2.3. Other hazards SECTION 3: Composition/information on ingredients

3.2. Mixtures General Information % CAS-No. / EC REACH Registration No. INDEX No. Notes Chemical name Polystyrene sulfonic acid 35 - 65 69011-20-7 Classification: Eye Irrit, 2;H319 Water 35 - 65 7732-18-5 231-791-2 Classification: List of abbreviations and symbols that may be used above CLP. Regulation No. 1272/2008. 8: This substance has been assigned Union workplace exposure limit(s). M: M-factor PBT: persistent, bioaccumulative and toxic substance. vP-8: very persistent and very bioaccumulative substance. vP-9: very persistent and very bioaccumulative substance. vP-9: very persistent and very bioaccumulative substance. very persistent and very persistent

SECTION 4: First aid measures If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. G neral information A1. Description of first aid measures
 Inhalation
 Move into fresh air and keep at rest. Get medical attention if any disconfort confinues.
 Skin contact
 Wash of immediately units visit soap and plenty of water. If imitation persists get medical attention.
 Eye contact
 Immediately units with plenty of water for at least. To imites. If easy to do, remove contact lenses.
 If eye initiation persists, get medical attention.

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Predicted no effect	Not avaitable.
concentrations (PNECs)	
Exposure guidelines	This material does not have astablished exposure limits.
8.2. Exposura controis	
Appropriate engineering controls	Provide adaguate ventilation. Provide ayewash statlen.
Individual protection measures, General information	such as personal protective equipment Personal protection equipment should be chosen according to the CEN standards and in discussion with the suppler of the personal protective aquipment. Personal protective equipment
	should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.
#ye/face protection	Wear safety glasses with side shields (or goggles).
Skin protection	
- Hand protection	For prolonged or repeated with oxnitor use suifable protective gloves. SPECIFIC RECOMMENDATIONS. Breaktinough time: > 10 min (EN 374-2 Class 1). Suitable gloves sna the recommended by the glove suppler.
- Other	Wear appropriate clothing to prevent repeated or protoriged skin contact,
Respiratory protection	No personal respiratory protective equipment normally required.
Thermal hazarda	None known.
Hygiene measures	Avoid contact with eyes. Handle in accordance with pool industrial hygiene and safety practices. Always costrave good portscall hygiene mosaures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work cloating and protective evidpment to remove excitaminants.
Environmental exposure controls	Environmental manager must be informed of all major spillages,
SECTION 9: Physical and	chemical properties
9.1. Information on basic physic	
Appearance	Beads.
Physical state	Solid.
Form	Solid. Beads.
Colour	Gold, Amber, Light brown, Dark brown, Black, Green,
Odour	Odourless.
Odour threshold	Not available.
рH	Apidic
Melting point/freezing point	Not availabla.
initizi bolling point and boiling range	Not available.
Flash point	Not evallable.
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.
Upper/lower flammability or exp	
Flammability fimit - lower {%)	Not available.
Flammability limit - upper (%)	Not available.
Vapour pressure	Not applicable.
Vapour density	Not available,
Relative density	1.15 - 1.3
Solublity(ies)	None.
Partition coefficient (n-octanol/water)	No data available.
Auto-Ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
≝xplosive properties	Not explosive.
Oxidising properties	Not exidising,

