

Material Safety Data Sheet

Infosafe No. 1CHGY Issue Date: May 2004
Product Name: COPPER (II) SULFATE Anhydrous

RE-ISSUED by CHEMSUPP

Classified as hazardous according to criteria of NOHSC

COMPANY DETAILS

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

IDENTIFICATION

Product Name COPPER (II) SULFATE Anhydrous
Proper Shipping Name ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S.

Other Names	<u>Name</u>	<u>Mancode</u>
	Copper sulfate anhydrous	
	Cupric sulfate anhydrous	
	COPPER (II) SULFATE Anhydrous LR	CL071
	Copper vitriol anhydrous	
	Copper monosulfate anhydrous	

UN Number 3077

DG Class 9

Packing Group III

Hazchem Code 2X

Poisons Schedule S6

Product Use Dehydrating agent for detection and removal of trace amounts of water from organic compounds including alcohol) and laboratory reagent.

Physical Data

Appearance	Grayish-white to greenish-white rhombic crystals or amorphous powder.
Specific Gravity	3.6
Solubility in Water	203 g/L @ 20 °C

Other Properties

Corrosiveness	Solutions are strongly corrosive to iron and galvanized iron.
pH Value	3.5 - 4.5 (50 g/L, H ₂ O, 20 °C)
Solubility in Organic Solvents	Practically insoluble in alcohol. Readily dissolves in aqueous ammonia and excess alkali metal cyanides.
Form	Solid
Decomposition Temp.	> 560 °C
Stability	Stable. Hygroscopic. Slowly effloresces in air.
Haz.	Will not occur.
Polymerization	
Materials to Avoid	Acetylene, hydroxylamine, alkalies, phosphates, hydrazine and nitromethane.
Formula	CuSO ₄
Molecular Weight	159.60
Other Information	Dielectricity constant: 10.3 (17-22 °C)

Ingredients

Ingredients	<u>Name</u>	<u>CAS</u>	<u>Proportion</u>
	Copper (II) sulfate anhydrous	7758-98-7	98-100 %

HEALTH HAZARD INFORMATION

Health Effects

Acute - Swallowed	Toxic by ingestion. Symptoms may include repeated vomiting. May cause burning pain in the mouth, 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.
Acute - Eye	May cause local inflammation, tissue destruction, corneal opacity and adhesion of the eyelid to the eye.
Acute - Skin	Irritating to skin. May cause redness and itching.
Acute - Inhaled	Irritating to the respiratory tract. Symptoms may include coughing, sore throat and shortness of breath. May result in ulceration and perforation respiratory tract.

Chronic Chronic ingestion may cause liver, brain, muscle and kidney disfunction.

Other Information Copper salts may decrease the toxicity of molybdenum. Zinc salts may decrease the toxicity of copper salts.

Persons with pre-existing skin disorders, impaired liver, kidney or pulmonary function, glucose 6-phosphate-dehydrogenase deficiency or Wilson's disease may be more susceptible to the effects of the material.

First Aid

Swallowed Rinse mouth thoroughly with water immediately. Give plenty of water to drink. Seek immediate medical assistance. If vomiting occurs give further water to achieve effective dilution.

Eye Immediately irrigate with copious quantity of water for at least 15 minutes. Eyelids to be held open. Seek immediate medical assistance.

Skin Wash affected areas with copious quantities of water immediately. Remove contaminated clothing and wash before re-use. Seek medical attention.

Inhaled Remove victim to fresh air. Employ artificial respiration if indicated. Seek urgent medical assistance.

First Aid Facilities Maintain eyewash fountain and drench facilities in work area.

Other Information If poisoning occurs, contact a Doctor or Poisons Information Centre. Phone 13 1126 from anywhere in Australia.

Advice to Doctor

Advice to Doctor Consult Poisons Information Centre.

Other Health Hazard Information

Sensitization of Product Repeated or prolonged exposure may cause sensitisation to copper sulfate and develop allergic contact dermatitis.

Teratogenicity EMBRYOTOXICITY: Animal studies indicate that a deficiency or excess of copper in the body can cause significant harm to developing embryos.

Mutagenicity Has caused mutagenic effects on laboratory animals.

PRECAUTIONS FOR USE

Other Exposure Info. A time weighted average (TWA) has been established for Copper, dusts and mists (as Cu) (Worksafe Aust) of 1 mg/m³ and for Copper fume (Worksafe Aust) of 0.2 mg/m³. 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.

