

7032

# Material Safety Data Sheet

**Material Name: Potassium Permanganate**

**ID: C1-134**

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

**Chemical Name:** Potassium Permanganate  
**Product Use:** For Commercial Use  
**Synonyms:** Chameleon Mineral; Condy's Crystals; Permanganate de Potassium; Permanganic Acid, Potassium Salt; Purple Salt  
**Manufacturer Information**  
 Chem One Ltd. (Importer of record) Phone: (713) 896-9966  
 8017 Pinemont Drive, Suite 100 Fax: (713) 896-7540  
 Houston, Texas 77040-6519 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
7722-64-7	Potassium Permanganate	97-99.5%

**Component Related Regulatory Information**  
 This product may be regulated, have exposure limits or other information identified as the following: Manganese (7439-64-7), Manganese, elemental & inorganic Compounds, as Mn, and Manganese fume, Mn.  
**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**  
 This product is a dark purple/bronze solid that comes in crystals or free-flowing powder form. Potentially fatal if swallowed. Highly corrosive to the skin. Can cause permanent damage to the eyes. Known irritant of the respiratory system. Strong oxidizer. Contact with other combustible material may cause fire. Firefighters should use full protective equipment and clothing.

**Hazard Statements**  
 STRONG OXIDIZER. Contact with other materials may cause fire. MAY BE FATAL IF SWALLOWED OR INHALED. Can cause burns of eyes and skin. May cause respiratory tract irritation. Avoid contact with eyes and skin. Avoid breathing dusts. Wash thoroughly after handling. Keep container closed. Use with adequate ventilation. Keep from contact with clothing and other combustible materials.

**Potential Health Effects: Eyes**  
 Can cause severe eye injury. Contact can produce hardened, ulcer-like injury on eye. Conjunctivitis and bleeding may occur. In extreme cases, cloudiness or discoloration of the cornea may occur.

**Potential Health Effects: Skin**  
 Product acts as a highly corrosive agent to the skin. Contact may produce burns and/or tissue necrosis. Contact will also stain skin brown.

**Potential Health Effects: Ingestion**  
 May irritate and cause burns of the mouth and throat. Symptoms may include nausea, vomiting, stridor (high-pitched, noisy breathing), laryngeal edema, necrosis of oral and pharyngeal mucosa, slow pulse, and decreased blood pressure. Fatal oral dose is estimated at 10 grams (0.35 oz). Death may occur up to one month from the time of poisoning. If death is not immediate, jaundice and oliguria or anuria may appear.

**Potential Health Effects: Inhalation**  
 May irritate the nose, throat and respiratory tract. In severe cases, pulmonary edema may occur that could potentially lead to death. Symptoms of pulmonary edema may be delayed. Other symptoms could include sore throat, coughing, shortness of breath, and breathing.

**HMIS Ratings: Health: 3\* Fire: 0 Reactivity: 0 Personal Protective Equipment: E:** chemical goggles, impervious gloves, dust respirator  
 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 contact with eyes, rinse immediately with plenty of water for at least 15 minutes. Seek immediate medical attention if any adverse effect occurs.

### First Aid: Skin

Remove all contaminated clothing. For skin contact, wash extremely thoroughly with soap and water. Seek immediate medical attention if irritation develops or persists.

### First Aid: Ingestion

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

Remove source of contamination or move victim to fresh air. If breathing has stopped, apply artificial respiration. Get immediate medical attention.

### First Aid: Notes to Physician

Provide general supportive measures and treat symptomatically.

## \*\*\* 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

Potassium Permanganate is an NFPA Class 2 Oxidizer. This is an oxidizing material that will increase the burning rate or cause a spontaneous ignition with a combustible material. Containers may explode in fire.

### Hazardous Combustion Products

Upon heating, oxygen will be released.

### Extinguishing Media

Use very large amounts of water as needed.

