MSDS - Copper(II) chloride dihydrate
Cupric chloride dihydrate

**** SECTION 2 - COMPOSITION, INFORMATION ON INGREDIENTS ****

CAS#	Chemical Name	%	EINECS#
10125-13-0	Copper(II) chloride dihydrate, reagent (powder), 99% (Titr.)	99%	unlisted

Hazard Symbols: XN T
Risk Phrases: 22 25 36 36/37/38

**** SECTION 3 - HAZARDS IDENTIFICATION ****

EMERGENCY OVERVIEW

Appearance: Not available.
WARNING! MAY CAUSE ALLERGIC SKIN REACTION. HYGROSCOPIC. HARMFUL IF SWALLOWED. MAY CAUSE SEVERE EYE IRRITATION AND POSSIBLE INJURY. MAY CAUSE LIVER AND KIDNEY DAMAGE. CAUSES SEVERE RESPIRATORY TRACT IRRITATION. INHALATION OF FUMES MAY CAUSE METAL-FUME FEVER. EYE CONTACT MAY RESULT IN PERMANENT EYE DAMAGE. MAY CAUSE SEVERE SKIN IRRITATION. CAUSES SEVERE DIGESTIVE TRACT IRRITATION WITH PAIN, NAUSEA, VOMITING AND DIARRHEA. MAY CORRODE THE DIGESTIVE TRACT WITH HEMORRHAGING AND POSSIBLE SHOCK.
Target Organs: Kidneys, liver.

Potential Health Effects

Eye:

Exposure to particulates or solution may cause conjunctivitis, ulceration, and corneal abnormalities. Causes redness and pain.

Skin:

May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material. Causes redness and pain. Skin contact can cause itching, redness, and an eczema-type rash.

Ingestion:

Harmful if swallowed. Causes gastrointestinal irritation with nausea, vomiting and diarrhea.

Inhalation:

Causes severe irritation of upper respiratory tract with coughing, burns, breathing difficulty, and possible coma. Inhalation of fumes may cause metal fume fever, which is characterized by flu-like symptoms with metallic taste, fever, chills, cough, weakness, chest pain, muscle pain and increased white blood cell count.

Chronic:

Prolonged or repeated skin contact may cause dermatitis. May cause liver and kidney damage.
Chronic toxicity related to copper is found only in individuals with Wilson's disease, who are unable to excrete copper. This causes retention of copper in the body resulting in damage to the liver, kidneys, brain, blood, bones and endocrine glands).

**** SECTION 4 - FIRST AID MEASURES ****

Eyes:

Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower lids. Get medical aid immediately.

Skin:

Get medical aid. Flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes.

Ingestion:

Induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.

Inhalation:

Get medical aid immediately. Remove from exposure to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Notes to Physician:

Treat symptomatically and supportively.
Penicallamine may be of value as a chelating agent.

**** SECTION 5 - FIRE FIGHTING MEASURES ****

General Information:

Wear appropriate protective clothing to prevent contact with skin and eyes. Wear a self-contained breathing apparatus (SCBA) to prevent contact with thermal decomposition products. Substance is noncombustible.

Extinguishing Media:

Substance is noncombustible; use agent most appropriate to extinguish surrounding fire.

Autoignition Temperature: Not applicable.
Flash Point: Not applicable.
NFPA Rating: Not published.
Explosion Limits, Lower: Not available.
Upper: Not available.

**** SECTION 6 - ACCIDENTAL RELEASE MEASURES ****

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks:

Vacuum or sweep up material and place into a suitable disposal container. Avoid generating dusty conditions.

**** SECTION 7 - HANDLING and STORAGE ****

Handling:

Wash thoroughly after handling. Minimize dust generation and accumulation. Do not get in eyes, on skin, or on clothing. Do not ingest or inhale. Use only in a chemical fume hood.

Storage:

Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances.

**** SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION ****

Engineering Controls:

Local exhaust ventilation may be necessary to control any air contaminants to within their TLVs during the use of this product.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Copper(II) chloride	fume: 0.2 mg/m3	as Cu: 1 mg/m3	fume, as Cu: 0.1

dihydrate, reagent (powder), 99% (Tit r.)	TWA; dusts and mists, as Cu: 1 mg/m3 TWA (listed under COPPER	TWA (dusts and mists); 0.1 mg/m3 TWA (fume) (listed under COPPER	mg/m3 TWA; dusts and mists, as Cu: 1 mg/m3 TWA (listed under COPPER

OSHA Vacated PELs:

Copper(II) chloride dihydrate, reagent (powder), 99% (Titr.):

No OSHA Vacated PELs are listed for this chemical.

Personal Protective Equipment

Eyes:

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133.

Skin:

Wear appropriate protective gloves to prevent skin exposure.

Clothing:

Wear appropriate protective clothing to minimize contact with skin.

Respirators:

Follow the OSHA respirator regulations found in 29CFR 1010.134. Always use a NIOSH-approved respirator when necessary.

**** SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES ****

Physical State:	Solid
Appearance:	Not available.
Odor:	Odorless
pH:	3.0-3.8 @ 5% aq.sol
Vapor Pressure:	Not available.
Vapor Density:	Not available.
Evaporation Rate:	Not available.
Viscosity:	Not available.
Boiling Point:	Not available.
Freezing/Melting Point:	100_C
Decomposition Temperature:	100_C
Solubility:	1150 g/l (5% aq.sol)
Specific Gravity/Density:	2.5400
Molecular Formula:	Cl2Cu.2H2O
Molecular Weight:	170.4788

**** SECTION 10 - STABILITY AND REACTIVITY ****

Chemical Stability:

Stable. Stable under normal temperatures and pressures.

Conditions to Avoid:

Incompatible materials, acids, excess heat, temperatures above 65_C, exposure to moist air or water.

Incompatibilities with Other Materials:

Incompatible with hydrazine, nitromethane, and sodium hypobromite. A mixture of either potassium or sodium with cupric chloride produces a strong explosion on impact. Copper salts can form explosive acetylides in contact with acetylene. Copper salts may enhance the decomposition of hydrazine.

Hazardous Decomposition Products:

Hydrogen chloride, chloride fumes.

Hazardous Polymerization: Will not occur.

**** SECTION 11 - TOXICOLOGICAL INFORMATION ****

RTECS#:
CAS# 10125-13-0: GL7030000
LD50/LC50:
Not available.
Carcinogenicity:
Copper(II) chloride dihydrate, reagent (powder), 99% (Titr.) -
Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.
Epidemiology:
No data available.
Teratogenicity:
No data available.
Reproductive Effects:
No data available.
Neurotoxicity:
No data available.
Mutagenicity:
No data available.
Other Studies:
No data available.

**** SECTION 12 - ECOLOGICAL INFORMATION ****

Ecotoxicity:
Acute aquatic effects: 96-hour LC50; Fathead minnow: 0.43 mg/L 96-hour LC50; Bluegill sunfish: 1.25 mg/L 48-hour LC50; Rainbow trout: 0.4-0.5 mg/L This chemical is expected to cause little oxygen depletion in aquatic systems. It has a high potential to affect aquatic organisms and secondary waste treatment microorganisms.
Environmental Fate:
This chemical is not likely to bioconcentrate.
Physical/Chemical:
Not available.
Other:
Not available.

**** SECTION 13 - DISPOSAL CONSIDERATIONS ****

Dispose of in a manner consistent with federal, state, and local regulations.
RCRA D-Series Maximum Concentration of Contaminants: Not listed.
RCRA D-Series Chronic Toxicity Reference Levels: Not listed.
RCRA F-Series: Not listed.
RCRA P-Series: Not listed.
RCRA U-Series: Not listed.
Not listed as a material banned from land disposal according to RCRA.

**** SECTION 14 - TRANSPORT INFORMATION ****

US DOT
Shipping Name: COPPER CHLORIDE
Hazard Class: 8
UN Number: UN2802
Packing Group: III
IMO
Shipping Name: COPPER CHLORIDE
Hazard Class: 8

UN Number: 2802
Packing Group: 3

IATA

Shipping Name: COPPER CHLORIDE
Hazard Class: 8
UN Number: 2802
Packing Group: 3

RID/ADR

Shipping Name: COPPER CHLORIDE
Dangerous Goods Code: 8(11C)
UN Number: 2802

Canadian TDG

No information available.

