

MATERIAL SAFETY DATA SHEET**CUPROUS CHLORIDE**

PRODUCT CODE NUMBER(S): 3220-1

PRODUCT IDENTIFICATION**Chemical Name and Synonyms:** Cuprous chloride; Copper chloride; Copper monochloride**Chemical Family:** Inorganic salt**Chemical Formula:** CuCl**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**

Ingredients	%	TLV Units	CAS No.
Cuprous chloride	99	(TWA) 1 mg/m ³ (as Cu)	7758-89-6

PHYSICAL DATA**Physical State:** Solid**Odour and Appearance:** Cream to brown crystalline powder; odourless**Odour Threshold (ppm):** Not applicable**Vapour Pressure (mm Hg):** 0.975 mm Hg at 546°C**Vapour Density (Air = 1):** Not available**Evaporation Rate:** Not available**Boiling Point (degrees C):** 1490°C**Melting Point (degrees C):** 430°C**pH:** Not available**Specific Gravity:** 4.140**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. Turns green on exposure to moist air; turns brown on exposure to light.**Incompatibility with other substances:** Incompatible with oxidizing agents, potassium, acetylene, nitromethane, hydrazine, alkali metals. Reacts violently with lithiumnitride and heat.**Reactivity:** May decompose on exposure to light. May slowly oxidize on exposure to air. May react or decompose

on exposure to humidity. Avoid excessive heat, ignition sources, generation of dust, incompatible materials.

Hazardous Decomposition Products: Copper fumes, HCl vapour**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:** HCl, copper fumes**Sensitivity to Impact:** None identified**Sensitivity to Static discharge:** None identified**TOXICOLOGICAL PROPERTIES AND HEALTH DATA****Toxicological Data:****LD₅₀:** (oral, rat) 140 mg/kg**LC₅₀:** (mouse) 249 ppm/4h**Effects of Acute Exposure to Product:****Inhaled:** Corrosive, toxic. Dust or mist can cause severe irritation to upper respiratory tract. Severe overexposure by inhalation can cause lung damage, with chemical pneumonitis or pulmonary edema. Can be fatal. Mild to moderate exposure may cause metal fume fever; symptoms resemble influenza and occur several hours after exposure. Symptoms include chills, lassitude, fatigue, headache, low back pain, muscle ache, chest tightness and dry cough. The 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:** Corrosive. Can cause severe irritation, with redness, pain, blistering, possible ulceration if contact is prolonged. Amount of tissue damage depends on duration of contact, and strength, in case of solutions. May cause sensitivity in some individuals. Risk of skin absorption is slight.**In contact with eyes:** Corrosive. Can cause severe irritation and corneal damage, ulceration or burns, subsequent corneal clouding and impaired vision.**Ingested:** Toxic, corrosive. May cause burning and pain in the mouth and throat, nausea, vomiting, abdominal pain, metallic taste in the mouth. If the material is not vomited, systemic poisoning may occur, with chills, haemorrhagic gastritis, damage to liver, kidneys, lungs, capillary damage

CODE: 3220-1

and blood effects. Death may occur from shock or renal failure.

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: Mutation references cited (RTECS No. GL 6990000)

Synergistic Products: Copper salts may decrease the toxicity of molybdenum; zinc salts may decrease the toxicity of copper salts.

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; wet if necessary. 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: August 19, 1991

Revision: October 2010

MSDS: 3220-1

Proposed WHMIS Designation: D1B; E

Prepared by: Caledon Laboratories Ltd. (905) 877-0101
Caledon Laboratories Ltd. believes the information contained herein is reliable and accurate. Caledon makes no warranty with respect thereto and expressly disclaims all liability for reliance thereon. Such information is solely for your consideration, investigation, and verification.