

MATERIAL SAFETY DATA SHEET**CUPRIC CHLORIDE**

PRODUCT CODE NUMBER(S): 3090-1

PRODUCT IDENTIFICATION**Chemical Name and Synonyms:** *Cupric chloride; Cupric dichloride; Copper bichloride***Chemical Family:** *Metal salt/copper compounds***Chemical Formula:** *CuCl₂·2H₂O***Product Use:** *Laboratory reagent***Manufacturer's Name and Address:***Caledon Laboratories Ltd.
40 Armstrong Avenue
Georgetown, Ontario L7G 4R9***Telephone No:** *(905) 877-0101***Fax No:** *(905) 877-6666***Emergency Telephone No:** *CANUTEC (613) 996-6666***HAZARDOUS INGREDIENTS OF MATERIALS**

<i>Ingredients</i>	<i>%</i>	<i>TLV Units</i>	<i>CAS No.</i>
<i>Cupric chloride</i>	<i>>99</i>	<i>1 mg/m³ (Cu)</i>	<i>10125-13-0</i>

PHYSICAL DATA**Physical State:** *Solid***Odour and Appearance:** *Green crystals or powder, slight odour of hydrochloric acid.***Odour Threshold (ppm):** *Not available***Vapour Pressure (mm Hg):** *Not applicable***Vapour Density (Air = 1):** *>1***Evaporation Rate:** *Not applicable***Boiling Point (degrees C):** *Not available***Melting Point (degrees C):** *100°C***pH:** *Not available***Specific Gravity:** *2.54***Coefficient of Water/Oil distribution:** *Not available***SHIPPING DESCRIPTION****UN:** *2802***T.D.G. Class:** *8***Pkg. Group:** *III***REACTIVITY DATA****Chemical Stability:** *Stable under normal conditions of use and storage.***Incompatibility with other substances:** *May react vigorously or violently with strong oxidizing agents, potassium, sodium and other alkali metals, hydrazine, nitromethane, acetylene, sodium nitroborate. More reactive if heated, or in the presence of moisture. May react with acids, to release toxic chloride fumes. Corrosive to aluminum.***Reactivity:** *Avoid excessive heat, moisture, incompatible materials, generation of dust.***Hazardous Decomposition Products:** *None identified***FIRE AND EXPLOSION DATA****Flammability:** *Non combustible***Extinguishing Media:** *Use an extinguisher appropriate to the surrounding material which is burning. Use water as spray or fog to minimize dust, absorb heat, cool containers, and disperse vapours. Fight fire from upwind, from a safe distance. Firefighters should wear protective equipment, full face-piece positive-pressure self-contained breathing apparatus, and clothing sufficient to prevent inhalation of dust or fumes, and contact with skin and eyes.***Flash Point (Method Used):** *Not applicable***Autoignition Temperature:** *Not applicable***Upper Flammable Limit (% by volume):** *Not applicable***Lower Flammable Limit (% by volume):** *Not applicable***Hazardous Combustion Products:** *Toxic fumes of hydrogen chloride gas***Sensitivity to Impact:** *None identified***Sensitivity to Static discharge:** *None identified***TOXICOLOGICAL PROPERTIES AND HEALTH DATA****Toxicological Data:****LD₅₀:** *(oral, rat) 584 mg/kg (anhydrous)***LC₅₀:** *Not available***Effects of Acute Exposure to Product:****Inhaled:** *Harmful. Dust irritates mucous membranes. Severe overexposure can cause lung damage, chemical pneumonitis or pulmonary edema and even death. Mild to moderate exposure may cause metal fume fever, with symptoms resembling influenza, chills, lassitude, fatigue, headache, low back pain, muscle ache, chest tightness and dry cough, which occur several hours after exposure. Symptoms are reversible and subside after 6 to 12 hours. There is no long-term illness resulting from metal fume fever.***In contact with skin:** *Skin contact with the solid may cause mild irritation on dry skin. Strong solutions or solid in contact with moist skin may cause mild to moderate irritation, burns, ulceration. Damage to skin depends on length of contact.***In contact with eyes:** *Dust or solutions cause redness, watering, itching, and pain, with possible corneal damage and even blindness. Extent of tissue damage depends on concentration and duration of exposure.***Ingested:** *Harmful, has an astringent action on mucous membrane. May cause irritation to gastrointestinal tract, with burning of mouth and throat, nausea, metallic taste in mouth. Ingestion of large amounts can cause gastrointestinal bleeding, vomiting, abdominal pain, and copper poisoning if vomiting does not occur (see "Effects of Chronic Exposure . . ." below).*

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Effects of Chronic Exposure to Product:

Prolonged inhalation may cause lung damage with weakness, loss of appetite, cough and greenish-brown sputum. Chronic copper poisoning causes hepatic cirrhosis, brain damage and demyelination, kidney defects, copper deposition in the cornea. It may lead to hemolytic anemia and it accelerates arteriosclerosis.

