Material Safety Data Sheet
Copper(II) chloride dihydrate

ACC# 05625

Section 1 - Chemical Product and Company Identification

**MSDS Name:** Copper(II) chloride dihydrate  
**Catalog Numbers:** AC206340000, AC206345000, AC270530000, AC270530010, AC270532500, AC315280000, AC315281000, AC315281000, AC405840000, AC405840050, AC405845000, S73193, S73196, S75104, S75105, S75106, S93217, S93217A, S93218, S93218A, S93219, S93220, C454-3, C454-500, C455-500  
**Synonyms:** Cupric chloride dihydrate.  
**Company Identification:**  
Fisher Scientific  
1 Reagent Lane  
Fair Lawn, NJ 07410  
**For information, call:** 201-796-7100  
**Emergency Number:** 201-796-7100  
**For CHEMTREC assistance, call:** 800-424-9300  
**For International CHEMTREC assistance, call:** 703-527-3887

Section 2 - Composition, Information on Ingredients

<table>
<thead>
<tr>
<th>CAS#</th>
<th>Chemical Name</th>
<th>Percent</th>
<th>EINECS/ELINCS</th>
</tr>
</thead>
<tbody>
<tr>
<td>10125-13-0</td>
<td>Copper(II) chloride dihydrate</td>
<td>&gt;98</td>
<td>unlisted</td>
</tr>
</tbody>
</table>

Section 3 - Hazards Identification

**EMERGENCY OVERVIEW**

Appearance: green solid.  
**Warning!** Harmful if swallowed. Causes respiratory tract irritation. Irritant. May cause allergic skin reaction. Causes eye and skin irritation. Inhalation of fumes may cause metal-fume fever. Hygroscopic (absorbs moisture from the air). The toxicological properties of this material have not been fully investigated.  
**Target Organs:** Respiratory system, eyes, skin.

**Potential Health Effects**

**Eye:** Causes eye irritation. Exposure to particulates or solution may cause conjunctivitis, ulceration, and corneal abnormalities. Contact with the eyes may cause corneal damage. May cause chemical conjunctivitis.  
**Skin:** Causes skin irritation. May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material. May cause irritation with burning pain, itching and redness.  
**Ingestion:** Harmful if swallowed. May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May cause hemorrhaging of the digestive tract. The toxicological properties of this substance have not been fully investigated.  
**Inhalation:** Causes respiratory tract irritation. May cause ulceration and perforation of the nasal septum if inhaled in excessive quantities. 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. The toxicological properties of this substance have not been fully investigated. May be harmful if inhaled. Can produce delayed pulmonary edema.  
**Chronic:** Prolonged or repeated skin contact may cause dermatitis. Effects may be delayed. Individuals with Wilson's disease are unable to metabolize copper. Thus, copper accumulates in various tissues and may result in liver, kidney, and brain damage.

Section 4 - First Aid Measures
**Eyes:** Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

**Skin:** Get medical aid. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

**Ingestion:** Never give anything by mouth to an unconscious person. Get medical aid. Do NOT induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water.

**Inhalation:** Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid. Do NOT use mouth-to-mouth resuscitation. If breathing has ceased apply artificial respiration using oxygen and a suitable mechanical device such as a bag and a mask.

**Notes to Physician:** Treat symptomatically and supportively.

**Antidote:** The use of d-Penicillamine as a chelating agent should be determined by qualified medical personnel.

---

**Section 5 - Fire Fighting Measures**

**General Information:** As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. 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. Use extinguishing media appropriate to the surrounding fire. Substance is noncombustible.

**Extinguishing Media:** Substance is noncombustible; use agent most appropriate to extinguish surrounding fire.

**Flash Point:** Not applicable.

**Autoignition Temperature:** Not applicable.

**Explosion Limits, Lower:** Not available.

**Upper:** Not available.

**NFPA Rating:** (estimated) Health: 2; Flammability: 0; Instability: 0

---

**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. Clean up spills immediately, observing precautions in the Protective Equipment section. Avoid generating dusty conditions. Provide ventilation.

---

**Section 7 - Handling and Storage**

**Handling:** Wash thoroughly after handling. Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Avoid ingestion and inhalation. Use with adequate ventilation. Wash clothing before reuse.

**Storage:** Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Store protected from moisture.

---

**Section 8 - Exposure Controls, Personal Protection**

**Engineering Controls:** Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

**Exposure Limits**

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH</th>
<th>NIOSH</th>
<th>OSHA - Final PELs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper(II) chloride dihydrate</td>
<td>none listed</td>
<td>1 mg/m3 TWA (as Cu, except Copper fume)</td>
<td>none listed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(listed under Copper compounds, n.o.s.)</td>
<td></td>
</tr>
</tbody>
</table>

---

https://fscimage.fishersci.com/msds/05625.htm
OSHA Vacated PELs: Copper(II) chloride dihydrate: No OSHA Vacated PELs are listed for this chemical. Cupric chloride anhydrous: 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 or European Standard EN166.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

Section 9 - Physical and Chemical Properties

Physical State: Solid
Appearance: green
Odor: odorless
pH: 3.6 for 0.2 M soln.
Vapor Pressure: Not available.
Vapor Density: 5.9 (air=1)
Evaporation Rate: Not available.
Viscosity: Not available.
Boiling Point: 1819 deg F
Freezing/Melting Point: 212 deg F
Decomposition Temperature: 1819 deg F
Solubility: 1150 g/l (5% aq.sol.) in water.
Specific Gravity/Density: 2.54 (water=1)
Molecular Formula: CuCl2.2H2O
Molecular Weight: 170.4788

Section 10 - Stability and Reactivity

Chemical Stability: Stable at room temperature in closed containers under normal storage and handling conditions.

