## 1. Identification

**GHS Product Identifier**
COPPER (II) SULFATE Pentahydrate

**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

**Recommended use of the chemical and restrictions on use**
Used in agriculture as a soil additive, pesticide, fungicide, bactericide, algicide and herbicide, Bordeaux mixture, feed and fertiliser additive, germicide, textile mordant, tanning leather, preserving hides, pigments, dyes, electric batteries, electroplated coatings, medicine, wood and pulp preservative, engraving, lithography, ore flotation, steel manufacture, synthetic rubber, asphalt treatment, petroleum refining, copper salts, pyrotechnic compositions, antirusting compositions for radiator and heating systems, water-resistant adhesives for wood, analytical reagent and laboratory reagent.

**Other Names**
- Blue copperas, Blue stone, Blue vitriol, Copper sulfate, Cupric sulfate, Copper monosulfate pentahydrate, Copper vitriol pentahydrate
- COPPER (II) SULFATE Pentahydrate Fine Granular LR
- COPPER (II) SULFATE Pentahydrate Fine Granular AR
- COPPER (II) SULFATE Pentahydrate Fine Granular TG
- COPPER (II) SULFATE Pentahydrate Fine Granular

**Other Information**

**Emergency Contact Number:** +61 08 8440 2000
**Business hours:** 8:30am to 5:00pm, Monday to Friday,

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.
- H400 Very toxic to aquatic life.
- H410 Very toxic to aquatic life with long lasting effects.

**Pictogram(s)**
- Environment, Exclamation mark

**Precautionary statement – Prevention**
- P273 Avoid release to the environment.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.
COPPER (II) SULFATE Pentahydrate

Classified as hazardous

Precautionary statement – Response
P301+P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P302+P352 IF ON SKIN: Wash with plenty of soap and water.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P330 Rinse mouth.
P332+P313 If skin irritation occurs: Get medical advice/attention.
P337+P313 If eye irritation persists: Get medical advice/attention.

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

3. Composition/information on ingredients

Solid

Name  CAS  Proportion  Hazard Symbol  Risk Phrase
Copper (II) sulfate pentahydrate 7758-99-8 98-100 %  N  R51/53

4. First-aid measures

Inhalation  Remove victim to fresh air. Employ artificial respiration if indicated. If symptoms persist, obtain medical attention.
Ingestion  Rinse mouth thoroughly with water immediately. Give plenty of water to drink. Do not induce vomiting. 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.
Eye contact  Immediately irrigate with copious quantity of water for at least 15 minutes. Eyelids to be held open. Seek immediate medical assistance.

First Aid Facilities  Maintain eyewash fountain and drench facilities in work area.
Advice to Doctor  Treat symptomatically or consult a Poisons Information Centre.
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

Suitable extinguishing media  Use appropriate fire extinguisher for surrounding environment.
Hazards from Combustion Products  Oxides of sulfur, oxides of copper and copper fume.
Specific Methods  Small fire: Use dry chemical, CO2, water spray or foam.
Large fire: Use water spray, fog or foam.
Specific hazards arising from the chemical  Runoff may pollute waterways.
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  Wear protective clothing specified for normal operations (see Section 8)
Clean-up Methods - Small Spillages  Absorb or contain liquid with sand, earth or spill control material. Shovel up using non sparking tools and place in a labelled, sealable container for subsequent safe disposal. Put leaking containers in a labelled drum or overdrum.

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

7. Handling and storage
Safety Data Sheet

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 closed when not in use. Work in fume hood and use only with adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Wear suitable protective clothing. Contaminated clothing should be removed and washed before re-use. Wash hands and face thoroughly after working with material. Keep container dry. Ensure a high level of personal hygiene is maintained when using this product. That is, always wash hands before eating, drinking, smoking or using the toilet.

Conditions for safe storage, including any incompatibilities
Store in a cool, dry place. Keep containers closed at all times. Do not store in unsuitable, unlabelled or incorrectly labelled containers.

Corrosiveness
Solutions are corrosive to steel.

8. Exposure controls/personal protection

Other Exposure Information
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.

Appropriate engineering controls
Process modification, use of local exhaust ventilation, capturing substances at the source, or other methods.

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: Nitrile, Neoprene, PVC. Poor: NR latex.

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. 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
Blue granules; blue crystals; light blue powder.

Odour
Odourless.

Melting Point
Loses 2H2O @ 30 °C; loses a further 2H2O @ 110 °C; becomes anhydrous by 250 °C; decomposes @ 560 °C (anhydrous).

Solubility in Water
Very soluble (317 g/L @ 20 °C).

Solubility in Organic Solvents
Solveable in ethanol, methanol and glycerol. Practically insoluble in most organic solvents.

Specific Gravity
2.28

pH
3.5 - 4.5 (50 g/L, H2O, 20 °C)

Flammability
Non combustible material.

Molecular Weight
249.68

Other Information
Dielectricity constant: 6.60 (20 °C)
Taste: Nauseous; metallic taste

10. Stability and reactivity

Chemical Stability
Stable. Slowly efflorescent in air.
COPPER (II) SULFATE Pentahydrate

1. Safety Data Sheet

2. Physical and Chemical Properties

3. Hazard Statements

4. First Aid Measures

5. Fire-fighting Measures

6. Accidental Release Measures

7. Handling and Storage

8. Exposure Controls / Personal Protection

9. Physical and Chemical Stability

10. Stability in Storage

11. Toxicological Information

12. Ecological Information

13. Disposal Considerations
Safety Data Sheet

Product Name: COPPER (II) SULFATE Pentahydrate

**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.

**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.
- **Transport hazard class(es)**
  9
- **Hazchem Code**
  2Z
- **Packaging Method**
  3.8.9
- **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 No. 4', Commonwealth of Australia, June 2013.
- 'Labelling of Hazardous Workplace Chemicals, Code of Practice' Safe Work Australia.
- Standards Australia 'AS 1940-2004 The Storage and Handling of Flammable and Combustible Liquids.
- Worksafe Australia, 'Approved Criteria for Classifying Hazardous Substances [NOHSC:1008(2004)]'.
- Worksafe Australia, 'Hazardous Substances Information System, 2005'.
- Worksafe Australia, 'National Code of Practice for the Labelling of Workplace Hazardous Substances (2011)'.

**Contact Person/Point**
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.

**Empirical Formula & Structural Formula**
CuSO4.5H2O

**Other Information**
Previously labelled as:
R22 Harmful if swallowed.
Product Name: COPPER (II) SULFATE Pentahydrate

Classified as hazardous

R36/38 Irritating to eyes and skin.
R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
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.

End Of MSDS...