Prolonged skin exposure can cause allergic dermatitis. Prolonged or repeated exposure to dusts of copper salts may cause discoloration of the skin or hair, blood and liver damage, ulceration and perforation of the nasal septum, runny nose, metallic taste, and atrophic changes and irritation of the mucous membranes.

People with pre-existing skin disorders, impaired liver, kidney, or pulmonary function, or with Wilson's disease, may be more susceptible to the effects of this material.

Carcinogenicity: An excess of cancer cases has been found in the Cu smelting industry (Occupational Carcinogenesis; Saffioti and Wagoner). Not listed as carcinogenic by NTP, IARC, OSHA.

Teratogenicity: No information available

Reproductive Effects: No information available

Mutagenicity: No human information available. Animal studies inconclusive.

Synergistic Products: None known

PREVENTIVE MEASURES

Engineering Controls: Local exhaust ventilation required.

Respiratory Protection: Dust/mist mask. Up to 10x TLV, or the maximum use specified by the respirator supplier, whichever is lowest, NIOSH approved half-face dust/mist filter respirator. Up to 50x TLV, or the maximum use specified by the respirator supplier, whichever is lowest, NIOSH approved full face-piece dust/mist filter respirator. Higher or unknown concentrations, or for fire or spill conditions, self-contained breathing apparatus, or full face-piece, positive-pressure supplied-air respirator.

Eye Protection: Chemical safety goggles, face shield if splashing may occur.

Skin Protection: Rubber or neoprene gloves. Other protective clothing, apron, sleeves, coveralls, boots sufficient to prevent contact.

Other Personal Protective Equipment: Safety shower and eye-wash fountain in work area.

Leak and Spill Procedure: Restrict access to area of spill. Ventilate area. Cleanup personnel must be thoroughly trained in the hazards of this chemical and its safe use, and must wear protective equipment and clothing sufficient to prevent inhalation of dust or fumes, and contact with skin and eyes. Prevent from entering sewers and waterways. Do not touch spilled material. Contain spill with inert material (earth, sand, inert absorbent). Avoid generating dust. Collect in suitable, labelled, covered containers for disposal. Contaminated absorbent may pose the same hazards as the chemical; treat with caution. Flush area of spill with large amounts of running water.

Waste Disposal: Follow all federal, provincial and local regulations for disposal.

Handling Procedures and Equipment: CORROSIVE, TOXIC. Workers using this chemical must be thoroughly trained in its hazards and its safe use, and must wear appropriate protective equipment and clothing. Prevent release of dusts into workplace air. Avoid contact. Use the smallest

possible amount for the purpose, in designated areas with adequate ventilation. Use good housekeeping practices; avoid accumulation of dust; keep workplace free of extraneous materials. Keep containers closed when not in use and when empty. Empty containers may contain hazardous residues; treat with caution.

Storage Requirements: Store in suitable, labelled containers in a cool, dry, well-ventilated area, out of direct sunlight and away from incompatible materials. Keep dry. Keep air out of container. Keep container tightly closed. Inspect frequently for signs of damage or leaking. Treat empty containers with caution; they may contain hazardous residues.

FIRST AID MEASURES**Specific Measures:**

Eyes: Immediately flush eyes thoroughly with gently running water for at least fifteen (15) minutes, holding eyelids open while flushing. Take care not to flush contaminated water into unaffected eye. Wear protective gloves to avoid contact during first aid procedures. Get medical attention immediately.

Skin: Remove contaminated clothing (including shoes, belts, watches, rings). Wipe off excess from skin. Drench skin with running water for at least fifteen (15) minutes. Wear protective gloves to avoid contact during first aid procedures. Get medical attention. Decontaminate clothing before reuse, or discard.

Inhalation: Remove to fresh air. Give oxygen and get medical attention for any breathing difficulty.

Ingestion: If victim is alert and NOT convulsing, rinse mouth thoroughly with water, give 2 to 4 glasses of water to drink to dilute and induce vomiting under medical supervision. Get medical attention immediately.

REFERENCES USED

Budavari: The Merck Index, 12th ed., 1997

Sax, Lewis: Hawley's Condensed Chemical Dictionary, 11th ed., 1987

Sax: Dangerous Properties of Industrial Materials, 5th ed., 1979

Suppliers' Material Safety Data Sheets

ADDITIONAL INFORMATION

Date Issued: June 10, 1991

Revision: October 2010

MSDS: 3090-1

Proposed WHMIS Designation: E

Prepared by: Caledon Laboratories Ltd. (905) 877-0101
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