MATERIAL SAFETY DATA SHEET

NFPA	HMIS	Personal Protective Equipment

Health Hazard	3
Fire Hazard	0
Reactivity	0

See Section 8.

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product code:	C1385
Product Name:	CUPRIC CHLORIDE, DIHYDRATE, CRYSTAL, REAGENT, ACS
Chemical Name:	No information available
Synonyms:	**Copper (2+) chloride dihydrate;** **Copper Chloride dihydrate;** **Copper chloride (CuCl2), dihydrate** **Copper (II) chloride dihydrate**
Recommended use:	Catalyst.
CAS #:	10125-13-0
RTECS #	GL7030000
Formula:	CUCl2.2H2O
CI#:	Not available
Supplier:	Spectrum Chemicals and Laboratory Products, Inc. 14422 South San Pedro St. Gardena, CA 90248 (310) 516-8000
Order Online At:	**https://www.spectrumchemical.com**
Emergency Telephone Number:	CHEMTREC: 1-800-424-9300
Contact Person:	Regina Wachenheim (East Coast)
Contact Person:	Martin LaBenz (West Coast)

2. HAZARDS IDENTIFICATION

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

DANGER CORROSIVE!

The product causes burns of eyes, skin and mucous membranes

Harmful if swallowed

Odor:	Physical state:	Appearance:	Color:
Odorless.	Solid.	Crystals.	Blue. Blue green.

OSHA Regulatory Status This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

POTENTIAL HEALTH EFFECTS

Principal Routes of Exposure:
Skin. Inhalation. Ingestion.

Acute Potential Health Effects:

Skin Contact:
Causes severe skin irritation and burns with itiching, erythema, burning pain.

Eye Contact:
Severe eye irritation. Causes eye burns. May cause corneal damage. Symptoms can include redness, pain, blurred vision , discoloration, loss of vision, eye damage such permanent corneal opacifiaction, chemical conjunctivitis, ulceration.

Inhalation:
Irritating to respiratory system. May cause pulmonary edema.

Ingestion:
Causes burns. Can burn mouth, throat, and stomach. May cause abdominal pain, nausea, vomiting, diarrhea. Harmful if swallowed.

Chronic Potential Health Effects:

Component	Carcinogen Status:
Cupric Chloride, Dihydrate 10125-13-0 (100)	No information available

Target Organs: Skin. Respiratory system. Lungs. Liver. Kidneys.

Mutagenic Effects: No information available

Teratogenic Effects: No information available

Aggravated Medical Conditions: No information available

See Section 11 for additional Toxicological Information

POTENTIAL ENVIRONMENTAL EFFECTS

No information available

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS-No.	Weight %
Cupric Chloride, Dihydrate	10125-13-0	100

4. FIRST AID MEASURES

General Advice: Poison information centres in each State capital city can provide additional assistance for scheduled poisons (13 1126). Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves. First aider needs to protect himself.

Skin Contact: Wash off immediately with soap and plenty of water. Continue flushing with plenty of water for at least 15 minutes. Remove all contaminated clothes and shoes. Immediate medical attention is required. Call a physician immediately.

Eye Contact: Flush eye with water for 15 minutes. Immediate medical attention is required. Call a physician immediately.

Inhalation: Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. WARNING! It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled or ingested material is toxic, infectious or corrosive. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required. Call a physician immediately.

Ingestion: Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Immediate medical attention is required. Call a physician or Poison Control Centre immediately.

Notes to Physician: Treat symptomatically

5. FIRE-FIGHTING MEASURES

Flammable Properties

Flashpoint (°C/°F):	No information available.

Flash Point Tested according to:
Not available

Lower Explosion Limit (%):	No information available
Upper Explosion Limit (%):	No information available

Autoignition Temperature (°C/°F):	No information available

Suitable Extinguishing Media: The product is not flammable. If it is involved in a fire, extinguish the fire using an agent suitable for the type of surrounding fire.

Unsuitable Extinguishing Media: No information available.

Hazardous Combustion Products: Hydrogen chloride gas, copper oxides

Specific hazards:	Contact with metals may evolve flammable hydrogen gas. Containers may explode when heated. When mixed with postassium or sodium, it produces a strong explosion on impact.
Special Protective Equipment for Firefighters:	As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear
Specific Methods:	No information available.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions:
Keep people away from and upwind of spill/leak. Ensure adequate ventilation. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Use personal protective equipment. Avoid contact with skin, eyes and clothing.