Conditions to Avoid: Dust generation, excess heat, exposure to moist air or water.

Incompatibilities with Other Materials: Not available.

Hazardous Decomposition Products: Hydrogen chloride, irritating and toxic fumes and gases, chloride fumes.

Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

RTECS#: 
CAS# 10125-13-0: GL7030000
CAS# 7447-39-4: GL7000000

LD50/LC50:
Not available.

CAS# 7447-39-4:
Oral, mouse: LD50 = 233 mg/kg;
Oral, rat: LD50 = 584 mg/kg;
Oral, rat: LD50 = 140 mg/kg;

Carcinogenicity:
Epidemiology: No information found
Teratogenicity: No information found
Reproductive Effects: No information found
Mutagenicity: No information found
Neurotoxicity: No information found
Other Studies:

Section 12 - Ecological Information

No information available.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed.
RCRA U-Series: None listed.

Section 14 - Transport Information

<table>
<thead>
<tr>
<th></th>
<th>US DOT</th>
<th>Canada TDG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shipping Name:</td>
<td>COPPER CHLORIDE</td>
<td>COPPER CHLORIDE</td>
</tr>
<tr>
<td>Hazard Class:</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>UN Number:</td>
<td>UN2802</td>
<td>UN2802</td>
</tr>
<tr>
<td>Packing Group:</td>
<td>III</td>
<td>III</td>
</tr>
</tbody>
</table>

Section 15 - Regulatory Information

US FEDERAL

TSCA
CAS# 10125-13-0 is not on the TSCA Inventory because it is a hydrate. It is considered to be listed if the CAS number for the anhydrous form is on the inventory (40CFR720.3(u)(2)).
CAS# 7447-39-4 is listed on the TSCA inventory.

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 Hazardous Substances and corresponding RQs
CAS# 7447-39-4: 10 lb final RQ; 4.54 kg final RQ

SARA Section 302 Extremely Hazardous Substances
None of the chemicals in this product have a TPQ.

SARA Codes
CAS # 10125-13-0: immediate, delayed.

Section 313
This material contains Copper(II) chloride dihydrate (listed as Copper compounds, n.o.s.), >98%, (CAS# 10125-
13-0) which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.
This material contains Cupric chloride anhydrous (listed as Copper compounds, n.o.s.), -%, (CAS# 7447-39-4)
which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

**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:**
CAS# 7447-39-4 is listed as a Hazardous Substance under the CWA.
None of the chemicals in this product are listed as Priority Pollutants under the CWA. CAS# 10125-13-0 is listed
as a Toxic Pollutant under the Clean Water Act. CAS# 7447-39-4 is listed as a Toxic Pollutant under the Clean Water
Act.

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

**STATE**
CAS# 10125-13-0 can be found on the following state right to know lists: California, (listed as Copper
compounds, n.o.s.), New Jersey, (listed as Copper compounds, n.o.s.), Pennsylvania, (listed as Copper compounds, n.
o.s.).

CAS# 7447-39-4 can be found on the following state right to know lists: California, New Jersey, (listed as Copper
compounds, n.o.s.), Pennsylvania, Massachusetts.

**California Prop 65**
California No Significant Risk Level: None of the chemicals in this product are listed.

**European/International Regulations**

**European Labeling in Accordance with EC Directives**

**Hazard Symbols:**
XN

**Risk Phrases:**
R 22 Harmful if swallowed.
R 36/37/38 Irritating to eyes, respiratory system and skin.

**Safety Phrases:**
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.

**WGK (Water Danger/Protection)**
CAS# 10125-13-0: No information available.
CAS# 7447-39-4: 2

**Canada - DSL/NDSL**
CAS# 7447-39-4 is listed on Canada's DSL List.

**Canada - WHMIS**
This product has a WHMIS classification of D2B, D1B.
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the
MSDS contains all of the information required by those regulations.

**Canadian Ingredient Disclosure List**
CAS# 10125-13-0 (listed as Copper compounds, n.o.s.) is listed on the Canadian Ingredient Disclosure List.
CAS# 7447-39-4 (listed as Copper compounds, n.o.s.) is listed on the Canadian Ingredient Disclosure List.

---

**Section 16 - Additional Information**

**MSDS Creation Date:** 6/09/1999
**Revision #10 Date:** 5/16/2007

The information above is believed to be accurate and represents the best information currently available to us. However, we make no
warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting
from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no
ever event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental,
consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.

https://fscimage.fishersci.com/msds/05625.htm (5 of 5)  7/23/2007 12:18:00 PM