

12-2000

**Material Safety Data Sheet****Material Name: Copper Oxide or Cupric Oxide****ID: C1-118****\*\*\* Section 1 - Chemical Product and Company Identification \*\*\*****Chemical Name:** Copper Oxide or Cupric Oxide**Product Use:** For Commercial Use**Synonyms:** Copper (II) Oxide, Black Copper Oxide, Cupric Oxide**Manufacturer Information**

Chem One Corporation (Importer of record)

8017 Pinemont Drive, Suite 100

Houston, Texas 77040-6519

Phone: (713) 896-9966

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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 |
|-----------|------------------------------|---------|
| 1317-38-0 | Copper Oxide or Cupric Oxide | > 99    |

**Component Related Regulatory Information**

This product may be regulated, have exposure limits or other information identified as the following: Copper (7440-50-8) and inorganic compounds, as Cu, Copper (7440-50-8) dusts and mists, as Cu and Copper fume, Cu.

**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**

Copper Oxide is an odorless, black crystalline powder. The primary health hazard associated with this product is the potential for irritation of the eyes, skin, nose and other tissues which come in contact with dusts or particulates of this product. This product is not flammable or reactive. Thermal decomposition of this product produces irritating vapors and toxic gases. Emergency responders should wear proper personal protective equipment for the releases to which they are responding.

**Hazard Statements**

HARMFUL OR FATAL IF SWALLOWED. Can cause irritation of eyes, skin, and respiratory tract. 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**

Exposure to particulates or solution of this product may cause redness and pain. Prolonged contact may cause conjunctivitis, and corneal abnormalities.

**Potential Health Effects: Skin**

This product can cause irritation of the skin with pain, itching and redness. Prolonged exposure may cause dermatitis, eczema and skin discoloration.

**Potential Health Effects: Ingestion**

Harmful or fatal if swallowed. May cause gastrointestinal irritation with symptoms such as nausea, vomiting, and diarrhea.

**Potential Health Effects: Inhalation**

May irritate the nose, throat and respiratory tract. Symptoms can include sore throat, coughing and shortness of breath. In severe cases, ulceration and perforation of the nasal septum can occur.

**HMIS Ratings: Health: 2 Fire: 0 Reactivity: 1 Personal Protective Equipment:** E = chemical goggles, impervious gloves, dust respirator

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

**Material Name: Copper Oxide or Cupric Oxide****\* \* \* Section 4 - First Aid Measures \* \* \*****First Aid: Eyes**

In case of contact with eyes, rinse immediately with plenty of water for at least 20 minutes. Seek immediate medical attention.

**First Aid: Skin**

Remove all contaminated clothing. For skin contact, wash thoroughly with soap and water for at least 20 minutes. 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 flammable

**Upper Flammable Limit (UEL):** Not applicable

**Auto Ignition:** Not applicable

**Rate of Burning:** Not applicable

**General Fire Hazards**

Copper Oxide is not combustible, and does not contribute to the intensity of a fire. When involved in a fire, this material may decompose and produce irritating vapors, acrid smoke and toxic gases.

**Hazardous Combustion Products**

Copper fumes.

**Extinguishing Media**

Use methods for surrounding fire.

**Fire Fighting Equipment/Instructions**

Firefighters should wear full protective clothing including self-contained breathing apparatus. If possible control runoff from fire control or dilution water to prevent environmental contamination.

**NFPA Ratings: Health: 2 Fire: 0 Reactivity: 1 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**

Small releases can be cleaned-up in gloves, goggles and suitable body protection. In case of a large spill (in which excessive dusts can be generated), clear the affected area, protect people, and respond with trained personnel. Prevent spill rinsate from contamination of storm drains, sewers, soil or groundwater.

Place all spill residues in an appropriate container and seal. Thoroughly wash the area after a spill or leak clean-up.

**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.

**\*\*\* Section 7 - Handling and Storage \*\*\*****Handling Procedures**

Do not breathe dust. Avoid all contact with skin and eyes. Use this product only with adequate ventilation. Wash thoroughly after handling.

**Storage Procedures**

All employees who handle this material should be trained to handle it safely. Open containers slowly on a stable surface. Containers of this product must be properly labeled. Empty containers may contain residual amounts of this product; therefore, empty containers should be handled with care. Store containers in a cool, dry location, away from direct sunlight, sources of intense heat, or where freezing is possible. Store away from incompatible materials (see Section 10, Stability and Reactivity). Keep container tightly closed when not in use. Inspect all incoming containers before storage to ensure containers are properly labeled and not damaged. 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 Copper & inorganic Compounds, as Cu (7440-50-8), Copper fume as Cu or Copper dusts and mists, as Cu.