Environmental Precautions:
Prevent further leakage or spillage if safe to do so. Should not be released into the environment. Do not let product enter drains. Prevent entry into waterways, sewers, basements or confined areas.

Methods for Cleaning Up:
Use appropriate tools to put the spilled solid in a suitable waste disposal container. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Handling

Technical Measures/Precautions:
Use only in area provided with appropriate exhaust ventilation. Keep away from incompatible materials.

Safe Handling Advice:
Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Do not ingest. Do not breathe vapours/dust. Handle in accordance with good industrial hygiene and safety practice.

Storage

Technical Measures/Storage Conditions:
Deliquescent. Protect from moisture. Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. Store away from incompatible materials.

Incompatible Materials:
Oxidizing agents. Acids. Metals. Sodium. Potassium. Hydrazine. Acetylene. Sodium hypobromite. Nitromethane.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering measures to reduce exposure:	Ensure adequate ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protective Equipment

Eye protection: Face-shield.

Skin and body protection: Chemical resistant protective suit. Gloves. boots.

Respiratory protection: Wear respirator with dust filter..

Hygiene measures: Avoid contact with skin, eyes and clothing. When using, do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product.

National occupational exposure limits

United States

Components	OSHA	NIOSH	ACGIH	AIHA WHEEL
Cupric Chloride, Dihydrate - 10125-13-0	None	1mg/m^3 TWA (as Cu)	1 mg'm3 TWA (as Cu)	None

Canada

Components	Alberta	British Columbia	Ontario	Quebec
Cupric Chloride, Dihydrate 10125-13-0	None	None	None	None

Australia and Mexico

Components	Australia	Mexico
Cupric Chloride, Dihydrate 10125-13-0	None	None

9. PHYSICAL AND CHEMICAL PROPERTIES

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:
Solid.

Appearance:
Crystals.

Color:
Blue. Blue green.

Odor:
Odorless.

Taste
No information available

Molecular/Formula weight:
170.48

Flash point (°C):
No data available

Lower Explosion Limit (%):
No information available

Upper Explosion Limit (%):
No information available

Autoignition Temperature (°C/°F):
No information available

Melting point/range(°C/°F):
No information available

Boiling point/range(°C/°F):
No information available

pH:
No information available

Specific gravity:
No information available

Density (g/cm3):
2.54

Decomposition temperature(°C/°F):
No information available

Bulk density:
No information available

Vapor pressure @ 20°C (kPa):
No information available

Evaporation rate:
No information available

Vapor density:
No information available

VOC content (g/L):
No information available

Odor threshold (ppm):
No information available

Partition coefficient (n-octanol/water):
No information available

Miscibility:
No information available

Solubility:
Freely soluble in water
Freely soluble in Methanol
Freely soluble in Ethyl alcohol
Soluble in Acetone
Soluble in ethyl acetate
Slightly soluble in Ether
Solubility in Water: 76 parts in 100 parts water @ 25 deg. C

10. STABILITY AND REACTIVITY

Stability: Stable at normal conditions

Conditions to avoid: Exposure to moisture. Exposure to moist air. Deliquescent in moist air. Efflorescent in dry air. Incompatible materials.

Incompatible Materials: Oxidizing agents. Acids. Metals. Sodium. Potassium. Hydrazine. Acetylene. Sodium hypobromite. Nitromethane.

Hazardous decomposition products: Copper oxides. Hydrogen chloride gas.

Possibility of Hazardous Reactions: Evolves flammable hydrogen gas on contact with metals
Contact with acids or acid fumes may evolve highly toxic hydrogen chloride fumes
Water loss from 70-200 deg. C

Polymerization: Hazardous polymerisation does not occur

Corrosivity: No information available

Special Remarks on Corrosivity: No information available

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Component Information

Cupric Chloride, Dihydrate - 10125-13-0

LD50/oral/rat = No information available
LD50/oral/mouse = 110 mg/kg
LD50/dermal/rat = No information available
LD50/dermal/rabbit = No information available
LC50/inhalation/rat = No information available
LC50/inhalation/mouse = No infomation available
Other LD50 or LC50information = No information available

