



Infosafe No™	1CHGY	Issue Date : February 2019	RE-ISSUED by CHEMSUPP
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Product Name : **COPPER (II) SULFATE Anhydrous**

Classified as hazardous

1. Identification

GHS Product Identifier COPPER (II) SULFATE Anhydrous

Company Name CHEM-SUPPLY PTY LTD (ABN 19 008 264 211)

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Recommended use of the chemical and restrictions on use Dehydrating agent for detection and removal of trace amounts of water from organic compounds including alcohol) and laboratory reagent.

Other Names

<u>Name</u>	<u>Product Code</u>
Copper sulfate anhydrous	
Cupric sulfate anhydrous	
COPPER (II) SULFATE Anhydrous LR	CL071
Copper vitriol anhydrous	
Copper monosulfate anhydrous	

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 Hazardous to the Aquatic Environment - Acute Hazard: Category 1
Hazardous to the Aquatic Environment - Long-Term Hazard: Category 1
Eye Damage/Irritation: Category 2A
Acute Toxicity - Oral: Category 4
Skin Corrosion/Irritation: Category 2

Signal Word (s) WARNING

Hazard Statement (s) H302 Harmful if swallowed.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H410 Very toxic to aquatic life with long lasting effects.

Pictogram (s) Exclamation mark, Environment

Precautionary statement – Prevention P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P264 Wash thoroughly after handling.

Precautionary statement – Response P270 Do not eat, drink or smoke when using this product.
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.
P332+P313 If skin irritation occurs: Get medical advice/attention.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313 If eye irritation persists: Get medical advice/attention.



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Precautionary statement – Disposal P501 Dispose of contents/container to an approved waste disposal plant.

3. Composition/information on ingredients

Chemical Characterization Solid

Ingredients	Name	CAS	Proportion	Hazard Symbol	Risk Phrase
	Copper (II) sulfate anhydrous	7758-98-7	98-100 %		

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. Immediately obtain medical aid if cough or other symptoms appear.

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 medical advice /attention depending on the severity.

Eye contact Immediately irrigate with copious quantity of water for at least 15 minutes. Eyelids to be held open. In all cases of eye contamination it is a sensible precaution to seek medical advice.

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 the National Poisons Information Centre (Phone Australia 13 11 26; New Zealand 0800 764 766) or a doctor.

5. Fire-fighting measures

Hazards from Combustion Products Irritating, toxic and corrosive fumes and vapours, including oxides of carbon, oxides of sulfur and copper fumes. Contact with incompatibles such as hydroxylamine may cause ignition; contact with magnesium produces flammable hydrogen gas; contact with acetylene forms dangerous acetylides.

Specific Methods Use extinguishing media most appropriate for the surrounding fire.

Hazchem Code 2Z

Precautions in connection with Fire Wear SCBA and structural firefighter's uniform.

6. Accidental release measures

Personal Precautions Avoid inhalation, contact with skin, eyes and clothing.

Personal Protection Use personal protective equipment listed in Section 8.

Clean-up Methods - Small Spillages Sweep up (avoid generating dust) and remove to a suitable, clearly labelled container for disposal in accordance with local regulations.

Environmental Precautions Prevent from entering into drains, ditches, rivers or the sea.

7. Handling and storage

Precautions for Safe Handling Avoid generation or accumulation of dusts. Avoid contact with eyes. Avoid contact with skin. Avoid ingestion and inhalation of material. Keep container tightly closed when not in use. Use in well ventilated areas. In case of insufficient ventilation, wear suitable respiratory equipment. Wear suitable protective clothing. Keep away from incompatibles.

Conditions for safe storage, including any incompatibilities Store in a cool, dry place. Store in well ventilated area. Keep containers closed at all times. Isolate from incompatible substances.

Corrosiveness Solutions are strongly corrosive to iron and galvanized iron.

8. Exposure controls/personal protection

Other Exposure Information These Workplace Exposure Standards are guides to be used in the control of occupational health hazards. All atmospheric contamination should be kept to as low a level as is workable. These workplace exposure standards should not be used as fine dividing lines between safe and dangerous



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	concentrations of chemicals. They are not a measure of relative toxicity. A time weighted average (TWA) has been established for Copper, dusts and mists (as Cu) (Safe Work Australia) of 1 mg/m ³ and for Copper fume (Safe Work Australia) 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.
Hand Protection	Must comply with Australian Standards AS 1337 and be selected and used in accordance with AS 1336. Hand protection should comply with AS 2161, Occupational protective gloves - Selection, use and maintenance. Recommendation: Excellent: Nitrile, Neoprene, PVC. Poor: 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.
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	Grayish-white to greenish-white rhombic crystals or amorphous powder.
Odour	Odourless.
Melting Point	>200 °C slowly decomposes
Solubility in Water	Soluble in water (203 g/L @ 20 °C).
Solubility in Organic Solvents	Soluble in methanol; practically insoluble in ethanol. Readily dissolves in aqueous ammonia and excess alkali metal cyanides.
Specific Gravity	3.6
pH	pH 4 (50 g/L, H ₂ O, 20 °C)
Flammability	Non combustible material.
Molecular Weight	159.60
Other Information	Dielectricity constant: 10.3 (17-22 °C)