### Fire Fighting Equipment/Instructions

Firefighters should wear full protective clothing including self contained breathing apparatus. Runoff from fire control or dilution water may be corrosive and/or toxic and cause pollution. Prevent the spread of any released product to combustible objects.

**NFPA Ratings: Health: 3 Fire: 0 Reactivity: 0 Other: Oxidizer**

**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. (DO NOT USE SAWDUST).

### Clean-Up Procedures

For small releases, clean-up spilled liquid wearing gloves, goggles, faceshield, and suitable body protection. Sweep-up or vacuum spilled solid. Decontaminate the area thoroughly. Test area with litmus paper to ensure neutralization. Place all spill residues in a suitable container. Thoroughly wash the area after clean-up. Prevent spill rinsate from contamination of storm drains, sewers, soil or groundwater.

### Evacuation Procedures

Evacuate the area promptly and keep upwind of the spilled material. Isolate the spill area to prevent people from entering. Keep materials which can 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.

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## \*\*\* 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.

### Storage Procedures

Keep container tightly closed when not in use. If this product is transferred into another container, only use portable containers and tools approved for oxidizing solids. 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). Store containers away from wood, cardboard boxes, and other combustible materials. Storage areas should be made of corrosion and 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). Refer to NFPA 43A, *Liquid, Solid Oxidizers*, for additional information on storage.

Empty containers may contain residual particulates; therefore, empty containers should be handled with care. Never store food, feed, or drinking water in containers which 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

Follow the applicable exposure limits.

#### B: Component Exposure Limits

The exposure limits given are for Manganese, elemental & inorganic Compounds, as Mn (7439-96-5) or Manganese fume, as Mn.

ACGIH: 0.2 mg/m<sup>3</sup> TWA

OSHA: 5 mg/m<sup>3</sup> STEL, Ceiling

NIOSH: 1 mg/m<sup>3</sup> TWA

3 mg/m<sup>3</sup> STEL

DFG MAKs 0.5 mg/m<sup>3</sup> TWA, Ceiling, Peak, 30 minutes, average value

### 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 goggles) and a face shield, if this material is made into solution.

#### Personal Protective Equipment: Skin

Wear impervious gloves, boots and coveralls to avoid skin contact.

#### Personal Protective Equipment: Respiratory

If airborne concentrations are above the applicable exposure limits, use NIOSH-approved respiratory protection. The following NIOSH Guidelines for Manganese and Compounds (as Mn) are presented for further information.

Up to 10 mg/m<sup>3</sup>: Dust and mist respirator except single-use and quarter-mask respirator or SAR.

Up to 25 mg/m<sup>3</sup>: SAR operated in a continuous in a continuous-flow mode, or powered air-purifying respirator with dust and mist filters.

Up to 50 mg/m<sup>3</sup>: Full-facepiece respirator with high-efficiency particulate filter(s), or SAR with a tight-fitting facepiece operated in a continuous-flow mode, or powered air-purifying respirator with tight-fitting facepiece and high-efficiency particulate filter, or full-facepiece SCBA, or full-facepiece SAR.

Up to 500 mg/m<sup>3</sup>: Positive pressure SAR.

Emergency or Planned Entry into Unknown Concentrations or IDLH Conditions: Positive pressure, full-facepiece SCBA, or positive pressure, full-facepiece SAR with an auxiliary positive pressure SCBA.

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## \*\*\* Section 8 - Exposure Controls / Personal Protection (Continued) \*\*\*

### Personal Protective Equipment: Respiratory (continued)

NIOSH Guidelines for Manganese and Compounds [as Mn] (continued)

Escape: Full-facepiece respirator with high-efficiency particulate filter(s), or escape-type SCBA.

NOTE: The IDLH concentration for Manganese Compounds and fume (as Mn) is 500 mg/m<sup>3</sup>.

### Personal Protective Equipment: General

Have an eyewash fountain and safety shower available in the work area.

