

Material Safety Data Sheet

Material Name: Zinc Sulfate, Monohydrate

ID: C1-163

*** Section 1 - Chemical Product and Company Identification ***

Part Number: Technical Grade -- Granular, Prilled, and Powder Form

Chemical Name: Zinc Sulfate, Monohydrate

Product Use: For Commercial Use

Synonyms: Sulfuric acid, zinc salt (1:1), monohydrate; Zinc mesosulfate (ZnH₂SO₅).

Manufacturer Information

Chem One Corporation (Importer of record)
8017 Pinemont Drive, Suite 100
Houston, Texas 77040-6519

Phone: (713) 896-9966
Fax: (713) 896-7540
Emergency # 1-800-424-9300

General Comments

NOTE: Emergency telephone numbers are to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure, or accident involving chemicals. All non-emergency questions should be directed to customer service.

*** Section 2 - Composition / Information on Ingredients ***

CAS #	Component	Percent
7446-19-7	Zinc Sulfate Monohydrate	> 96

Component Related Regulatory Information

This product may be regulated, have exposure limits or other information identified as the following: Zinc sulfate (7733-02-0), Zinc compounds.

Component Information/Information on Non-Hazardous Components

This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).

*** Section 3 - Hazards Identification ***

Emergency Overview

Zinc Sulfate Monohydrate is a white solid which comes in granular or powder form. Harmful if swallowed. May cause irritation to the respiratory tract, eyes, and skin. Zinc Sulfate Monohydrate is not flammable. Use extinguishing media suitable for surrounding fire. When heated to decomposition this product emits toxic fumes of sulfur oxides and zinc oxides. Firefighters should wear full protective clothing including self contained breathing apparatus.

Hazard Statements

WARNING! HARMFUL IF SWALLOWED. MAY CAUSE IRRITATION TO THE RESPIRATORY TRACT, EYES, AND SKIN. INHALATION OF FUMES FROM THERMAL DECOMPOSITION MAY CAUSE METAL FUME FEVER. Do not breathe dusts. Do not allow product to contact eyes, skin, or clothing. Keep in tightly closed container. Use with adequate ventilation. Wash thoroughly after handling.

Potential Health Effects: Eyes

Dust or fumes may cause moderate, temporary eye irritation. Symptoms may include redness, pain, tearing, and conjunctivitis.

Potential Health Effects: Skin

Prolonged and/or repeated skin contact with this product may cause irritation/dermatitis. Symptoms may include redness, itching, swelling, and boils.

Potential Health Effects: Ingestion

Ingestion may produce gastrointestinal symptoms of nausea, cramps, diarrhea, and vomiting.

Potential Health Effects: Inhalation

Inhalation of this product may cause respiratory tract irritation. Inhalation of fumes may cause metal fume fever, an illness which lasts less than 48 hours. Symptoms are similar to those of the flu and include fever, chills, sweats, dry mouth, headache, nausea, vomiting, cough, muscle aches and pains, weakness, and difficulty breathing. These symptoms may also result from breathing finely divided dusts.

HMIS Ratings: Health: 2 Fire: 0 Reactivity: 0 Personal Protective Equipment: B chemical goggles/impervious gloves

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe * = Chronic hazard

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*** Section 4 - First Aid Measures ***

First Aid: Eyes

In case of eye contact, flush with plenty of water for 15 minutes. If irritation persists, seek medical attention.

First Aid: Skin

If irritation should occur, wash gently and thoroughly with water and non-abrasive soap. If irritation persists, seek medical attention.

First Aid: Ingestion

Get immediate medical attention. DO NOT INDUCE VOMITING. Have victim rinse mouth thoroughly with water, if conscious. Never give anything by mouth to a victim who is unconscious or having convulsions. Contact a physician or poison control center immediately.

First Aid: Inhalation

If symptoms are experienced, remove source of contamination or move victim to fresh air. If the affected person is not breathing, apply artificial respiration. If symptoms persist, obtain medical advice immediately.

First Aid: Notes to Physician

Provide general supportive measures.

*** Section 5 - Fire Fighting Measures ***

Flash Point: Not combustible.

Method Used: Not applicable.

Upper Flammable Limit (UEL): Not applicable.

Lower Flammable Limit (LEL): Not applicable.

Auto Ignition: Not applicable.

Flammability Classification: Not applicable.

Rate of Burning: Not applicable.