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9.2. Other information	No rejavant additional information available.
SECTION 10: Stability and	reactivity
10.1. Reactivity	The product is stable and non reactive under normal conditions of use, storage and transport.
10.2. Chemical stability	Matarial is stable under normal conditions.
10.3. Possibility of hazardous reactions	No dangarous reaction known under conditions of normal use.
18.4. Conditions to avoid	Heat, sparks, flames, exevated temperatures. Contact with incompatible materials.
18,5, incompatible materials	Strong oxidising agents. Nitric acld.
18,6, Hazardous decomposition products	Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours.
SECTION 11: Toxicologica	Information
General information	Occupational exposure to the substance or mixture may cause adverse effects.
Information on likely routes of e	
Inhalation	Under normal conditions of intended use, this material is not expected to be an initialation hazard, Inhatation of duste may cause respiratory initiation,
Skin contact	May cause mild skin initiation. Eye
contact	Causes serious eye irritation.
Ingestion	May cause discomfort if swallowed.
Symptoms	Eye contact: Contact may cause instalion with redness, learing, pain, ana/or blurred vision.
11.1. Information on toxicologica	l effects
Acute toxicity	May cause discomfort if swailowed.
Skin corrosion/irritation	Prolonged skin contact may cause temporary initation.
Serious eye damageleye Imitation	Causes serious eye initiation.
Respiratory sensitisation	Due to partial or complete teck of data the classification is not possible.
Skin sensitisation	Due to partial or complete lack of data the classification is not possible.
Germ cell mutagenicity	Due to partial or complete lack of data the classification is not possible.
Carcinogenicity	Due to partial or complete lack of data the classification is not possible.
Reproductive loxicity	Due to partial or complete lack of cata the classification is not possible.
Specific target organ toxicity - single exposure	Due to parSal or complete lack of date the classification is not possible.
Specific target organ toxicity - repeated exposure	Due to partial or complete lack of data the classification is not possible.
Aspiration hazard	Due to paritai or complete lack of data the classification is not possible.
Mixture versus substance Information	Not available.
Other information	Not available.
SECTION 12: Ecological in	formation
2.1. Taxielty	The product is not classified as environmentally hazardous. However, this does not exclude the
	possibility that large or frequent spills can have a harmful or damaging effect on the environment.
12.2. Porsistonce and degradability	No data avallable.
12,3. Bloaccumulative potential	No cata available.
Partition coefficient n-octanol/water (log Kow)	No deta availaide.
Bisconcentration factor (BCF)	Not available.
12.4. Mobility in soll	No data available.
Mobility In general	No data available.
12.5. Results of PBT and vPvB assessment	Not a PBT or vPvB substance or mixture.
assessment 12.6. Other adverse effects	No other adverse environmental effects (e.g. ozona depletion, photochemical ozone creation
12.0. Uner advorse enects	potential, endocrino disruption, global warning potential) are expected from this component.
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National regulations	Follow national regulation for work with chemical agents.
15.2. Chemical safety assessment	No Chemical Safety Assessment has been carried out.
SECTION 16: Other Inform	ation
List of abbreviations	DNEL: Derived No-Effect Level.
	PNEC: Precided No-Effect Concentration, PBT; Persistent, bisecoundative and taxle, vPvB; Very Persistent and very Boccoundative.
References	Not available.
Information on evaluation method leading to the classification of mixture	The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available.
Full text of any H-statements not written out in full under Sections 2 to 15	HS19 Causes serious eye initation.
Training information	Follow training instructions when handling this material.
Further Information	This mixture is exempted from Registration according to the provisions of Title II and VI and Article 2(9) of REACH
Disclaimer	The information provided in this addy data shock is based on current knowledge shoult the product and current legal requirements and standards. In values geneficially to hashin series and environmental requirements and standards, may not deshify all hazards associated with the product of the scene on tablese, do not signify any working with regards to the properties of the product of the scene on tablese, do not signify any working with regards to the properties of the product of as solublab for other purposes and such other usage may cause take not meniment in the select data solublab for other purposes and such other usage may cause take not meniment. This selectly data should be the product the select data solublab for other purposes and such other usage may cause take not meniment. The selectly data should be the product the select data solublab for other purposes and such other usage may cause take not meniment. The selectly data solution of the purposes and such other usage may cause takes not meniment.

SECTION 13: Disposal co	naveranona
13.1. Waste treatment methods Residual waste	Disease of in anomaly with level convictions
	Dispose of in accordance with local regulations.
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposel.
EU wasla code	Weste access should be assigned by the user based on the application for which the product was used.
Disposal methods/information	Collect and reclatm or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with locativegromal/hational/international regulations.
SECTION 14: Transport in	formation
ADR	
14.1 14.0.: Not regulated as	s dangerous goods.
RID 14.1 14.6.: Not regulated a:	a deserve records
ADN	s cangerous goods.
14,1, - 14,6.: Not regulated a	e disservoire monite
IATA	a dangardus gooda.
(4.1 14.6.: Not regulated a:	a dangerous goods.
MDG	
14.1 14.6 Not regulated a	e dangerous goods.
14.7. Transport in bulk	Not applicable.
according to Annex II of Marpol and the IBC Code	
and the list code	
SECTION 15: Regulatory i	nformation
15.1. Safety, health and environ	mental regulations/logislation specific for the substance or mixture
EU regulations	
	309 on substances that deplete the ozone layer, Annex I and II, as amended
Not listed,	N. D
Not listed.	04 On persisient organic poliutante, Annex i as emended
	2 concorning the export and import of dangerous chemicals, Annex I, Part 1 as amended
Not listed.	
Regulation (EU) No. 649/20	2 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended
Not listed.	
Not listed.	2 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended
	2 concoming the export and import of dangerous chemicals, Annex V as amended
Not listed.	
Regulation (EC) No. 166/201	36 Annex II Pollutant Release and Transfer Registry, as amended
Not listed.	
	106, REACH Article 59(10) Candidate List as currently published by ECHA
Nol listed.	
Authorisations	
	06, REACH Annex XIV Substances subject to authorisation, as amonded
Not listed.	
Restrictions on use	
	N6, REACH Annex XVII Substances subject to restriction on marketing and use as amended
Not listed. Directive 2004/37/EC: on the	e protection of workers from the risks related to exposure to carcinogens and mulagens at
work, as amended.	· · · · · · · · · · · · · · · · · · ·
Not listed.	
Other EU regulations	
Directive 2012/16/EU on ma	jor accident hazards involving dangerous substances, as amended
Not listed.	
Other regulations	The product is classified and labelled in accordance with EC directives or respective national (law This Sarkey last Sheet compiles with the requirements of Regulation (EC) No 1907/2008, as amended,
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