



Infosafe No™	1CH28	Issue Date : August 2018	RE-ISSUED by CHEMSUPP
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Product Name : **COPPER (II) CHLORIDE Dihydrate**

Classified as hazardous

1. Identification

GHS Product Identifier	COPPER (II) CHLORIDE Dihydrate	
Company Name	CHEM-SUPPLY PTY LTD (ABN 19 008 264 211)	
Address	38 - 50 Bedford Street GILLMAN SA 5013 Australia	
Telephone/Fax Number	Tel: (08) 8440-2000 Fax: (08) 8440-2001	
Emergency Contact Address	CHEMCALL: 1800 127 406 (Australia) / +64-4-917-9888 (International)	
Recommended use of the chemical and restrictions on use	Algicide, electroplating baths, isomerisation and cracking catalyst, mordant in dyeing and printing fabrics, sympathetic ink, disinfectant, pyrotechnics, wood preservation, fungicides, metallurgy, preservation of pulpwood, deodorising and desulfurising petroleum distillates, photography, water purification, feed additive, acrylonitrile manufacturing and pigment for glass and ceramics and laboratory reagent.	
Other Names	Name	Product Code
	COPPER (II) CHLORIDE Dihydrate LR	CL004
	Copper chloride	
	Cupric chloride	
	COPPER (II) CHLORIDE Dihydrate AR	CA004
Other Information	Chem-Supply Pty Ltd does not warrant that this product is suitable for any use or purpose. The user must ascertain the suitability of the product before use or application intended purpose. Preliminary testing of the product before use or application is recommended. Any reliance or purported reliance upon Chem-Supply Pty Ltd with respect to any skill or judgement or advice in relation to the suitability of this product of any purpose is disclaimed. Except to the extent prohibited at law, any condition implied by any statute as to the merchantable quality of this product or fitness for any purpose is hereby excluded. This product is not sold by description. Where the provisions of Part V, Division 2 of the Trade Practices Act apply, the liability of Chem-Supply Pty Ltd is limited to the replacement of supply of equivalent goods or payment of the cost of replacing the goods or acquiring equivalent goods.	

2. Hazard Identification

GHS classification of the substance/mixture	Corrosive to Metals: Category 1 Hazardous to the Aquatic Environment - Acute Hazard: Category 1 Hazardous to the Aquatic Environment - Long-Term Hazard: Category 2 Acute Toxicity - Dermal: Category 4 Eye Damage/Irritation: Category 1 Acute Toxicity - Oral: Category 4 Skin Corrosion/Irritation: Category 2
Signal Word (s)	DANGER
Hazard Statement (s)	H290 May be corrosive to metals. H302 Harmful if swallowed. H312 Harmful 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.
Pictogram (s)	Corrosion, Exclamation mark, Environment
	  
Precautionary statement – Prevention	P234 Keep only in original container. P264 Wash thoroughly after handling. P270 Do not eat, drink or smoke when using this product. P273 Avoid release to the environment. P280 Wear protective gloves/protective clothing/eye protection/face protection.



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Precautionary statement – Response	P301+P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. P330 Rinse mouth. P302+P352 IF ON SKIN: Wash with plenty of soap and water. P312 Call a POISON CENTER or doctor/physician if you feel unwell. P362 Take off contaminated clothing and wash before reuse. P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P310 Immediately call a POISON CENTER or doctor/physician. P390 Absorb spillage to prevent material damage.
Precautionary statement – Storage	P406 Store in corrosive resistant/... container with a resistant inner liner.
Precautionary statement – Disposal	P501 Dispose of contents/container to an approved waste disposal plant.

3. Composition/information on ingredients

Chemical Characterization	Solid				
Ingredients	<u>Name</u>	<u>CAS</u>	<u>Proportion</u>	<u>Hazard Symbol</u>	<u>Risk Phrase</u>
	Copper chloride dihydrate	10125-13-0	100 %		

4. First-aid measures

Inhalation	If inhaled, remove from contaminated area to fresh air immediately. Apply artificial respiration if not breathing. If breathing is difficult, give oxygen. Consult a physician.
Ingestion	Rinse mouth thoroughly with water immediately, repeat until all traces of product have been removed. DO NOT INDUCE VOMITING. Seek immediate medical advice.
Skin	Immediately remove contaminated clothing and wash affected area with water for at least 15 minutes. Ensure contaminated clothing is washed before re-use. Seek immediate medical advice /attention depending on the severity.
Eye contact	If contact with the eye(s) occurs, wash with copious amounts of water for approximately 15 minutes holding eyelid(s) open. Take care not to rinse contaminated water into the non-affected eye. Seek immediate medical assistance.
First Aid Facilities	Maintain eyewash fountain and drench facilities in work area.
Advice to Doctor	Treat symptomatically based on judgement of doctor and individual reactions of the patient.
Other Information	For advice, contact a Poisons Information Centre (Phone eg Australia 13 1126; New Zealand 0800 764 766) or a doctor.