General Fire Hazards

This material will not burn.

Hazardous Combustion Products

When heated to decomposition this product emits toxic fumes of sulfur oxides and zinc oxides.

Extinguishing Media

Use any method suitable for surrounding fire.

Fire Fighting Equipment/Instructions

Firefighters should wear full protective clothing including self contained breathing apparatus.

NFPA Ratings: Health: 2 Fire: 0 Reactivity: 0 Other:

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

*** Section 6 - Accidental Release Measures ***

Containment Procedures

Stop the flow of material, if this is without risk. Contain the discharged material. If sweeping of a contaminated area is necessary use a dust suppressant agent, which does not react with product.

Clean-Up Procedures

Wear appropriate protective equipment and clothing during clean-up. Shovel the material into waste container. Thoroughly wash the area after a spill or leak clean-up. Neutralize spill area with soda ash or lime. Avoid contamination of soil, and prevent spill residue from running to groundwater or storm drains.

Evacuation Procedures

Evacuate the area promptly and keep upwind of the spilled material. Isolate the spill area to prevent people from entering. Keep materials that burn away from spilled material. In case of large spills, follow all facility emergency response procedures.

Special Procedures

Remove soiled clothing and launder before reuse. Avoid all skin contact with the spilled material. Have emergency equipment readily available.

*** Section 7 - Handling and Storage ***

Handling Procedures

All employees who handle this material should be trained to handle it safely. Do not breathe dust. Avoid all contact with skin and eyes. Use this product only with adequate ventilation. Wash thoroughly after handling.

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*** Section 7 - Handling and Storage (Continued) ***

Storage Procedures

Keep container tightly closed when not in use. Store containers in a cool, dry location, away from direct sunlight, sources of intense heat, or where freezing is possible. Material should be stored in secondary containers or in a diked area, as appropriate. Store containers away from incompatible chemicals (see Section 10, Stability and Reactivity). Storage areas should be made of fire-resistant materials. Post warning and "NO SMOKING" signs in storage and use areas, as appropriate. Use corrosion-resistant structural materials, lighting, and ventilation systems in the storage area. Floors should be sealed to prevent absorption of this material. Inspect all incoming containers before storage, to ensure containers are properly labeled and not damaged. Have appropriate extinguishing equipment in the storage area (i.e., sprinkler system, portable fire extinguishers).

Empty containers may contain residual particulates; therefore, empty containers should be handled with care. Do not cut, grind, weld, or drill near this container. Never store food, feed, or drinking water in containers that held this product. Keep this material away from food, drink and animal feed. Do not store this material in open or unlabeled containers. Limit quantity of material stored.

*** Section 8 - Exposure Controls / Personal Protection ***

Exposure Guidelines

A: General Product Information

No additional information.

B: Component Exposure Limits

The exposure limits given are for Particulates Not Otherwise Classified.

ACGIH: 10 mg/m³ TWA (Inhalable fraction)

3 mg/m³ TWA (Respirable fraction)

OSHA: 15 mg/m³ TWA (Total dust)

5 mg/m³ TWA (Respirable fraction)

DFG MAKs 4 mg/m³ TWA (Inhalable fraction)

1.5 mg/m³ TWA (Respirable fraction)

Engineering Controls

Use mechanical ventilation such as dilution and local exhaust. Use a corrosion-resistant ventilation system and exhaust directly to the outside. Supply ample air replacement. Provide dust collectors with explosion vents.

PERSONAL PROTECTIVE EQUIPMENT

Personal Protective Equipment: Eyes/Face

Wear safety glasses with side shields or chemical goggles.

Personal Protective Equipment: Skin

Use impervious gloves. Gloves should be tested to determine their suitability for prolonged contact with this material.

Personal Protective Equipment: Respiratory

None required where adequate ventilation conditions exist. If airborne concentrations are above the applicable exposure limits, use NIOSH-approved respiratory protection.

Personal Protective Equipment: General

Wash hands thoroughly after handling material. Do not eat, drink or smoke in work areas. Have a safety shower or eye-wash fountain available.

*** Section 9 - Physical & Chemical Properties ***

Physical Properties: Additional Information

The data provided in this section is to be used for product safety handling purposes. Please refer to Product Data Sheets, Certificates of Conformity or Certificates of Analysis for chemical and physical data for determinations of quality and for formulation purposes.

