



SIGMA-ALDRICH

Material Safety Data Sheet

Date Printed: 01/24/2002
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Version 1.10

Section 1 - Product and Company Information

Product Name	COPPER(II) CHLORIDE, 97%		
Product Number	222011		
Brand	Aldrich Chemical		
Company	Sigma-Aldrich		
Street Address	3050 Spruce Street		
City, State, Zip, Country	SAINT LOUIS, MO 63103 US		
Technical Phone:	Emergency Phone:	414 273 3850 Ext. 5996	
Fax:	800 325 5052		

Section 2 - Composition/Information on Ingredient

Substance Name	CAS #	SARA 313
COPPER(II) CHLORIDE	7447-39-4	Yes

Formula	Cl ₂ Cu
Synonyms	Copper bichloride, Copper(2+) chloride, Copper(II) chloride, Cupric chloride, Cupric dichloride

Section 3 - Hazards Identification

Emergency Overview
Harmful.
Harmful if swallowed. Irritating to eyes, respiratory system, and skin.
Target organ(s): Liver. Kidneys.

HMIS Rating		
Health: 2*	Flammability: 0	Reactivity: 1

NFPA Rating		
Health: 2	Flammability: 0	Reactivity: 1

*additional chronic hazards present.

For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

Oral Exposure
If swallowed, wash out mouth with water provided person is conscious. Call a physician.

Inhalation Exposure
If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

Dermal Exposure
In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

Eye Exposure

In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

Section 5 - Fire Fighting Measures

Autoignition Temp: N/A

Extinguishing Media

Suitable

Noncombustible. Use extinguishing media appropriate to surrounding fire conditions.

Firefighting

Protective Equipment

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

Specific Hazard(s)

Emits toxic fumes under fire conditions.

Section 6 - Accidental Release Measures

Procedure to be Followed in Case of Leak or Spill

Evacuate area.

Procedure(s) of Personal Precaution(s)

Wear respirator, chemical safety goggles, rubber boots, and heavy rubber gloves.

Methods for Cleaning Up

Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

Handling

User Exposure

Do not breathe dust. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

Storage

Suitable

Store in a cool dry place. Handle and store under argon. Keep tightly closed.

Section 8 - Exposure Controls / PPE

Engineering Controls

Safety shower and eye bath. Mechanical exhaust required.

Personal Protective Equipment

Respiratory

NIOSH/MSHA-approved respirator.

Hand

Compatible chemical-resistant gloves.

Eye

Chemical safety goggles.

General Hygiene Measures

Wash thoroughly after handling.

Section 9 - Physical/Chemical Properties

Appearance	
Physical State	Solid
Molecular Weight:	134.45 AMU
pH	N/A
BP/BP Range	N/A
MP/MP Range	620 °C
Freezing Point	N/A
Vapor Pressure	N/A
Vapor Density	N/A
Saturated Vapor Conc.	N/A
SG/Density	3.386 g/cm ³
Bulk Density	N/A
Odor Threshold	N/A
Volatile%	N/A
VOC Content	N/A
Water Content	N/A
Solvent Content	N/A
Evaporation Rate	N/A
Viscosity	N/A
Partition Coefficient	N/A
Decomposition Temp.	N/A
Flash Point °F	N/A
Flash Point °C	N/A
Explosion Limits	N/A
Autoignition Temp	N/A
Solubility	N/A

Section 10 - Stability and Reactivity

Stability	
Stable	
Stable.	
Materials to Avoid	
Alkali metals.	
Hazardous Decomposition Products	
Hazardous Decomposition Products	
Hydrogen chloride gas.	
Hazardous Polymerization	
Hazardous Polymerization	
Will not occur.	

Section 11 - Toxicological Information

Route of Exposure	
Skin Contact	
Causes skin irritation.	
Skin Absorption	
May be harmful if absorbed through the skin.	
Eye Contact	
Causes eye irritation.	
Inhalation	
May be harmful if inhaled. Material is irritating to mucous membranes and upper respiratory tract.	

Ingestion

Harmful if swallowed.

Target Organ(s) or System(s)

Liver. Kidneys. Brain. Cardiovascular system.