ACGIH: 1 mg/m<sup>3</sup> TWA (dusts and mists)

0.2 mg/m<sup>3</sup> TWA (fume)

OSHA: 1 mg/m<sup>3</sup> TWA (dusts and mists)

0.1 mg/m<sup>3</sup> TWA (fume)

NIOSH: 1 mg/m<sup>3</sup> TWA (dusts and mists)

0.1 mg/m<sup>3</sup> TWA (fume)

DFG MAKs 1 mg/m<sup>3</sup> TWA Peak, 30 minutes, average value

0.1 mg/m<sup>3</sup> TWA (fume) 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 (or goggles).

**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 Copper dust and mists (as Cu) are presented for further information.

Up to 5 mg/m<sup>3</sup>: Dust and mist respirator.

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

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

Up to 50 mg/m<sup>3</sup>: Air purifying, full-facepiece respirator with high-efficiency particulate filter(s), any powered air-purifying respirator with tight-fitting facepiece and high-efficiency particulate filter(s) or full-facepiece SCBA, or full-facepiece SAR.

Up to 100 mg/m<sup>3</sup>: Positive pressure, full-facepiece 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.

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

NOTE: The IDLH concentration for Copper dusts and mists (as Cu) is 100 mg/m<sup>3</sup>.

**Personal Protective Equipment: General**

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

## \*\*\* Section 9 - Physical &amp; 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>       | Black crystalline powder | <b>Odor:</b>             | Odorless                            |
| <b>Physical State:</b>   | Solid                    | <b>pH:</b>               | Not available                       |
| <b>Vapor Pressure:</b>   | Not applicable           | <b>Vapor Density:</b>    | Not applicable                      |
| <b>Boiling Point:</b>    | Not applicable           | <b>Melting Point:</b>    | 1326 deg C (2418 deg F @ 760 mm Hg) |
| <b>Solubility (H2O):</b> | < 0.1%                   | <b>Specific Gravity:</b> | 6.4 (H2O = 1)                       |
| <b>Freezing Point:</b>   | Not available            | <b>Particle Size:</b>    | 200 mesh (98%)                      |
| <b>Softening Point:</b>  | Not available            | <b>Bulk Density:</b>     | Not available                       |
| <b>Molecular Weight:</b> | 79.55                    | <b>Chemical Formula:</b> | CuO                                 |

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

## Chemical Stability

Copper Oxide is stable.

## Chemical Stability: Conditions to Avoid

Avoid high temperatures and incompatible materials.

## Incompatibility

This material is incompatible with aluminum, boron, cesium acetylene carbide, hydrazine, magnesium, phospham, potassium, rubidium acetylene carbide, sodium, titanium, and zirconium. Forms explosive acetylides with acetylene in caustic solutions. Exposure to moist air at > 212 deg F can result in spontaneous combustion.

## Hazardous Decomposition

Copper fumes.

## Hazardous Polymerization

Will not occur.

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

## Acute and Chronic Toxicity

## A: General Product Information

May be harmful or fatal if swallowed. Product is an eye and skin irritant and may cause skin discoloration. Product is a respiratory tract irritant, and inhalation may cause nose irritation, sore throat, coughing, and chest tightness and possibly, ulceration and perforation of the nasal septum.

Chronic: Long term skin overexposure to this product may lead to dermatitis and eczema. Prolonged or repeated eye contact may cause conjunctivitis and possibly corneal abnormalities. Chronic overexposure to this product may cause liver and kidney damage, brain damage and blood abnormalities.

## B: Component Analysis - LD50/LC50

No information available.

## B: Component Analysis - TDLo/LDLo

Copper Oxide (CAS # 1317-38-0):

Intratracheal-Rat LDLo: 278 mg/kg

## Carcinogenicity

## A: General Product Information

No information available.

## B: Component Carcinogenicity

## Copper dusts and mists, as Cu (7440-50-8)

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

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

## Epidemiology

No information available.

**Material Name: Copper Oxide or Cupric Oxide****Neurotoxicity**

Has not been identified.

**Mutagenicity**

No information available.

**Teratogenicity**

There are no reports of teratogenicity in humans. Animal studies indicate that a deficiency or excess of copper in the body can cause significant harm to developing embryos. The net absorption of copper is limited and toxic levels are unlikely from industrial exposure.

**Other Toxicological Information**

Individuals with Wilson's disease are unable to metabolize copper. Thus, persons with pre-existing Wilson's disease may be more susceptible to the effects of overexposure to this product.