Appearance:	White	Odor:	Odorless
Physical State:	Solid	pH:	4.5 (saturated solution)
Vapor Pressure:	Practically zero	Vapor Density:	Not applicable
Boiling Point:	Not applicable	Melting Point:	212 deg F (100 deg C)
Solubility (H₂O):	1.7 kg/L	Specific Gravity:	1.97 (water = 1)

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*** Section 9 - Physical & Chemical Properties (Continued) ***

Freezing Point: Not applicable	Particle Size: 1000-3360 microns (granular); approx. 149 microns (powder)
Softening Point: Not applicable	Bulk Density: Not available
Molecular Weight: 179.40	Chemical Formula: ZnH ₂ SO ₅

*** Section 10 - Chemical Stability & Reactivity Information ***

Chemical Stability

Stable.

Chemical Stability: Conditions to Avoid

High temperatures, moisture, and incompatible materials.

Incompatibility

Incompatible with lead, calcium, and strontium salts, borax, alkali carbonates and hydroxides, and tannins.

Hazardous Decomposition

When heated to decomposition this product emits toxic fumes of sulfur oxides and zinc oxides.

Hazardous Polymerization

Will not occur.

*** Section 11 - Toxicological Information ***

Acute and Chronic Toxicity

A: General Product Information

Dust or fumes may cause moderate, temporary eye irritation. Symptoms may include redness, pain, tearing, and conjunctivitis. Prolonged and/or repeated skin contact may cause irritation/dermatitis. Symptoms may include redness, itching, swelling, and boils. Ingestion may produce gastrointestinal symptoms of nausea, cramps, diarrhea, and vomiting. Ingestion of large amounts may cause anemia, acute pulmonary edema, gastric erosion, renal damage, decrease in blood pressure, increase in pulse rate, and possibly death. Since zinc sulfate is an emetic (can induce vomiting), severe poisoning is probably unlikely. Inhalation of this product may cause respiratory tract irritation. Inhalation of fumes may cause metal fume fever, an illness which lasts less than 48 hours. Symptoms are similar to those of the flu and include fever, chills, sweats, dry mouth, headache, nausea, vomiting, cough, muscle aches and pains, weakness, and difficulty breathing. These symptoms may also result from breathing finely divided dusts.

Chronic exposure to large quantities of zinc sulfate, monohydrate dust or fumes may cause dermatitis, boils, conjunctivitis, and gastrointestinal disturbances.

B: Component Analysis - LD₅₀/LC₅₀

Zinc Sulfate Monohydrate (7446-19-7)

LD₅₀ (Oral-Mouse) 245 mg/kg

Zinc Sulfate (7733-02-0)

LD₅₀ (Oral-Rat) 2949 mg/kg; LD₅₀ (Oral-Rat): 1710 mg/kg; LD₅₀ (Oral-Mouse) 57 mg/kg; LD₅₀ (Oral-Mouse) 245 mg/kg; LD₅₀ (Oral-Rabbit) 2 gm/kg; LD₅₀ (Intraperitoneal-Mouse) 29060 µg/kg; LD₅₀ (Intraperitoneal-Mouse) 71,750 mg/kg; LD₅₀ (Intraperitoneal-rat) 196 mg/kg; LD₅₀ (Intravenous-Rat) 69900 µg/kg; LD₅₀ (Intravenous-Mouse) 23300 µg/kg

B: Component Analysis - TDLo/LDLo

Zinc Sulfate Monohydrate (7446-19-7)

No data are currently available.

Zinc Sulfate (7733-02-0)

LDLo (Subcutaneous-Rat) 330 mg/kg; LDLo (Subcutaneous-Mouse) 1500 mg/kg; LDLo (Subcutaneous-Dog, adult) 78 mg/kg; LDLo (Subcutaneous-Rabbit) 300 mg/kg; LDLo (Intravenous-Rat) 50 mg/kg; LDLo (Intravenous-Rabbit) 23 mg/kg; LDLo (Intravenous-Dog, adult) 66 mg/kg; TDLo (Oral-Human) 45 mg/kg/7 days-continuous: Cardiovascular effects, Gastrointestinal tract effects, Blood effects; TDLo (Oral-Human) 106 mg/kg: Cardiovascular effects, Pulmonary system effects, Gastrointestinal tract effects; TDLo (Oral-Man) 180 mg/kg/6 weeks-intermittent: Blood effects; TDLo (Oral-Woman) 3120 mg/kg/43 weeks-intermittent: Blood effects, Systemic effects; TDLo (Oral-Rat) 74 mg/kg/3 days-intermittent: Musculoskeletal: other changes; Nutritional and Gross Metabolic: changes in calcium TDLo (Oral-Rat) 1200 mg/kg/60 days-continuous: Liver: other changes: Nutritional and Gross Metabolic: changes in metals, not otherwise specified;

