



**SAFETY DATA SHEET**  
COPPER (II) CHLORIDE DIHYDRATE

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Revision No: 1

**Section 1: Identification of the substance/mixture and of the company/undertaking**

**1.1. Product identifier**

**Product name:** COPPER (II) CHLORIDE DIHYDRATE  
**CAS number:** 10125-13-0  
**EINECS number:** 231-210-2  
**Product code:** GPC7103  
**Synonyms:** CUPRIC CHLORIDE DIHYDRATE

**1.2. Relevant identified uses of the substance or mixture and uses advised against**

**Use of substance / mixture:** Manufacture of substances. Laboratory chemicals.

**1.3. Details of the supplier of the safety data sheet**

**Company name:** Atom Scientific Ltd  
Unit 2B East Tame Business Park  
Rexcine Way  
Hyde  
Cheshire  
SK14 4GX  
United Kingdom  
**Tel:** +44 161 366 5123  
**Fax:** +44 170 433 7167  
**Email:** technical@atomscientific.com

**1.4. Emergency telephone number**

**Emergency tel:** +44 161 366 5123  
(office hours only)

**Section 2: Hazards identification**

**2.1. Classification of the substance or mixture**

**Classification under CLP:** Met. Corr. 1: H290; Acute Tox. 4: H302+312; Skin Irrit. 2: H315; Eye Dam. 1: H318; Aquatic Acute 1: H400; Aquatic Chronic 2: H411

**Most important adverse effects:** May be corrosive to metals. Harmful if swallowed or in contact with skin. Causes skin irritation. Causes serious eye damage. Very toxic to aquatic life. Toxic to aquatic life with long lasting effects.

**2.2. Label elements**

**Label elements under CLP:**

**Hazard statements:** H290: May be corrosive to metals.  
H302+312: Harmful if swallowed or in contact with skin.

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H315: Causes skin irritation.

H318: Causes serious eye damage.

H400: Very toxic to aquatic life.

H411: Toxic to aquatic life with long lasting effects.

**Signal words:** Danger

**Hazard pictograms:** GHS05: Corrosion

GHS07: Exclamation mark

GHS09: Environmental



**Precautionary statements:** P273: Avoid release to the environment.

P280: Wear protective gloves/protective clothing/eye protection/face protection.

P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

### 2.3. Other hazards

**PBT:** This product is not identified as a PBT/vPvB substance.

## Section 3: Composition/information on ingredients

### 3.1. Substances

**Chemical identity:** COPPER (II) CHLORIDE DIHYDRATE

**CAS number:** 10125-13-0

**EINECS number:** 231-210-2

**Contains:** Molecular Formula:  $\text{CuCl}_2 \cdot 2\text{H}_2\text{O}$

Molecular Weight: 170.48 g/mol.

## Section 4: First aid measures

### 4.1. Description of first aid measures

**Skin contact:** Remove all contaminated clothes and footwear immediately unless stuck to skin. Wash immediately with plenty of soap and water. Consult a doctor.

**Eye contact:** Immediately flush with plenty of water for up to 15 minutes. Remove any contact lenses and open eyes wide apart. Get medical attention immediately. Continue to rinse.

**Ingestion:** Do not induce vomiting. Never give anything by mouth to an unconscious person. Wash out mouth with water. Consult a doctor.

**Inhalation:** If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a doctor.

### 4.2. Most important symptoms and effects, both acute and delayed

**Skin contact:** Harmful if absorbed through skin Causes skin burns There may be redness or whiteness of the skin in the area of exposure. Irritation or pain may occur at the site of

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contact. Blistering may occur. Progressive ulceration will occur if treatment is not immediate.

**Eye contact:** Causes eye burns Corneal burns may occur. There may be severe pain. The eyes may water profusely. The vision may become blurred. May cause permanent damage.

**Ingestion:** Harmful if swallowed. Corrosive burns may appear around the lips. There may be soreness and redness of the mouth and throat. There may be difficulty swallowing. There may be vomiting. Nausea and stomach pain may occur.