## \*\*\* 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.

<b>Appearance:</b>	Dark purple/bronze crystals	<b>Odor:</b>	Odorless
<b>Physical State:</b>	Solid	<b>pH:</b>	Not applicable for solid
<b>Vapor Pressure:</b>	Practically zero	<b>Vapor Density:</b>	Not applicable
<b>Boiling Point:</b>	Decomposes	<b>Melting Point:</b>	420 deg C (788 deg F) [decomposes]
<b>Solubility (H<sub>2</sub>O):</b>	6.38 g/100 cc (@ 20 deg C)	<b>Specific Gravity:</b>	2.70 @ 15 deg C (H <sub>2</sub> O = 1)
<b>Freezing Point:</b>	Not available	<b>Particle Size:</b>	Not available
<b>Softening Point:</b>	Not available	<b>Bulk Density:</b>	Not available
<b>Molecular Weight:</b>	158.04	<b>Chemical Formula:</b>	KMnO <sub>4</sub>

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

### Chemical Stability

Solid is stable in air and light.

### Chemical Stability: Conditions to Avoid

Avoid high temperatures and ignition sources. Keep away from materials which can burn.

### Incompatibility

Avoid contact with acetic anhydride, alcohols, ammonium nitrate, arsenites, bromides, iodides, acids, carbon, charcoal, organic material, ferrous or mercurous salts, formaldehyde, hypophosphites, hyposulfites, sulfites, peroxides, oxalates, inorganic oxidizable materials, metal powders, wood, glycerine, phosphorous, polypropylene, reducing materials, and heat. Contact with HCl will liberate chlorine gas.

### Hazardous Decomposition

Upon heating, oxygen is released, which increases potential of fire.

### Hazardous Polymerization

Will not occur.

## \*\*\* Section 11 - Toxicological Information \*\*\*

### Acute and Chronic Toxicity

#### A: General Product Information

Acute toxicity is primarily due to its strong oxidizing activity, and to some extent, its caustic (alkaline properties). Product is an eye and skin irritant, and may cause burns. Product is a respiratory tract irritant, and inhalation may cause nose irritation, sore throat, coughing, and chest tightness and possibly, burns to the respiratory system. Inhalation exposure to high levels could cause pulmonary edema (buildup of fluid in the lungs) which could result in death. Ingestion can result in shock, pulmonary edema, and jaundice.

Chronic: Long term manganese overexposure (usually in the form of manganese oxides) may lead to an increased incidence of upper respiratory infections, lung irritation, and possible central nervous system disorders, with symptoms simulating Parkinson's disease (difficulty walking, weakness or cramps in the legs, tremors of arms and legs, memory loss, poor coordination, difficulty in speaking clearly). If high exposure continues, the respiratory system may be affected.

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

### B: Component Analysis - LD<sub>50</sub>/LC<sub>50</sub>

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**Potassium Permanganate (7722-64-7)**

Oral-rat LD<sub>50</sub>: 1090 mg/kg; Oral-mouse LD<sub>50</sub>: 2157 mg/kg; Subcutaneous-Mouse LD<sub>50</sub>: 500 mg/kg; Oral-guinea pig LD<sub>50</sub>: 1151 mg/kg; Behavioral: somnolence (general depressed activity)