Product Information

LC50/inhalation/rat No information available
LC50/Inhalation/mouse No information available
LD50/dermal/rabbit No information available
LD50/dermal/rat No information available
LD50/oral/mouse = 110mg/kg
LD50/oral/rat = No information available

Local Effects

Skin irritation:	Corrosive. Severe skin irritation. Causes burns. Causes severe skin irritation and burns with itiching, erythema, burning pain. It may also cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material.
Eye irritation:	Corrosive. Severe eye irritation. Causes burns. May cause corneal damage. Symptoms can include redness, pain, blurred vision , discoloration, loss of vision, eye damage such permanent corneal opacifiaction, chemical conjunctivitis, ulceration.
Inhalation:	Causes respiratory tract (nose, throat, lungs), and mucous membrane irritation causing coughing sore throat, wheezing, and shortness of breath. It may cause ulceration and perforation of the nasal septum. It may produce delayed pulmonary edema. When heated this compound may give off copper fume, which can cause "fume metal fever" with symptoms similar to the common cold, including chills and stiffness of the head.
Ingestion:	Harmful if swallowed. Ingestion of sufficient concentrations may result in metallic taste, salivation, headache, nausea, vomiting, burning in the mouth, epigastrium (esophagus and stomach), diaphoresis, abdominal/gastric pain, gastrointestinal bleeding, and bloody diarrhea. The vomitius is characteristically greenish-blue. Other systemic effects may occur including hemolysis, anemia, and anuria, oliguria, hematuria, acute kidney tubular necrosis, jaundice, hepatomegaly (i.e.liver and kidney damage) (secondary to hemolysis). May affect behavior/central nervous system (somnolence, convulsions). Rarely methemoglobinemia has been reported.
Sensitization:	No information available

Chronic Toxicity

Chronic Toxicity

Repeated exposure may cause thickening of the skin and greenish color to the skin and hair.
Repeated exposure by inhalation may cause ulceration of the nasal septum and shrinking of the inner lining of the nose.
Repeated skin contact may cause dermatitis.
Repeated or prolonged ingestion may cause liver and kidney damage due to accumulation of copper in these organs. Chronic copper poisoning is rare. It has been mainly observed in individuals with Wilson disease or Indian childhood cirrhosis, in which progressive copper toxicity results from a hereditary metabolic disorder involving deficiency in the copper-binding and transport protein ceruloplasmin. Severe liver disease involving massive accumulation of copper in the liver has been reported in a few cases not meeting the diagnostic criteria for either Wilson disease or Indian childhood cirrhosis. Moreover, this so-called Indian childhood cirrhosis is becoming increasingly recognized in non-Indian children, and hepatic copper levels should be determined in all cases of childhood liver failure of unknown origin (aka idiopathic copper toxicosis).
Generally, the effects of copper excess are reversible.
Repeated or prolonged inhalation may affect the blood (changes in white blood cell count), metabolism (metabolic acidosis)..

Carcinogenic effects: Not considered carcinogenic

Components	NTP	IARC	OSHA HCS - Carcinogens	ACGIH - Carcinogens	Australia - Prohibited Carcinogenic Substances	Australia - Notifiable Carcinogenic Substances
Cupric Chloride, Dihydrate	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed

Mutagenic Effects: No information available

Reproductive Effects: No information available

Teratogenic Effects: No information available

Target Organs: Skin. Respiratory system. Lungs. Liver. Kidneys.

12. ECOLOGICAL INFORMATION

ECOTOXICITY

Toxicity to terrestrial and aquatic plants and animals: No information available

Ecotoxicity effects: No data available.

Aquatic toxicity: No information available

Mobility: No information available

Persistence and degradability: No information available

Bioaccumulative potential: No information available

13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products:
Waste must be disposed of in accordance with Federal, State and Local regulation.

Contaminated packaging:
Empty containers should be taken for local recycling, recovery or waste disposal

Components	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
Cupric Chloride, Dihydrate	None	None	None	None

14. TRANSPORT INFORMATION

DOT

UN-No: UN2802
Proper Shipping Name: Copper chloride
Hazard Class: 8
Packing Group: III
Subsidiary Risk: Not applicable
Marine Pollutant Marine Pollutant
ERG No: 154
DOT RQ (lbs): No information available
Symbol(s): PP, R2

TDG (Canada)

UN-No: UN2802
Proper Shipping Name: Copper chloride
Hazard Class: 8
Packing Group: III
Subsidiary Risk: No information available
Description: No information available

