



The Science Company™

MSDS

Material Safety Data Sheet

1. PRODUCT AND COMPANY IDENTIFICATION

Product: Cupric Chloride, Dihydrate
Product Code(s): NC-2010, NC-6721, C1009, C1044
CAS#: 10125-13-0
Synonyms: Copper chloride dihydrate; Copper (II) chloride, dihydrate; Copper (2+) chloride dihydrate
Distributor: The Science Company
95 Lincoln St, Denver CO 80203
Ph: (303) 777-3777 Fax: (303) 777-3331
Emergency Number: (800) 255-3924 (CHEM-TEL)
Customer Service: (800) 372-6726

2. HAZARDS IDENTIFICATION

Emergency Overview: CAUTION! MAY CAUSE IRRITATION TO SKIN, EYES, RESPIRATORY TRACT, AND/OR GASTROINTESTINAL TRACT. MAY BE HARMFUL IF SWALLOWED, INHALED, OR ABSORBED THROUGH SKIN.

Safety Ratings: Health: 2, Moderate Reactivity: 1, Slight
Flammability: 0, None Contact: 3, Severe

OSHA Regulatory Status: This product is considered a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Potential Acute Health Effects:

Routes of Exposure: Inhalation, ingestion, skin contact, eye contact

Inhalation: Causes irritation to respiratory tract, symptoms may include coughing, sore throat, and shortness of breath. May result in ulceration and perforation of respiratory tract. When heated, this compound may give off copper fume, which can cause symptoms similar to the common cold, including chills and stuffiness of the head.

Ingestion: May cause burning pain in the mouth, esophagus, and stomach. Hemorrhagic gastritis, nausea, vomiting, abdominal pain, metallic taste, and diarrhea may occur. If vomiting does not occur immediately systemic copper poisoning may occur. Symptoms may include capillary damage, headache, cold sweat, weak pulse, kidney and liver damage, central nervous excitation followed by depression, jaundice, convulsions, blood effects, paralysis and coma. Death may occur from shock or renal failure.

Skin Contact: Causes irritation, redness, and pain. Some individuals may develop copper allergies.

Eye Contact: Causes severe irritation with symptoms of redness, pain, blurred vision, discoloration, and possible eye damage.

Target Organs: Skin, Liver, Kidneys, Lungs, Blood, Respiratory Tract

Chronic Health Effects: Prolonged or repeated skin exposure may cause 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. Repeated inhalation of dust can produce varying degree of respiratory irritation or lung damage.

Aggravation of: Repeated or prolonged exposure to the substance can produce target organs damage.
Medical Conditions: Persons with pre-existing skin disorders, impaired liver, kidney, or pulmonary function, glucose 6-phosphate-dehydrogenase deficiency, or pre-existing Wilson's disease may be more susceptible to the effects of this material.

Potential Environmental Effects: This material is expected to be very toxic to aquatic life

3. COMPOSITION AND INFORMATION ON INGREDIENTS

<u>Components</u>	<u>CAS#</u>	<u>Chemical Formula</u>	<u>Formula Weight</u>	<u>Hazardous</u>	<u>% by Weight</u>
Cupric Chloride, Dihydrate	10125-13-0	$\text{CuCl}_2 \cdot 2\text{H}_2\text{O}$	170.48	Yes	>99.0

4. FIRST AID MEASURES

First Aid Procedures:

Inhalation: Remove to fresh air. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. Get medical attention.

Ingestion: Induce vomiting as directed by medical personnel. Never give anything by mouth to an unconscious person. GET MEDICAL ATTENTION IMMEDIATELY.

Skin Contact: In case of contact, wash skin plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. Get medical attention.

Eye Contact: Check for and remove contact lenses. Immediately flush eyes with gentle but large stream of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention.

General Advice: In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

Notes to Physician: Treat symptomatically

5. FIRE FIGHTING MEASURES

NFPA Ratings: Health: 3 Flammability: 0 Reactivity: 0

Flammable Properties: Material is not flammable.