**\* \* \* Section 12 - Ecological Information \* \* \*****Ecotoxicity****A: General Product Information**

Harmful to aquatic life in very low concentrations. Copper Oxide is toxic to fish and marine organisms when applied to streams, rivers, ponds or lakes.

**B: Ecotoxicity**

No information available.

**Environmental Fate****COPPER (II) OXIDE:**

**Persistence:** In soil, acidic conditions promote solubility of copper compounds and increase the concentration of ionic copper and so change the microorganism and other animal populations, depending on their various tolerance levels for copper. In the aquatic environment, some copper compounds may be metabolized, however, there is not any evidence that biotransformation processes have a significant bearing on the aquatic fate of these compounds. In water, as in soil, copper compounds will also bind to carbonates, clays, humic materials and hydrous oxides of iron and manganese. In the atmosphere, copper compounds (as aerosols) are estimated to have a residence time of 2-10 days in an unpolluted atmosphere and 0.1 to less than 4 days in polluted, urban areas.

**Bioaccumulation:** Copper compounds are accumulated by plants and animals, but do not appear to biomagnify from plants to animals.

**\* \* \* Section 13 - Disposal Considerations \* \* \*****US EPA Waste Number & Descriptions****A: General Product Information**

As shipped, this product is not considered a hazardous waste.

**B: Component Waste Numbers**

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

**Disposal Instructions**

All wastes must be handled in accordance with local, state and federal regulations or with regulations of Canada and its Provinces. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority.

## \*\*\* 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 applicable.  
Hazard Class: Not applicable  
UN/NA #: Not applicable  
Packing Group: Not applicable  
Required Label(s): Not applicable  
RQ Quantity: Not applicable  
Additional Shipping Information  
Not applicable.

**United Parcel Service Shipping Information**

Shipping Name: Not applicable  
Hazard Class: Not applicable  
UN/NA #: Not applicable  
Packing Group: Not applicable  
Ground Shipment Maximum Quantity: Not applicable  
Required Label (s) Ground Shipments: Not applicable  
Air Shipment Maximum Quantity: Not applicable  
Required Label (s) Air Shipments: Not applicable

**International Transportation Regulations**

Canadian Transport Canada Classification: Copper Oxide is not considered as dangerous goods.

I.M.O. Classification: Copper Oxide is not considered as dangerous goods by the I.M.O.

## \*\*\* Section 15 - Regulatory Information \*\*\*

**US Federal Regulations****A: General Product Information**

Copper Oxide is listed as a Priority Pollutant under the Clean Water Act.

**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).

**Copper Compounds (7440-50-8)**

SARA 313: final RQ = 5000 pounds (2270 kg) Note: No reporting of releases of this substance is required if the diameter of the pieces of the solid metal released is equal to or greater than 0.004 inches.

**State Regulations****A: General Product Information****California Proposition 65**

Copper Oxide 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 substance lists:

| Component                    | CAS #     | CA  | FL  | MA  | MN  | NJ  | PA  |
|------------------------------|-----------|-----|-----|-----|-----|-----|-----|
| Copper                       | 7440-50-8 | Yes | No  | Yes | No  | Yes | Yes |
| Copper, fume, dust and mists |           | No  | Yes | No  | Yes | No  | Yes |

Material Name: Copper Oxide or Cupric Oxide

## \*\*\*Section 15 Regulatory Information (Continued)\*\*\*

## Other Regulations

## A: General Product Information

No other information available.

## B: Component Analysis Inventory

| Component    | CAS#    | TSCA | DSL | EINECS |
|--------------|---------|------|-----|--------|
| Copper Oxide | 1317380 | 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 |
|--------------|---------|-----------------------|
| Copper Oxide | 1317380 | 1 percent             |

**ANSI LABELING (Z129.1):** **WARNING!** MAY BE HARMFUL OR FATAL IF SWALLOWED OR INHALED. CAUSES SKIN AND EYE IRRITATION. Keep from contact with clothing. Do not taste or swallow. Do not get on skin or in eyes. Avoid breathing dusts or particulates. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling. Wear gloves, goggles, face shields, 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. **INCASE OFF FIRE:** Use water fog, dry chemical, CO<sub>2</sub>, or "alcohol" foam. **INCASE OF SPILL:** Absorb spill with inert material. Place residue in suitable container. Consult Material Safety Data Sheet for additional information.

## \*\*\*Section 16 Other Information\*\*\*

## Other Information

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## 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

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This is the end of MSDS # C1118