**Inhalation:** May be harmful if inhaled. Causes respiratory tract irritation. There may be irritation of the throat with a feeling of tightness in the chest. Exposure may cause coughing or wheezing. May cause drowsiness and dizziness.

**Delayed / immediate effects:** Immediate effects can be expected after short-term exposure.

**4.3. Indication of any immediate medical attention and special treatment needed**

**Immediate / special treatment:** Show this safety data sheet to the doctor in attendance. Eye bathing equipment should be available on the premises.

**Section 5: Fire-fighting measures**

**5.1. Extinguishing media**

**Extinguishing media:** Water spray. Alcohol resistant foam. Dry chemical powder. Carbon dioxide.

**5.2. Special hazards arising from the substance or mixture**

**Exposure hazards:** Hydrogen chloride gas. Copper oxides.

**5.3. Advice for fire-fighters**

**Advice for fire-fighters:** Wear self-contained breathing apparatus. Wear protective clothing to prevent contact with skin and eyes. Use water spray to cool unopened containers.

**Section 6: Accidental release measures**

**6.1. Personal precautions, protective equipment and emergency procedures**

**Personal precautions:** Wear respiratory protection. Avoid dust formation Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. Refer to section 8 of SDS for personal protection details.

**6.2. Environmental precautions**

**Environmental precautions:** Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into environment must be avoided.

**6.3. Methods and material for containment and cleaning up**

**Clean-up procedures:** Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

**6.4. Reference to other sections**

**Reference to other sections:** For personal protection, see section 8. For waste disposal, see section 13.

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**Section 7: Handling and storage**

**7.1. Precautions for safe handling**

**Handling requirements:** Avoid direct contact with the substance. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.2.

**7.2. Conditions for safe storage, including any incompatibilities**

**Storage conditions:** Store in cool place. Keep container tightly closed in a dry and well-ventilated place.  
Hygroscopic

**7.3. Specific end use(s)**

**Specific end use(s):** No other specific uses stipulated other than the uses mentioned in section 1.2.

**Section 8: Exposure controls/personal protection**

**8.1. Control parameters**

**Workplace exposure limits:** No data available.

**8.1. DNEL/PNEC Values**

**DNEL / PNEC** No data available.

**8.2. Exposure controls**

**Engineering measures:** Handle in accordance with good industrial hygiene and safety practice. Wash hands before and after breaks and at the end of workday.

**Respiratory protection:** Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Hand protection:** Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with application laws and good laboratory practises. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it. Full contact - Material: Nitrile rubber. Minimum layer thickness: 0.11 mm. Break through time: 8 hrs. Splash contact - Material: Nitrile rubber. Minimum layer thickness: 0.11 mm. Break through time: 8hrs. If used in solution, or mixed with substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves.

**Eye protection:** Face shield and safety glasses. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

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**Skin protection:** Complete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Environmental:** Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

**Section 9: Physical and chemical properties**

**9.1. Information on basic physical and chemical properties**

**State:** Crystalline

**Colour:** Dark blue

**Solubility in water:** Soluble

**Melting point/range °C:** 100

**Relative density:** 2.51

**pH:** 3.0 - 3.8

**9.2. Other information**

**Other information:** No data available.

**Section 10: Stability and reactivity**

**10.1. Reactivity**

**Reactivity:** Stable under recommended transport or storage conditions.

**10.2. Chemical stability**

**Chemical stability:** Stable under recommended storage conditions.

**10.3. Possibility of hazardous reactions**

**Hazardous reactions:** Hazardous reactions will not occur under normal transport or storage conditions.

**10.4. Conditions to avoid**

**Conditions to avoid:** Heat. Moisture

**10.5. Incompatible materials**

**Materials to avoid:** Alkali metals.

**10.6. Hazardous decomposition products**

**Haz. decomp. products:** In combustion emits toxic fumes. In the event of fire: see section 5

**Section 11: Toxicological information**

**11.1. Information on toxicological effects**

**Relevant hazards for substance:**

Hazard	Route	Basis
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Acute toxicity (ac. tox. 4)	DRM ING	Based on test data
Skin corrosion/irritation	DRM	Based on test data
Serious eye damage/irritation	OPT	Based on test data

**Symptoms / routes of exposure**

**Skin contact:** Harmful if absorbed through skin Causes skin burns There may be redness or whiteness of the skin in the area of exposure. Irritation or pain may occur at the site of contact. Blistering may occur. Progressive ulceration will occur if treatment is not immediate.