5. Fire-fighting measures

Suitable extinguishing media	Use fire extinguishing media appropriate for surrounding environment. Use water spray, dry chemical, carbon dioxide, or appropriate foam.
Hazards from Combustion Products	Irritating, toxic and corrosive fumes and vapours, including hydrogen chloride gas, copper fumes, chlorinated compounds, oxides of copper and chlorine, possibly also free, or ionic chlorine, Cl ⁻ . Contact with acids or acid fumes may release highly toxic hydrogen chloride fumes.
Hazchem Code	2X
Decomposition Temp.	> 100 °C; loses water from 70-200 °C. Anhydrous substance decomposes to cuprous chloride at 993 °C.
Precautions in connection with Fire	Wear SCBA and chemical splash suit. Fully-encapsulating, gas-tight suits should be worn for maximum protection.

6. Accidental release measures

Personal Precautions	Avoid inhalation, contact with skin, eyes and clothing. Evacuate the area of all non-essential personnel.
Personal Protection	Wear protective clothing specified for normal operations (see Section 8)
Clean-up Methods - Small Spillages	Sweep up (avoid generating dust) and using clean non-sparking tools transfer to a clean, suitable, clearly labelled container for disposal in accordance with local regulations.
Environmental Precautions	Prevent contamination of soil and water.

7. Handling and storage



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Precautions for Safe Handling	Avoid ingestion and inhalation of dust. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure. Minimize dust generation and accumulation. Keep containers tightly sealed when not in use. Ensure good ventilation at the workplace. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Wear appropriate protective equipment. Keep away from incompatibles such as oxidizing agents, metals, acids. Keep container dry.
Conditions for safe storage, including any incompatibilities	Store in a suitable, labelled, tightly closed containers, in a cool, dry, well-ventilated area, away from incompatible substances. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.
Corrosiveness	Corrosive to aluminium. May corrode metals in the presence of moisture.
Storage Regulations	Refer Australian Standard AS 3780-1994 'The storage and handling of corrosive substances'.
Storage Temperatures	Store at room temperature (15 to 25 °C recommended).

8. Exposure controls/personal protection

Occupational exposure limit values	<u>Name</u>	STEL		TWA		<u>Footnote</u>
		<u>mg/m3</u>	<u>ppm</u>	<u>mg/m3</u>	<u>ppm</u>	
	Copper chloride dihydrate			0.2		Copper (fume)
Other Exposure Information	A time weighted average (TWA) has been established for Copper, dusts & mists (as Cu) (Safe Work Australia) of 1 mg/m ³ and for Copper (fume) (Worksafe Aust) of 0.2 mg/m ³ . The exposure value at the TWA is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week.					
Appropriate engineering controls	In industrial situations maintain the concentrations values below the TWA. This may be achieved by process modification, use of local exhaust ventilation, capturing substances at the source, or other methods. These methods should be used in preference to personal protective equipment.					
Respiratory Protection	Where ventilation is not adequate, respiratory protection may be required. Avoid breathing dust, vapours or mists. Respiratory protection should comply with AS 1716 - Respiratory Protective Devices and be selected in accordance with AS 1715 - Selection, Use and Maintenance of Respiratory Protective Devices. Filter capacity and respirator type depends on exposure levels. In event of emergency or planned entry into unknown concentrations a positive pressure, full-facepiece SCBA should be used. If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, maintenance and inspection.					
Eye Protection	The use of a face shield, chemical goggles or safety glasses with side shield protection as appropriate. Must comply with Australian Standards AS 1337 and be selected and used in accordance with AS 1336.					
Hand Protection	Hand protection should comply with AS 2161, Occupational protective gloves - Selection, use and maintenance. Recommendation: Excellent: Vinyl, nitrile, neoprene gloves. Fair: NR latex.					
Personal Protective Equipment	Personal protective equipment should not solely be relied upon to control risk and should only be used when all other reasonably practicable control measures do not eliminate or sufficiently minimise risk. Guidance in selecting personal protective equipment can be obtained from Australian, Australian/New Zealand or other approved standards.					
Footwear	Safety boots in industrial situations is advisory, foot protection should comply with AS 2210, Occupational protective footwear - Guide to selection, care and use.					
Body Protection	Clean clothing or protective clothing should be worn, preferably with an apron. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals.					
Hygiene Measures	Always wash hands before smoking, eating or using the toilet. Wash contaminated clothing and other protective equipment before storing or re-using.					