**Manganese (7439-96-5):**

Oral-rat LD<sub>50</sub>: 9 g/kg

**B: Component Analysis - TDLo/LDLo**

**Potassium Permanganate (7722-64-7)**

Oral-Woman TDLo: 2400 mg/kg/day: Gastrointestinal tract effects; Oral-woman LDLo: 100 mg/kg: Vascular: BP lowering not characterized in autonomic section; Liver: hepatitis (hepatocellular necrosis), diffuse; Kidney, Urethra, Bladder: changes in tubules (including acute renal failure, acute tubular necrosis); Oral-Human LDLo: 143 mg/kg: Pulmonary system effects, Gastrointestinal tract effects; Oral-rat TDLo: 7851 mg/kg/39 weeks-intermittent: Behavioral: alteration of classical conditioning; Blood: changes in serum composition (e.g. TP, bilirubin, cholesterol); Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: true cholinesterase; Oral-mouse TDLo: 513 mg/kg: male 5 day(s) pre-mating: Reproductive: Paternal Effects: spermatogenesis (incl. genetic material, sperm morphology, motility, and count); Intratesticular-Rat TDLo: 400 mg/kg (1 day male): Reproductive effects; Oral-rabbit LDLo: 600 mg/kg; Intratesticular-gerbil TDLo: 25 mg/kg: male 1 day(s) pre-mating: Reproductive: Fertility: male fertility index (e.g. # males impregnating females per # males exposed to fertile non-pregnant females); Oral-Dog, adult LDLo: 400 mg/kg; Intravenous-Rabbit, adult LDLo: 70 mg/kg

**Carcinogenicity**

**A: General Product Information**

No information available.

**B: Component Carcinogenicity**

**Potassium Permanganate (7722-64-7)**

Potassium Permanganate is not listed by any agency as to carcinogenicity

**Manganese & inorganic Compounds as Mn and Manganese fume, as Mn (7439-96-5)**

EPA EPA-D (Not Classifiable as to Human Carcinogenicity - inadequate human and animal evidence of carcinogenicity or no data available)

**Epidemiology**

No information available.

**Neurotoxicity**

Combination of ingestion and inhalation can incur harmful effects on the central nervous system. Symptoms may include leg cramps, tremors, difficult walking, poor coordination, memory loss, questionable judgment and unstable emotions.

**Mutagenicity**

Potassium Permanganate has caused mutations in short-term tests of bacteria and mouse cells.

**Teratogenicity**

In animal studies manganese compounds were not teratogenic. Victims of manganese poisoning have reported impotence and decreased sexual desire.

**Reproductive Data:**

**Potassium Permanganate (7722-64-7)**

Oral-mouse Micronucleus test: 205 mg/kg/24 hours-continuous; Oral-mouse Sperm Morphology: 513 mg/kg/5 days-continuous; Subcutaneous-Mouse LD<sub>50</sub>: 500 mg/kg; Mutation in microorganisms-Bacteria - Salmonella typhimurium: 10 µL/tube; DNA Damage-Escherichia coli 200 mmol/L; DNA Repair-Bacillus subtilis 17 mg/L; Mutation in Microorganisms-other microorganisms 10 ppm; DNA repair-Bacteria - Escherichia coli: 625 µg/well; Phage inhibition capacity: Bacteria - Escherichia coli: 200 µmol/L

**Other Toxicological Information**

Workers exposed to airborne manganese have had a higher incidence of pneumonia.

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## \*\*\* Section 12 - Ecological Information \*\*\*

### Ecotoxicity

#### A. General Product information

Harmful to aquatic life in very low concentrations

#### B: Aquatic Toxicity

##### Potassium Permanganate (7722-64-7)

LC<sub>50</sub> (96 hr) *Carassius auratus*- gold fish: 3.6 mg/L. Conditions of bioassay not specified; LC<sub>50</sub> (96 hr) *Ictalurus punctatus*- channel catfish: 0.75 mg/L Conditions of bioassay not specified; LC<sub>50</sub> (96 hr) *Leopomis macrochirus*-bluegill sunfish: 2.7-3.6 mg/L Conditions of bioassay not specified. LC<sub>50</sub> (24 hours) *Mesocyclops leuckartii* 2.45 mg/L (static bioassay @ 25°C); LC<sub>50</sub> (24 hours) *Chanos chanos* milkfish 1.4886 mg/L (static bioassay @ 25°C, 30% salinity, seawater);

## \*\*\* Section 13 - Disposal Considerations \*\*\*

### U.S. PA Water Number & Descriptions

#### A: General Product Information

As shipped, this product is considered an ignitable waste, D001, under RCRA.