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*** Section 11 - Toxicological Information (Continued) ***

B: Component Analysis - TDLo/LDLo (continued)

Zinc Sulfate (7733-02-0) [continued]

TDLo (Oral-Rat) 333 mg/kg: female 1-18 day(s) after conception: Reproductive: Fertility: post-implantation mortality (e.g. dead and/or resorbed implants per total number of implants); TDLo (Oral-Domestic animals [Goat, Sheep]) 193 g/kg (female 6-20 weeks post): Reproductive effects; TDLo (Oral-Mammal-Domestic) 7110 mg/kg/4 weeks-intermittent: Gastrointestinal: changes in structure or function of endocrine pancreas, hypermotility, diarrhea; Related to Chronic Data: death; TDLo (Subcutaneous-Hamster) 15 mg/kg (female 8 days post): Teratogenic effects; TDLo (Subcutaneous-Rabbit, adult) 3625 mg/kg/5 days-continuous: Equivocal tumorigenic agent; TDLo (Subcutaneous-Rabbit) 3625 µg/kg/5 days-continuous: Tumorigenic: equivocal tumorigenic agent by RTECS criteria, tumors at site of application; TDLo (Subcutaneous-Hamster) 15 mg/kg: female 8 day(s) after conception: Reproductive: Effects on Embryo or Fetus: fetotoxicity (except death, e.g., stunted fetus), Specific Developmental Abnormalities: cardiovascular (circulatory) system; TDLo (Intravenous-Hamster) 2 mg/kg: female 8 day(s) after conception: Reproductive: Effects on Embryo or Fetus: fetotoxicity (except death, e.g., stunted fetus); TDLo (Intravaginal-Rabbit) 34573 µg/kg: female 1 day(s) pre-mating: Reproductive: Fertility: female fertility index (e.g. # females pregnant per # sperm positive females; # females pregnant per # females mated)

Carcinogenicity

A: General Product Information

No human data available. In rabbits, injections of the anhydrous form of zinc sulfate under the skin produced tumors. Zinc sulfate did not cause tumors in animals by oral, dermal, or inhalation routes. There is no evidence that zinc sulfate is a human carcinogen.

B: Component Carcinogenicity

None of this product's components are listed by ACGIH, IARC, OSHA, NIOSH, or NTP.

Epidemiology

No information available.

Neurotoxicity

No information available.

Mutagenicity

No data available for zinc sulfate, monohydrate. However the anhydrous and heptahydrate forms tested positive in several in vivo and in vitro tests.

Teratogenicity

No reproductive data for the monohydrate in humans or experimental animals. The anhydrous form caused developmental toxicity when administered orally to rats and when injected into hamsters. The heptahydrate affected male fertility when given in very high doses to rats and mice, and also affected the fallopian tubes in female mice.

Other Toxicological Information

None available.

*** Section 12 - Ecological Information ***

Ecotoxicity

A: General Product Information

Zinc products are harmful to aquatic life at low concentrations. Zinc poisoning causes inflamed gills in fish.

B: Ecotoxicity

No ecotoxicity data are available for Zinc Sulfate Monohydrate. The following data are available for the anhydrous form of Zinc Sulfate:

LC₅₀ (cichlid) 96 hours = 13 ppm; Lethal (stickleback) 120 hours = 0.3 mg/l as Zn; water type not specified; LC₅₀ (*Salmo gairdneri* rainbow trout) 48 hours = 4.76 mg/L, hard water (continuous flow conditions); LC₅₀ (*Salmo gairdneri* rainbow trout) 96 hours = 4.6 ppm; fresh water (conditions of bioassay not specified); TLm (*Anguilla japonica* Japanese eel) 24 hours = 29 mg/L (conditions of bioassay not specified); TLm (*Anguilla japonica* Japanese eel) 48 hours = 14 mg/L (conditions of bioassay not specified); TLm (*Anguilla japonica* Japanese eel) 96 hours = 11 mg/L (conditions of bioassay not specified); TLm (*Noemacheilus montanus*) 24 hours = 2.37 ppm (conditions of bioassay not specified); TLm (*Noemacheilus montanus*) 48 hours = 1.50 ppm (conditions of bioassay not specified); TLm (*Noemacheilus montanus*) 72 hours = 0.95 ppm (conditions of bioassay not specified); TLm (*Noemacheilus montanus*) 96 hours = 0.62 ppm (conditions of bioassay not specified)