9. Physical and chemical properties

Form	Solid
Appearance	Green to blue powder or orthorhombic, bipyramidal crystals; deliquescent in moist air, efflorescent in dry air.
Odour	Odourless; slight odour of hydrochloric acid.
Decomposition Temperature	> 100 °C; loses water from 70-200 °C. Anhydrous substance decomposes to cuprous chloride at 993 °C.
Melting Point	100 °C (decomposition).



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Boiling Point	Decomposes.
Solubility in Water	Freely soluble in water (770 g/l @ 20 °C; 1150 g/l @ 20 °C).
Solubility in Organic Solvents	Freely soluble in methanol, ethanol; moderately soluble in acetone, ethyl acetate; slightly soluble in ether.
Specific Gravity	2.54.
pH	3.0 to 3.8 (5% solution). The aqueous solution is acid to litmus.
Vapour Density (Air=1)	>1; 5.9.
Volatile Component	0 %vol @ 21 °C
Flammability	Non combustible material.
Explosion Properties	Not considered to be an explosion hazard. Slightly explosive in presence of heat. Containers may explode when heated. When mixed with potassium or sodium, it produces a strong explosion on impact.
Molecular Weight	170.48
Other Information	Bulk Density: approx. 1070 kg/m ³ .

10. Stability and reactivity

Chemical Stability	Stable under ordinary conditions of use and storage. Hygroscopic.
Conditions to Avoid	Dust generation, excess heat, exposure to moist air/moisture or water and incompatible materials.
Incompatible Materials	Alkali metals (potassium or sodium), acetylene, acids or acid fumes, water/moisture/moist air, various metals in the presence of moisture, finely powdered metals, aluminium, magnesium, hydrazine, nitromethane, oxidizing agents, reducing agents, hydroxylamine, solutions of sodium hypobromite.
Hazardous Decomposition Products	Irritating, toxic and corrosive fumes and vapours, including hydrogen chloride gas, copper fumes, chlorinated compounds, oxides of copper and chlorine, possibly also free, or ionic chlorine, Cl ⁻ . Contact with acids or acid fumes may release highly toxic hydrogen chloride fumes. Contact with metals may evolve flammable hydrogen gas.
Possibility of hazardous reactions	When mixed with potassium or sodium, it produces a strong explosion on impact. Reacts violently with powders of base metals, magnesium, and hydroxylamine. Reactive with oxidizing agents. Contact with acetylene may cause formation of copper acetylides that are shock-sensitive. Evolves highly toxic hydrogen chloride fumes on contact with acids or acid fumes. Solutions of sodium hypobromite are decomposed by powerful catalytic action of cupric ions, even as impurities. Copper(II) salts are readily reduced and therefore should be considered reactive with reducing agents, strong acids, alkali metals and finely powdered metals.
Hazardous Polymerization	Will not occur.