Signs and Symptoms of Exposure

Chronic copper poisoning is typified by hepatic cirrhosis, brain damage and demyelination, kidney defects, and copper deposition in the cornea as exemplified by humans with Wilson's disease. It has also been reported that copper poisoning has lead to hemolytic anemia and accelerates arteriosclerosis. Depending on the intensity and duration of exposure, effects may vary from mild irritation to severe destruction of tissue. May cause decrease in blood pressure. Gastrointestinal disturbances.

RTECS Number: GL7000000

Toxicity Data

Oral - Rat: 584 mg/kg (LD50)	
Remarks: Behavioral:Somnolence (general depressed activity).	
Behavioral:Convulsions or effect on seizure threshold.	
Intraperitoneal - Rat: 14700 UG/KG (LD50)	
Remarks: Behavioral:Somnolence (general depressed activity).	
Behavioral:Convulsions or effect on seizure threshold.	
Intravenous - Rat: 5 MG/KG (LD50)	
Remarks: Behavioral:Somnolence (general depressed activity).	
Behavioral:Convulsions or effect on seizure threshold.	
Oral - Mouse: 233 mg/kg (LD50)	
Remarks: Behavioral:Somnolence (general depressed activity).	
Behavioral:Convulsions or effect on seizure threshold.	
Intraperitoneal - Mouse: 7400 UG/KG (LD50)	
Intravenous - Mouse: 17500 UG/KG (LD50)	

Chronic Exposure - Mutagen

<u>Species</u>	<u>Dose</u>	<u>Cell Type</u>	<u>Mutation test</u>
Mammal	2 MMOL/L	lymphocyte	DNA damage

Chronic Exposure - Reproductive Hazard

<u>Species</u>	<u>Dose</u>	<u>Route of Application</u>	<u>Exposure Time</u>
Rat	8 UG/M3	Inhalation	(1-21D PREG)
			Result: Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants). Effects on Embryo or Fetus: Extra embryonic structures (e.g., placenta, umbilical cord). Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).
Rat	52 MG/KG	Intraperitoneal	(26D MALE)
			Result: Paternal Effects: Testes, epididymis, sperm duct. Paternal Effects: Prostate, seminal vesicle, Cowper's gland, accessory glands. Paternal Effects: Other effects on male.
Mouse	35 MG/KG	Intraperitoneal	(12-18D PREG)
			Result: Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants). Effects on Embryo or Fetus: Fetal death.

Section 12 - Ecological Information

Additional Results/Data from Relevant Scientific Experiments

Because of harmful effects on water organisms, this material should not be introduced into drains. Avoid contamination of the environment

Section 13 - Disposal Considerations

Appropriate Method of Disposal of Substance or Preparation

Contact a licensed professional waste disposal service to dispose of this material.
Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.
Observe all federal, state, and local environmental regulations.

Section 14 - Transport Information

DOT

Proper Shipping Name: Copper chloride
UN#: 2802
Class: 8
Packing Group: Packing Group III
Hazard Label: Corrosive
PIH: Not PIH

IATA

Proper Shipping Name: Copper chloride
IATA Number: 2802
Hazard Class: 8
Packing Group: III

Section 15 - Regulatory Information

EU Additional Classification

Symbol of Danger: Xn

Indication of Danger

Harmful.

Risk Statements R: 22 36/37/38

Harmful if swallowed. Irritating to eyes, respiratory system, and skin.

Safety Statements S: 26 36

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing.

US Classification and Label Text

Indication of Danger

Harmful.

Risk Statements

Harmful if swallowed. Irritating to eyes, respiratory system, and skin.

Safety Statements

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing.

US Statements

Target organ(s): Liver. Kidneys.

United States Regulatory Information

SARA Listed: Yes

Notes: This product is subject to SARA section 313 reporting requirements - copper compounds.

TSCA Inventory Item: Yes

Canada Regulatory Information

WHMIS Classification

This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

Section 16 - Other Information

Disclaimer

For R&D use only. Not for drug, household or other uses.

Warranty

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. Sigma-Aldrich inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2002 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.