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*** Section 12 - Ecological Information ***

B: Ecotoxicity (continued)

LC₅₀ (*Scylla serrata* on immature marine edible crab) 24 hours = 741.3 ppm (static bioassays); LC₅₀ (*Scylla serrata* on immature marine edible crab) 48 hours = 645.7 ppm (static bioassays); LC₅₀ (*Scylla serrata* on immature marine edible crab) 72 hours = 489.8 ppm (static bioassays); LC₅₀ (*Scylla serrata* on immature marine edible crab) 96 hours = 398.1 ppm (static bioassays); LC₅₀ (*Lebistes reticulatus* male) 96 hours = 300 mg/L (Conditions of bioassay not specified); LC₅₀ (*Lebistes reticulatus* female) 96 hours = 278 mg/L (Conditions of bioassay not specified); LC₅₀ (*Labeo rohita* freshwater fish) 96 hours = 65 mg/L/96 hr (small fish); LC₅₀ (*Labeo rohita* freshwater fish) 96 hours = 77.5 mg/L (large fish) conducted in static renewal bioassays; A low but significant mortality has been found among rainbow trout exposed continuously for 4 months to constant concentrations of 0.3 of the 7-day LC₅₀; Laboratory studies of avoidance reactions have shown that Atlantic salmon and rainbow trout may avoid concentrations of zinc in soft water that are 0.14-0.01 of the; 7-day LC₅₀; Avoidance reactions have also been observed at 0.35-0.43 of the 7-day LC₅₀ by migrating Atlantic salmon in a river polluted with copper and zinc; Carp and goldfish show avoidance of 0.3-0.45 of lethal concentrations under laboratory conditions; Maximum allowable toxicant concentration (MATC) for fathead minnow 0.032-.18. Application factor for extrapolating 96-hour TL₅₀ data 0.03-0.02; Daphnids suffered decreased reproduction when exposed to 0.102 ppm Zn for 3 weeks as did fathead minnows exposed to 0.18 ppm for 10 months. Freshwater should not exceed 0.003 of the 96 hour LC₅₀ and marine waters 0.01 of the 96 hour LC₅₀

Environmental Fate

Zinc compounds are persistent in aquatic environments. Zinc compounds are accumulated by some organisms but are not considered to be bioconcentrative.

*** Section 13 - Disposal Considerations ***

US EPA Waste Number & Descriptions

A: General Product Information

Material, if discarded, is not expected to be a characteristic hazardous waste under RCRA.

B: Component Waste Numbers

No EPA Waste Numbers are applicable for this product's components.

Disposal Instructions

Review federal, provincial, and local government requirements prior to disposal. Disposal by controlled incineration or secure landfill may be acceptable.

*** Section 14 - Transportation Information ***

NOTE: The data in this section (Section 14) is meant as a guide to the overall classification of the product. However, transportation classifications may be subject to change with changes in package size. Consult shipper requirements under I.M.O., I.C.A.O. (I.A.T.A.) and 49 CFR to assure regulatory compliance.

US DOT Information

Shipping Name: Not Regulated

Hazard Class: Not Applicable

UN/NA #: Not Applicable

Packing Group: Not Applicable

Required Label(s): Not Applicable

Additional Info.: For packagings equal to or greater than 1,000 pounds this product is REGULATED as a U.S. DOT hazardous material as the following: RQ, Environmentally hazardous substances, solid, n.o.s. (Zinc Sulfate, Monohydrate), 9, UN 3077, PG III, Label CLASS 9.

United Parcel Service Shipping Information

Shipping Name: Not Regulated

Hazard Class: Not Applicable

UN/NA #: Not Applicable

Packing Group: Not Applicable

Ground Shipment Maximum Unit Quantity: Not Applicable

Required Label (s) Ground Shipments: Not Applicable

Air Shipment Maximum Net Quantity: Not Applicable

Required Label (s) Air Shipments: Not Applicable

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*** Section 14 - Transportation Information (Continued) ***

International Transportation Regulations

Canadian Transport Canada Classification: Zinc Sulfate Monohydrate is not regulated under Transport Canada.