11. Toxicological Information

Acute Toxicity - Oral	LD50 (rat): 340 mg/kg (anhydrous substance).
Ingestion	Harmful if swallowed. Ingestion of sufficient concentrations may causes irritation and possible burning pain of mucous membranes in the mouth, pharynx, oesophagus, and gastrointestinal tract, with metallic taste, salivation, headache, nausea, haemorrhagic gastritis, abdominal pain, bloody diarrhoea and vomiting. The vomitus is characteristically greenish-blue. 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 (anuria, oliguria, haematuria, acute kidney tubular necrosis, jaundice, hepatomegaly), central nervous excitation followed by depression, jaundice, somnolence, convulsions, blood effects (haemolysis, anaemia), paralysis and coma. Death may occur from shock or renal failure. Rarely methaemoglobinaemia has been reported.
Inhalation	May be harmful if inhaled. Inhalation of mists or vapours causes irritation of mucous membranes of the respiratory tract (nose, throat, lungs), symptoms may include sore throat, coughing, wheezing, dyspnoea, and shortness of breath. May result in harmful corrosive effects including lesions, ulceration and perforation of the nasal septum and respiratory tract, delayed pulmonary oedema, pneumonitis and emphysema. 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.
Skin	Causes skin irritation, possibly severe, resulting in redness, itching, burning pain, dermatitis, and possible systemic toxicity. May cause skin burns. May be harmful if absorbed through the skin. May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material.
Eye	Causes severe damage with symptoms of redness, inflammation, stinging, pain, blurred vision, discolouration, and possible eye damage (permanent corneal opacification, chemical conjunctivitis,



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Carcinogenicity	ulceration) leading to irreversible eye injury. Not listed in the IARC Monographs.
Chronic Effects	Prolonged or repeated skin exposure may cause defatting leading to dermatitis. Prolonged or repeated exposure to dusts of copper salts may cause discolouration 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. 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. 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 of systemic copper poisoning may include: capillary damage, headache, cold sweat, weak pulse, and kidney and liver damage, central nervous system excitation followed by depression, jaundice, convulsions, paralysis, and coma. Death may occur from shock or renal failure. Depending on the intensity and duration of exposure, effects may vary from mild irritation to severe destruction of tissue.
Mutagenicity	May affect genetic material. Mutagenic for bacteria and/or yeast. Copper (II) chloride (1:2): DNA damage system-mammal (species unspecified): lym 2 mmol/L ('Dangerous Properties of Industrial Materials', 7th Ed., by N. Irving Sax and Richard J. Lewis).

12. Ecological information

Ecotoxicity	Quantitative data on the ecological effect of this product are not available. Highly toxic for aquatic organisms. May cause long-term adverse effects in the aquatic environment.
Persistence and degradability	Methods for the determination of biodegradability are not applicable to inorganic substances.
Environmental Protection	Do not allow to enter waters, waste water, or soil!

13. Disposal considerations

Disposal Considerations	Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and disposed of according to relevant local, state and federal government regulations.
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14. Transport information

Transport Information	Dangerous goods of Class 8 (Corrosive) are incompatible in a placard load with any of the following: Class 1, Class 4.3, Class 5, Class 6, if the Class 6 dangerous goods are cyanides and the Class 8 dangerous goods are acids, Class 7; and are incompatible with food and food packaging in any quantity.
U.N. Number	2802
UN proper shipping name	COPPER CHLORIDE
Transport hazard class(es)	8
Hazchem Code	2X
Packaging Method	3.8.8
Packing Group	III
EPG Number	8A1
IERG Number	37

15. Regulatory information

Regulatory Information	Listed in the Australian Inventory of Chemical Substances (AICS). Not listed under WHS Regulation 2011, Schedule 10 - Prohibited carcinogens, restricted carcinogens and restricted hazardous chemicals.
Poisons Schedule	S6

16. Other Information

Literature References	'Standard for the Uniform Scheduling of Medicines and Poisons .', Commonwealth of Australia. Lewis, Richard J. Sr. 'Hawley's Condensed Chemical Dictionary 13th. Ed.', Rev., John Wiley and Sons, Inc., NY, 1997. National Road Transport Commission, 'Australian Code for the Transport of Dangerous Goods by Road and Rail 7th. Ed.', 2007. Safe Work Australia, 'National Code of Practice for the Preparation of Safety Data Sheets for Hazardous Chemicals', 2011.
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Safety Data Sheet

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Standards Australia, 'SAA/SNZ HB 76:2010 Dangerous Goods - Initial Emergency Response Guide', Standards Australia/Standards New Zealand, 2010.
Safe Work Australia, 'Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004)]'.
Safe Work Australia, 'Hazardous Substances Information System, 2005'.
Safe Work Australia, 'National Code of Practice for the Labelling of Safe Work Hazardous Substances (2011)'.
Safe Work Australia, 'National Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:1003(1995) 3rd Edition]'.

**Contact
Person/Point**

Paul McCarthy Ph. (08) 8440 2000 **DISCLAIMER STATEMENT:**

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**Empirical Formula &
Structural Formula**

CuCl₂.2H₂O.

...End Of MSDS...

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