ADR

UN-No: UN2802
Proper Shipping Name: Copper chloride
Hazard Class: 8
Packing Group: III
Subsidiary Risk: No information available
Classification Code: No information available
Description: No information available
CEFIC Tremcard No: No information available

IMO / IMDG

UN-No: UN2802
Proper Shipping Name: Copper chloride
Hazard Class: 8
Packing Group: III
Subsidiary Risk: P
Description: No information available
IMDG Page: No information available
Marine Pollutant Marine Pollutant
EMS: F-A
MFAG: No information available
Maximum Quantity: No information available

RID

UN-No: UN2802
Proper Shipping Name: Copper chloride
Hazard Class: 8
Packing Group: III
Subsidiary Risk: 8

Classification Code: No information available
Description: No information available

ICAO

UN-No: UN2802
Proper Shipping Name: Copper chloride
Hazard Class: 8
Packing Group: III
Subsidiary Risk: No information available
Description: No information available

IATA

UN-No: UN2802
Proper Shipping Name: Copper chloride
Hazard Class: 8
Packing Group: III
Subsidiary Risk: No information available
ERG Code: 8L
Description: No information available

15. REGULATORY INFORMATION

International Inventories

Components	U.S. TSCA	Philippines (PICCS)	KOREA KECL	Japan ENCS	CHINA	Australia (AICS)	EINECS-No.
Cupric Chloride, Dihydrate	Not Listed	Present	Not present	Not present	Present	Present	Not present

U.S. Regulations

Cupric Chloride, Dihydrate

New Jersey RTK Hazardous Substance List: sn 2215 (copper compounds0
New Jersey (EHS) List: sn 2215 TPQ: 500 lb.(copper compounds)
New Jersey - Discharge Prevention - List of Hazardous Substances: Present (coper compounds)
Pennsylvania RTK: Environmental hazard (copper compounds)
Pennsylvania RTK - Environmental Hazard List Present (copper compounds)

California Prop. 65: Safe Drinking Water and Toxic Enforcement Act of 1986.

Chemicals Known to the State of California to Cause Cancer:
This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Chemicals Known to the State of California to Cause Reproductive Toxicity:
This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Components	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
Cupric Chloride, Dihydrate	Not Listed	Not Listed	Not Listed	Not Listed

CERCLA/SARA

Components	CERCLA - Hazardous Substances and their Reportable Quantities	Section 302 Extremely Hazardous Substances and TPQs	Section 302 Extremely Hazardous Substances and RQs	Section 313 - Chemical Category	Section 313 - Reporting *de minimis*
Cupric Chloride, Dihydrate	None	None	None	Copper compounds	1%

U.S. TSCA

Components	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)	TSCA 8(d) -Health and Safety Reporting
Cupric Chloride, Dihydrate	Not Applicable	Not Applicable

Canada

WHMIS hazard class:
D1B Toxic materials
E Corrosive material

Cupric Chloride, Dihydrate
D1B E

Canada Controlled Products Regulation:
This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS contains all of the information required by the CPR.

Inventory

Components	Canada (DSL)	Canada (NDSL)
Cupric Chloride, Dihydrate	Not Listed	Not Listed

Components	CEPA Schedule I - Toxic Substances	CEPA - 2010 Greenhouse Gases Subject to Manditory Reporting
Cupric Chloride, Dihydrate	Not listed	Not listed

EU Classification

R-phrase(s)
R34 - Causes burns.
R22 - Harmful if swallowed.
R50/53 - Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S -phrase(s)
S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S60 - This material and its container must be disposed of as hazardous waste.
S61 - Avoid release to the environment. Refer to special instructions/safety data sheets.

Components	Classification	Concentration Limits:	Safety Phrases
Cupric Chloride, Dihydrate		No information	

The product is classified in accordance with Annex VI to Directive 67/548/EEC

Indication of danger:
Xn - Harmful.
N - Dangerous for the environment.

16. OTHER INFORMATION

The MSDS format complies with ANSI Z400.1/Z129.1-2010 standards.

Preparation Date: 27-Jun-2014

Reason for revision: Not applicable

Prepared by: Sonia Owen

Literature reference: No information available

All chemicals may pose unknown hazards and should be used with caution. This Material Safety Data Sheet (MSDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this MSDS. The physical properties reported in this MSDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this MSDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.