I.M.O. Classification: Zinc Sulfate Monohydrate is not regulated under I.M.O.

*** Section 15 - Regulatory Information ***

US Federal Regulations

A: General Product Information

No additional information.

B: Component Analysis

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65) and/or CERCLA (40 CFR 302.4).

Zinc Sulfate Monohydrate (7446-19-7)

SARA 302 (EHS TPQ) There are no specific Threshold Planning Quantities for Zinc Sulfate Monohydrate. The default Federal MSDS submission and inventory requirement filing threshold of 10,000 lbs. (4,540 kg) therefore applies, per 40 CFR 370.20.

SARA 313: form R reporting required for 1.0% de minimus concentration (related to Zinc compounds)

CERCLA: final RQ = 1000 pounds (454 kg) (related to Zinc sulfate)

State Regulations

A: General Product Information

Other state regulations may apply.

B: Component Analysis - State

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS #	CA	FL	MA	MN	NJ	PA
Zinc Sulfate Monohydrate (1 related to Zinc sulfate)	7446-19-7	Yes ¹	No	Yes ¹	No	Yes ¹	Yes ¹

Other Regulations

A: General Product Information

Zinc Sulfate Monohydrate is not on the non-confidential TSCA inventory; as a hydrate of a listed compound, it is exempt from listing.

B: Component Analysis - Inventory

Component	CAS #	TSCA	DSL	EINECS
Zinc Sulfate Monohydrate	7446-19-7	No	No	No

C: Component Analysis - WHMIS IDL

The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List:

Component	CAS #	Minimum Concentration
Zinc Sulfate Monohydrate	7446-19-7	1% item 1726 (1534) (related to Zinc sulfate)

ANSI Labeling (Z129.1):

CAUTION! MAY CAUSE EYE IRRITATION. MAY CAUSE RESPIRATORY TRACT IRRITATION. PROLONGED OR REPEATED CONTACT MAY CAUSE SKIN IRRITATION. INHALATION OF FUMES IF HEATED TO DECOMPOSITION MAY CAUSE METAL FUME FEVER. Avoid breathing dusts and mists. Do not breathe fumes. Do not taste or swallow. Do not get on skin or in eyes. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling. Wear gloves, goggles, faceshields, suitable body protection, and NIOSH/MSHA-approved respiratory protection, as appropriate. **FIRST-AID:** In case of contact, immediately flush skin or eyes with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. If inhaled, remove to fresh air. If ingested, do not induce vomiting. Get medical attention. **IN CASE OF FIRE:** Use water fog, dry chemical, CO₂, or "alcohol" foam. **IN CASE OF SPILL:** Absorb spill with inert material. Place residue in suitable container. Consult Material Safety Data Sheet for additional information.

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*** Section 16 - Other Information ***

Other Information

Chem One Corp. ("Chem One") shall not be responsible for the use of any information, product, method, or apparatus herein presented ("Information"), and you must make your own determination as to its suitability and completeness for your own use, for the protection of the environment, and for health and safety purposes. You assume the entire risk of relying on this Information. In no event shall Chem One be responsible for damages of any nature whatsoever resulting from the use of this product or products, or reliance upon this Information. By providing this Information, Chem One neither can nor intends to control the method or manner by which you use, handle, store, or transport Chem One products. If any materials are mentioned that are not Chem One products, appropriate industrial hygiene and other safety precautions recommended by their manufacturers should be observed. Chem One makes no representations or warranties, either express or implied of merchantability, fitness for a particular purpose or of any other nature regarding this information, and nothing herein waives any of Chem One's conditions of sale. This information could include technical inaccuracies or typographical errors. Chem One may make improvements and/or changes in the product (s) and/or the program (s) described in this information at any time. If you have any questions, please contact us at Tel. 713-896-9966 or E-mail us at Safety@chemone.com.

Key/Legend

EPA = Environmental Protection Agency; TSCA = Toxic Substance Control Act; ACGIH = American Conference of Governmental Industrial Hygienists; IARC = International Agency for Research on Cancer; NIOSH = National Institute for Occupational Safety and Health; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration

Contact: Clare L. Welker

Contact Phone: (713)-896-9966

This is the end of MSDS # C1-163