Flash Point: Not applicable **Auto-**

ignition Temp: Not applicable

Flammable Limits in Air (% by volume): Not applicable

Suitable Extinguishing Media: Use any means suitable for extinguishing surrounding fire.

Unsuitable Extinguishing Media: Not applicable

Hazardous Combustion Products: Not available

Specific Hazards: Non combustible. When heated to decomposition it emits toxic fumes of hydrogen chloride. When heated to decomposition it emits corrosive fumes. Contact with metals may evolve flammable hydrogen gas. Containers may explode when heated. When mixed with potassium or sodium, it produces a strong explosion on impact. Slightly explosive in the presence of heat.

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: Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Ventilate area of leak or spill. Isolate hazard area and keep unnecessary and unprotected personnel away from the area of the leak or spill. Wear appropriate personal protective equipment as specified in the Exposure Control and Personal Protection Section 8. Avoid contact with eyes, skin, and clothing. Corrosive solid. Poisonous solid.

Environmental Precautions: Prevent further leakage or spillage if safe to do so. Do not contaminate water. Avoid discharge into drains, water courses or onto the ground. In case of large spill, dike if needed.

Methods for Containment: Prevent entry into waterways, sewer, basements or confined areas. Dike the spilled material, where this is possible. Use water spray to reduce vapors.

Methods for Cleaning Up: Pick up and place in a suitable container for reclamation or disposal, using a method that does not generate dust. Clean contaminated surface thoroughly. Never return spills in original containers for re-use. Clean up in accordance with all applicable regulations. US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities.

7. HANDLING AND STORAGE

Handling: Wear personal protective equipment (see section 8). Use only in well-ventilated areas. Provide sufficient air exchange and/or exhaust in work rooms. Avoid contact with skin, eyes and clothing. Do not breathe dust. Do not ingest. Keep away from incompatible materials. Handle in accordance with good industrial hygiene and safety practice. Wash thoroughly after handling. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquids). Observe all warnings and precautions listed for the product.

Storage: Store in a cool, dry, ventilated area away from incompatible materials. Keep containers tightly closed and upright. Keep away from food, drink and animal feedingstuffs. Keep out of the reach of children.

8. EXPOSURE CONTROL AND PERSONAL PROTECTION

Exposure Limits:

Product:	ACGIH:	TWA: 1 mg(Cu)/m ³
	OSHA:	TWA: 1 mg(Cu)/m ³

Engineering Controls: Ensure adequate ventilation. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Personal Protective Equipment:

Eye Protection:	Wear safety glasses with side shields or goggles.
Skin Protection:	Wear appropriate chemical resistant clothing (with long sleeves) and appropriate chemical resistant gloves.
Respiratory Protection:	A NIOSH- approved dust respirator may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Use a positive-pressure air-supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air-purifying respirators may not provide adequate protection.
General Hygiene Considerations:	Avoid contact with skin, eyes and clothing. When using, do not eat, drink or smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Provide eyewash station and safety shower.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Solid
Appearance:	Crystals
Color:	Bluish-green
Odor:	Odorless
Molecular Formula:	CuCl ₂ ·2H ₂ O
Molecular Weight:	170.48
pH:	No information found
Specific Gravity:	2.54
Freezing/Melting Point:	100°C (212°F)
Boiling Point:	Decomposition temperature: 992.78°C (1819°F)
Flash Point:	Not applicable
Auto Ignition Temperature:	Not applicable
Flammable Limits in Air (% by Volume):	Not applicable
Solubility:	76 parts/100 parts water @ 25C
Vapor Pressure:	Not applicable
Vapor Density:	5.9
Percent Volatile:	0 %
Odor threshold (ppm):	No information available
Evaporation Rate:	No information available
Partition Coefficient (n-octanol/water):	No information available

10. STABILITY AND REACTIVITY

Stability:	Stable under normal conditions.
Conditions to Avoid:	Incompatibles, moisture
Incompatible Materials:	Oxidizing agents, metals, acids, potassium, sodium, hydrazine, nitromethane, acetylene, sodium hypobromite
Hazardous Decomposition Products:	Oxides of the contained metal and halogen, possibly also free or ionic halogen.
Possibility of Hazardous Reactions:	No information available
Hazardous Polymerization:	Will not occur.