**** SECTION 15 - REGULATORY INFORMATION ****

A. Federal

TSCA

CAS# 10125-13-0 is not on the TSCA Inventory. It is a hydrate and exempt from TSCA Inventory requirements (40CFR270.3(u)(2)).

Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

CERCLA/SARA

Section 302 (RQ)

None of the chemicals in this material have an RQ.

Section 302 (TPQ)

None of the chemicals in this product have a TPQ.

SARA Codes

CAS # 10125-13-0: acute, chronic.

Section 313

No chemicals are reportable under Section 313.

Clean Air Act:

This material does not contain any hazardous air pollutants.
This material does not contain any Class 1 Ozone depletors.
This material does not contain any Class 2 Ozone depletors.

Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under the CWA.
None of the chemicals in this product are listed as Priority Pollutants under the CWA.
None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

B. State

Not present on state lists from CA, PA, MN, MA, FL, or NJ.
California No Significant Risk Level:
None of the chemicals in this product are listed.

C. International

Canada

None of the chemicals in this product are listed on the DSL/NDSL list.
CAS# 10125-13-0 is not listed on Canada's Ingredient Disclosure List.

European Labeling in Accordance with EC Directives

Hazard Symbols: XN T

Risk Phrases:

R 22 Harmful if swallowed.
R 25 Toxic if swallowed.
R 36 Irritating to eyes.
R 36/37/38 Irritating to eyes, respiratory system and skin.

Safety Phrases:

S 22 Do not inhale dust.
S 24/25 Avoid contact with skin and eyes.
S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S 37/39 Wear suitable gloves and eye/face protection.
S 44 If you feel unwell, seek medical advice (show the label where possible).

Exposure Limits:

OEL-ARAB Republic of Egypt:TWA 0.1 mg/m3 (fume). OEL-AUSTRALIA:TWA 0.2 mg/m3 (fume). OEL-AUSTRALIA:TWA 1 mg/m3 (dust). OEL-BELGIUM:TWA 0.2 m g/m3 (fume). OEL-BELGIUM:TWA 1 mg/m3 (dust). OEL-DENMARK:TWA 0.1 mg/m3 (fume). OEL-DENMARK:TWA 1 mg/m3 (dust). OEL-FINLAND:TWA 0.2 mg/m3 (fu me). OEL-FINLAND:TWA 1 mg/m3. OEL-FINLAND:TWA 1 mg/m3 (dust) CE:TWA 0.2 mg/m3 (fume). OEL-FRANCE:TWA 1 mg/m3;STEL 2 mg/m3 (dust). O EL-GERMANY:TWA 0.1 mg/m3 (fume). OEL-GERMANY:TWA 1 mg/m3. OEL-GERMANY: TWA 1 mg/m3 (dust). OEL-HUNGARY:TWA 0.2 mg/m3;STEL 0.4 mg/m3 (dust). O EL-INDIA:TWA 0.2 mg/m3 (fume). OEL-THE NETHERLANDS:TWA 02 mg/m3 (fume) . OEL-THE NETHERLANDS:TWA 1 mg/m3 (dust). OEL-THE PHILIPPINES:TWA 1.0 mg/m3 (fume). OEL-POLAND:TWA 0.1 mg/m3 (fume). OEL-RUSSIA:STEL 0.5 ppm (1 mg/m3) (dust). OEL-SWEDEN:TWA 0.2 mg/m3 (resp. dust). OEL-SWEDEN:T WA 0.2 mg/m3 (fume). OEL-SWEDEN:TWA 1 mg/m3 (total dust). OEL-SWITZERL AND:TWA 0.1 mg/m3;STEL 0.2 mg/m3 (fume). OEL-SWITZERLAND:TWA 1 mg/m3;S TEL 1 mg/m3. OEL-THAILAND:TWA 0.1 mg/m3 (fume). OEL-THAILAND:TWA 1 mg/ m3. OEL-UNITED KINGDOM:TWA 0.2 mg/m3 (fume). OEL-UNITED KINGDOM:TWA 1 mg/m3. OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV. OEL I N NEW ZEALM-7M-7