**Eye contact:** Causes eye burns Corneal burns may occur. There may be severe pain. The eyes may water profusely. The vision may become blurred. May cause permanent damage.

**Ingestion:** Harmful if swallowed. Corrosive burns may appear around the lips. There may be soreness and redness of the mouth and throat. There may be difficulty swallowing. There may be vomiting. Nausea and stomach pain may occur.

**Inhalation:** May be harmful if inhaled. Causes respiratory tract irritation. There may be irritation of the throat with a feeling of tightness in the chest. Exposure may cause coughing or wheezing. May cause drowsiness and dizziness.

**Delayed / immediate effects:** Immediate effects can be expected after short-term exposure.

**Other information:** RTECS: GL7030000. Depending on the intensity and duration of exposure, effects may vary from mild irritation to severe destruction of tissue. Symptoms of systemic copper poisoning may include: capillary damage, headache, cold sweats, weak pulse, kidney and liver damage, central nervous system excitation followed by depression, jaundice, convulsions, paralysis and coma. Death may occur from shock or renal failure. 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. Symptoms observed shortly before death were: shock and renal failure.

**Section 12: Ecological information**

**12.1. Toxicity**

**Ecotoxicity values:**

Species	Test	Value	Units
Cyprinus carpio (Carp)	96H LC50	0.12 - 0.23	mg/l
Lepomis macrochirus	96H LC50	0.9	mg/l
Ictalurus punctatus	60D NOEC	0.013	mg/l

**12.2. Persistence and degradability**

**Persistence and degradability:** The methods for determining the biological degradability are not applicable to inorganic substances.

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**12.3. Bioaccumulative potential**

**Bioaccumulative potential:** No data available.

**12.4. Mobility in soil**

**Mobility:** Soluble in water.

**12.5. Results of PBT and vPvB assessment**

**PBT identification:** This product is not identified as a PBT/vPvB substance.

**12.6. Other adverse effects**

**Other adverse effects:** Very toxic to aquatic life with long lasting effects Toxic to aquatic organisms, may cause long-term affects in the aquatic environment.

**Section 13: Disposal considerations**

**13.1. Waste treatment methods**

**Disposal operations:** Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Offer surplus and non-recyclable solutions to a licensed disposal company.

**Disposal of packaging:** Dispose of as unused product.

**NB:** The user's attention is drawn to the possible existence of regional or national regulations regarding disposal.

**Section 14: Transport information**

**14.1. UN number**

**UN number:** UN2802

**14.2. UN proper shipping name**

**Shipping name:** COPPER CHLORIDE

**14.3. Transport hazard class(es)**

**Transport class:** 8

**14.4. Packing group**

**Packing group:** III

**14.5. Environmental hazards**

**Environmentally hazardous:** No

**Marine pollutant:** Yes

**14.6. Special precautions for user**

**Tunnel code:** E

**Transport category:** 3

**Section 15: Regulatory information**

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**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**

**Specific regulations:** This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

**15.2. Chemical Safety Assessment**

**Chemical safety assessment:** For this product a chemical safety assessment was not carried out.

**Section 16: Other information**

**Other information**

**Other information:** This safety data sheet is prepared in accordance with Commission Regulation (EU) No 453/2010.

\* indicates text in the SDS which has changed since the last revision.

**Phrases used in s.2 and 3:** H290: May be corrosive to metals.  
H302+312: Harmful if swallowed or in contact with skin.  
H315: Causes skin irritation.  
H318: Causes serious eye damage.  
H400: Very toxic to aquatic life.  
H411: Toxic to aquatic life with long lasting effects.

**Legal disclaimer:** The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. This company shall not be held liable for any damage resulting from handling or from contact with the above product.