11. TOXICOLOGICAL INFORMATION

Toxicological Data:

Product:	Oral Rat LD50:	584 mg/kg
Acute Effects:	Harmful if swallowed or inhaled. May be corrosive.	
Local Effects:	Causes irritation or burns to any area of contact. Prolonged or repeated skin contact may cause drying, cracking, or irritation.	
Sensitization:	Not a skin sensitizer.	
Chronic Effects:	Prolonged or repeated skin contact may cause dermatitis and defatting, dryness, and cracking of the skin. May cause damage to kidneys, lungs, liver, or skin.	
Carcinogenic Effects:	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.	
Skin Corrosion/Irritation:	Defatting, drying, and cracking of skin. May be corrosive to skin and eyes.	
Epidemiology:	No epidemiological data is available for this product.	
Mutagenicity:	May affect genetic material	
Neurological Effects:	No information found	
Reproductive Effects:	May cause adverse reproductive effects.	
Teratogenic Effects:	No information found	
Target Organs and Symptoms:	Skin, liver, kidneys, lungs.	

12. ECOLOGICAL INFORMATION

Ecotoxicological Data:

Product:	LC50 Fish:	<1 mg/L 96 H
	IC50 Algae:	<1 mg/L 72 H

Ecotoxicity:	Expected to be very harmful to aquatic organisms.
Environmental Effects:	This product may be harmful to the environment.
Persistence and Degradability:	This material is expected to significantly bioaccumulate. This material has an experimentally-determined bioconcentration factor (BCF) of greater than 100. Bioaccumulation data for copper.
Partition Coefficient (n-octanol/water):	No information found

13. DISPOSAL INFORMATION

Disposal Instructions:	Dispose of this material and its container to hazardous or special waste collection point. Incinerate the material under controlled conditions in an approved incinerator. All wastes must be handled in accordance with local, state and federal regulations.
Contaminated Packaging:	Since emptied containers retain product residue, follow label warnings even after container is emptied. Offer rinsed packaging material to local recycling facilities.
Waste Codes:	No information found

14. TRANSPORT INFORMATION

DOT:

UN Number:	UN2802
Proper Shipping Name:	Copper Chloride
Hazard Class:	8
Packaging Group:	III

15. REGULATORY INFORMATION

U.S. Federal Regulations:

OSHA:	This product is considered a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
TSCA Inventory:	Cupric Chloride <i>Anhydrous</i>

U.S. EPCRA (SARA Title III):

Sections 311/312:	<u>Hazard Categories</u>	<u>List (Yes/No)</u>
	Section 311 – Hazardous Chemical	Yes
	Immediate Hazard	Yes
	Delayed Hazard	Yes
	Fire Hazard	No
	Pressure Hazard	No
	Reactivity Hazard	No

Section 313:	Toxic Chemical or Category:	Copper Compounds
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CERCLA Reportable Quantities: Cupric Chloride *Anhydrous*: 10 lbs

International Inventories: (Cupric Chloride <i>Anhydrous</i>)	Country(s) or Region	Inventory Name	On Inventory (Yes/No)*
	Australia	Australian Inventory of Chemical Substances (AICS)	Yes
	Canada	Domestic Substances List (DSL)	Yes
	Canada	Non-Domestic Substances List (NDSL)	No
	China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
	Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
	Europe	European List of Notified Chemical Substances (ELINCS)	No
	Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
	Korea	Existing Chemicals List (ECL)	Yes
	New Zealand	New Zealand Inventory	N/A
	Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes

*A "Yes" indicates that the listed component(s) of this product comply with the inventory requirements administered by the governing country(s)

16. OTHER INFORMATION

Product Use: For manufacturing, industrial and laboratory use only; not for household use.

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