10. Stability and reactivity

Chemical Stability	Stable. Hygroscopic. Slowly effloresces in air.
Conditions to Avoid	Exposure to moisture. Incompatibles.
Incompatible Materials	Acetylene, hydroxylamine, alkalis, phosphates, magnesium, strong reducing agents, powdered metals, hydrazine and nitromethane.
Possibility of hazardous reactions	Copper salts may react with acetylene to form explosive acetylides. Anhydrous copper sulfate can cause ignition upon contact with hydroxylamine due to the heat of coordination. Exothermic dissolution process with water. Copper sulfate can react with magnesium to evolve flammable hydrogen gas. Copper sulfate may react with acetylene to form dangerous acetylides.
Hazardous Polymerization	Will not occur.

11. Toxicological Information

Ingestion	Harmful if swallowed. Symptoms may include repeated vomiting. May cause burning pain in the mouth,
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Inhalation	throat, esophagus and stomach, diarrhea, nausea, abdominal pain and ulceration of the gastrointestinal tract. 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. Fatalities have occurred as a result of ingesting gram quantities of copper sulfate. May be harmful if inhaled. Inhalation of copper dust and fumes causes irritation to the mucous membranes and respiratory tract (nose, throat, lungs) and mucous membranes. Symptoms may include of coughing, sore throat, wheezing, metallic taste, high temperature, and shortness of breath. May result in harmful corrosive effects including lesions, ulcerations and perforation of the nasal septum and respiratory tract, delayed pulmonary edema, pneumonitis and emphysema. When heated this compound may give off copper fume, which may cause 'fume metal fever' with symptoms similar to the common cold, including chills and stiffness of the head as well as high temperatures, nausea, coughing and general weakness.
Skin	May cause discolouration of the skin; greenish-black skin. May be harmful if absorbed through the skin. Causes skin irritation, possibly severe, resulting in redness, itching and pain. May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material. May cause skin burns.
Eye	Causes eye irritation with symptoms including redness, itching, pain, stinging, blurred vision, local inflammation, tissue destruction, adhesion of the eyelid to the eyes, discoloration and possible eye damage (permanent corneal opacification, chemical conjunctivitis, ulceration) leading to irreversible eye injury.
Carcinogenicity	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.

12. Ecological information

Persistence and degradability	No persistence/degradability data available for this product.
Environmental Protection	Contain spillage. Prevent entry to waterways and drains. When released into the soil, this material may leach into ground water.
Acute Toxicity - Fish	Severe marine pollutant - IMDG Code. The following applies to copper compounds: copper ions toxic for fish at concentrations below 1 mg/l: LC50 (Pimephales promelas): 0.039 mg/l/96h. Fish: C. auratus toxic 0.01 mg/l. The following applies to copper sulfate toxicity for fish concentrations below 1 mg/L: LC50 (rainbow trout): 0.1 mg/L/96hr. LC50 (goldfish): 0.1 mg/L/96hr.

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 9 (Miscellaneous Dangerous Goods) are incompatible in a placard load with any of the following: Class 1, Class 5, if the Class 9 dangerous goods are fire risk substances.
U.N. Number	3077
UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.



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Transport hazard class(es)	9
Hazchem Code	2Z
Packing Group	III
EPG Number	9C1
IERG Number	47
Other Information	The Special Provision AU01 of the ADG Code are peculiar to this Code and are therefore not applicable to international transport, or to air or sea transport within Australia. SP AU01 Environmentally Hazardous Substances meeting the descriptions of UN 3077 or UN 3082 are not subject to this Code when transported by road or rail in; (a) packagings; (b) IBCs; or (c) any other receptacle not exceeding 500 kg(L).

15. Regulatory information

Regulatory Information	Listed in the Australian Inventory of Chemical Substances (AICS).
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. 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 Chemical 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]'. Paul McCarthy Ph. (08) 8440 2000 DISCLAIMER STATEMENT: All information provided in this data sheet or by our technical representatives is compiled from the best knowledge available to us. However, since data, safety standards and government regulations are subject to change and the conditions of handling and use, or misuse, are beyond our control, we make no warranty either expressed or implied, with respect to the completeness or accuracy to the information contained herein. Chem-Supply accepts no responsibility whatsoever for its accuracy or for any results that may be obtained by customers from using the data and disclaims all liability for reliance on information provided in this data sheet or by our technical representatives.
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