#### B. Component Waste Numbers

No EPA Waste Numbers are applicable for this product.

### Disposal Instructions

All wastes must be handled in accordance with local, State and Federal regulations. This material can be converted to a less hazardous material by weak reducing agents, followed by neutralization.

## \*\*\* 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: Potassium permanganate

Hazard Class: 5.1 (oxidizer)

UN/NA #: UN 1490

Packing Group: II

Required Label(s): Oxidizer

RQ Quantity: 100 lb (45.4 kg)

### United Parcel Service Shipping Information

Shipping Name: Potassium permanganate

Hazard Class: 5.1 (oxidizer)

UN/NA #: UN 1490

Packing Group: II

Ground Shipment Maximum Quantity: 12.5 kg (27.5 lbs)

Required Label (s) Ground Shipments: Oxidizer

The Limited quantities of Division 5.1 materials exception [49 CFR 173.153 (b)] may be applicable to ground shipments of Potassium Permanganate if it is properly packaged. Hazards labels are not required for ground shipments if this exception is met.

Air Shipment Maximum Quantity: 5 kg (11 lbs)

Required Label (s) Air Shipments: Oxidizer

The Limited quantities of Division 5.1 materials exception [49 CFR 173.153 (b)] may be applicable to air shipments of Potassium Permanganate if it is properly packaged. Hazards labels are still required for air shipments if this exception is met.

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

### International Transportation Regulations

**Canadian Transport Canada Classification:** Potassium Permanganate is considered as dangerous goods; use the above U.S. DOT information for the preparation of Canadian Shipments.

**I.M.O. Classification:** Potassium permanganate, 5.1, UN 1490, PG II, EmS No. 5.1-06, MFAG Table No. 2.4, (IMDG Code page 5173), Stowage Category D - "Separated from" powdered metals, ammonium compounds, cyanides, hydrogen peroxides and superoxides.

## \*\*\* 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).

#### Potassium Permanganate (7722-64-7)

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

CERCLA: final RQ = 100 pounds (45.4 kg)

### State Regulations

#### A: General Product Information

##### California Proposition 65

Potassium Permanganate is not on the California Proposition 65 chemical lists.

#### 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
Potassium Permanganate	7722-64-7	No	Yes	Yes	Yes	No	No

### Other Regulations

#### A: General Product Information

The U.S. Drug Enforcement Agency requires reporting on the sale of Potassium Permanganate and an export license. Potassium Permanganate is a List II chemical (formerly titled "essential chemicals"). If you import, export or distribute Potassium Permanganate in the U.S., you are responsible for the record keeping and reporting requirements set forth in the Chemical Diversion and Trafficking Act of 1988.

#### B: Component Analysis - Inventory

Component	CAS #	TSCA	DSL	EINECS
Potassium Permanganate	7722-64-7	Yes	Yes	Yes

#### C: Component Analysis - WHMIS IDL

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

Component	CAS #	Minimum Concentration
Potassium Permanganate	7722-64-7	1%

**ANSI LABELING (Z129.1): DANGER! STRONG OXIDIZER. CONTACT WITH OTHER MATERIALS MAY CAUSE FIRE MAY BE FATAL IF SWALLOWED. CAUSES SKIN, EYE AND RESPIRATORY TRACT IRRITATION OR BURNS. HARMFUL IF INHALED.** Keep from contact with clothing and other combustible materials. Do not taste or swallow. Do not get on skin or in eyes. Avoid breathing vapors or mist. 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, CO<sub>2</sub>, 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:** Mr. Clare L. Welker

**Contact Phone:** (713) 896-9966

**Revision Log**

08/23/00 4:45 PM SEP Changed company name, Sect 1 and 16, from Corporation to Ltd.

This is the end of MSDS # C1-134

**DISTRIBUTED BY:**



**PRODUCERS** chemical company

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