Eng. 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.

Personal Protection

Respirator Type (AS 1716)	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.
Glove Type	Hand protection should comply with AS 2161, Occupational protective gloves - Selection, use and maintenance.
Clothing	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.
Work/Hygienic Practices	Always wash hands before smoking, eating or using the toilet. Wash contaminated clothing and other protective equipment before storing or re-using.

Flammability

Fire Hazards Non combustible material.

SAFE HANDLING INFORMATION

Storage and Transport

Storage Precautions	Store in a cool, dry place. Store in well ventilated area. Keep containers closed at all times.
Transport	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.
Handling	Avoid generating and inhaling dust.
Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S.
IERG Number	47
Packaging Method	#5.9.9

Spills and Disposal

Spills & Disposal Do NOT touch or walk through this product. Stop leak if safe to do so. Prevent entry into waterways, drains, confined areas. Water spray may be used to knock down or divert vapour clouds. Prevent dust cloud. Avoid inhalation of asbestos dust.
SEEK EXPERT ADVICE ON HANDLING AND DISPOSAL.

Fire/Explosion Hazard

Fire/Explos. Hazard	Material does not burn. Fire or heat may produce irritating, poisonous and/or corrosive gases. Containers may explode when heated. Runoff may pollute waterways.
Hazardous Combustion Products	Oxides of sulfur and copper fume.
Fire Fighting Procedures	Small fire: Use dry chemical, CO ₂ , water spray or foam. Large fire: Use water spray, fog or foam. If safe to do so, move undamaged containers from the fire area. Cool containers with flooding quantities of water until well after the fire is out.
Fire Fighting Precautions	Wear SCBA and structural firefighter's uniform.
Hazardous Reaction	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.
Hazchem Code	2X

OTHER INFORMATION

Toxicology	LD ₅₀ oral (rat): 300 mg/kg. LDLo oral (human): 50 mg/kg.
Information on Ecological Effects	Severe marine pollutant - IMDG Code. Very toxic to aquatic life. 96-hour LC ₅₀ (fish): < 1 mg/L (Cu). 96-hour LC ₅₀ (algae): < 1 mg/L (Cu).
Environ. Protection	Contain spillage. Prevent entry to waterways and drains. When released into the soil, this material may leach into ground water.
Risk Statement	R22 Harmful if swallowed. R36/38 Irritating to eyes and skin. R50 Very toxic to aquatic organisms. R53 May cause long term adverse effects in the aquatic environment.
Safety Statement	S22 Do not breathe dust. S60 This material and its container must be disposed of as hazardous waste. S61 Avoid release to the environment. Refer to special instructions/safety data sheet.
Hazard Category	Harmful, Irritant

References

- Commonwealth Department of Health and Aged Care, 'Standard for the Uniform Scheduling of Drugs and Poisons No. 18', Commonwealth of Australia, Canberra 2002.
- Lewis, Richard J. Sr. 'Hawley's Condensed Chemical Dictionary 13th. Ed.', Rev., John Wiley & Sons, Inc., NY, 1997.
- National Road Transport Commission, 'Australian Dangerous Goods Code 6th. Ed.', AGPS, Canberra, 1998.
- South Australia Government, 'Approved Code of Practice for the Labelling of Workplace Substances', 1995.
- Standards Australia, 'SAA/SNZ HB76:1997 Dangerous Goods - Initial Emergency Response Guide', Standards Australia/Standards New Zealand, 1997.
- Worksafe Australia, 'Approved Criteria for Classifying Hazardous Substances [NOHSC:1008(1999)]', AusInfo, Canberra 1999.
- Worksafe Australia, 'List of Designated Hazardous Substances [NOHSC:10005(1999)]', AusInfo, Canberra 1999.
- Worksafe Australia, 'National Code of Practice for the Labelling of Workplace Substances [NOHSC:2012(1994)]', AGPS, Canberra 1994.
- Worksafe Australia, 'National Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:1003(1995)]', AusInfo, Canberra 1995.

User Codes

	<u>User Code</u>
Risk Phrases	22-36/38-50/53
Safety phrases	22-60-61
First Aid Phrases	A,G3,E2,S1
CAS No.	7758-98-7

Empirical Formula & Structural Formula CuSO₄

CONTACT POINT

Contact

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