

Safety Data Sheet **COPPER (II) SULFATE Pentahydrate 10% Solution**

SDS no. KB1WM6M4 • Version 1.1 • Date of issue: 2024-03-04

SECTION 1: Identification

GHS Product identifier

Product name COPPER (II) SULFATE Pentahydrate 10% Solution

Product number CP755

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.

Supplier's details

Name ChemSupply Australia Pty Ltd
Address 38-50 Bedford Street
5013 Gillman South Australia
Australia

Telephone 08 8440 2000
email www.chemsupply.com.au

Emergency phone number

CHEMCALL 1800 127 406 (Australia) / +64-4-917-9888 (International)

SECTION 2: Hazard identification

General hazard statement

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.

Classification of the substance or mixture

GHS classification in accordance with: UN GHS revision 7

- Hazardous to the aquatic environment, short-term (acute), Cat. 1
- Hazardous to the aquatic environment, long-term (chronic), Cat. 1
- Serious eye damage/eye irritation, Cat. 1

GHS label elements, including precautionary statements

Pictograms

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Signal word

Danger

Hazard statement(s)

H318

Causes serious eye damage

H410

Very toxic to aquatic life with long lasting effects

Precautionary statement(s)

P273

Avoid release to the environment.

P280

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

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/doctor/physician

P391

Collect spillage.

P501

Dispose of contents/container to an approved waste disposal facility

SECTION 3: Composition/information on ingredients

Mixtures

[00] Information on Composition: May contain traces of sulfuric acid as an impurity.

Components

| Component | CAS no. | Concentration |
|--|------------------|---------------------------|
| Copper(II) sulfate pentahydrate (EC no.: 231-847-6; Index no.: 029-023-00-4) | 7758-99-8 | 10 - 10 % (weight) |
| CLASSIFICATIONS: Acute toxicity, oral, Cat. 4; Serious eye damage/eye irritation, Cat. 1; Hazardous to the aquatic environment, short-term (acute), Cat. 1; Hazardous to the aquatic environment, long-term (chronic), Cat. 1. HAZARDS: H302 - Harmful if swallowed; H318 - Causes serious eye damage; H400 - Very toxic to aquatic life; H410 - Very toxic to aquatic life with long lasting effects. [SCLs/M-factors/ATEs]: M=10 | | |
| Water (EC no.: 231-791-2) | 7732-18-5 | 90 - 90 % (weight) |
| CLASSIFICATIONS: No data available. HAZARDS: No data available. | | |

SECTION 4: First-aid measures

Description of necessary first-aid measures

General advice

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

If inhaled

If inhaled, remove from contaminated area to fresh air immediately. Apply artificial respiration if not breathing. If breathing is difficult, give oxygen. Get medical aid if cough or other symptoms appear.

In case of skin contact

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.

In case of eye contact

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

If swallowed

Rinse mouth thoroughly with water immediately, repeat until all traces of product have been removed. Give water to drink. DO NOT INDUCE VOMITING. Seek medical advice if symptoms persist.

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Most important symptoms/effects, acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

Indication of immediate medical attention and special treatment needed, if necessary

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

SECTION 5: Fire-fighting measures

Suitable extinguishing media

Small fire: Use dry chemical, CO₂, water spray or foam.

Large fire: Use water spray, fog or foam.

Specific hazards arising from the chemical

Hazards from Combustion Products: Oxides of sulfur, oxides of copper and copper fume.

Runoff may pollute waterways.

Special protective actions for fire-fighters

Fire fighters should wear full protective clothing and self-contained breathing apparatus (SCBA) operated in positive pressure mode. Fight fire from safe location.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation. Use personal protective equipment. For personal protection see section 8.

Methods and materials for containment and cleaning up

Absorb with dry earth, sand or other non-combustible material. Neutralise with lime or soda ash. Use clean nonsparking tools to collect and seal in properly labelled drums for disposal in an area approved by local authority bylaws. Wash area down with excess water to remove residual material.

Seek expert advice on handling and disposal.

Prevent from entering into drains, ditches or rivers.

SECTION 7: Handling and storage

Precautions for safe handling

Avoid ingestion and inhalation of dust. Avoid contact with eyes, skin, and clothing. Avoid prolonged or Handling repeated exposure.

Minimize dust generation and accumulation. Keep containers closed when not in

use. Work in fumehood 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.

Air sensitive, hygroscopic. Solutions are corrosive to steel.

SECTION 8: Exposure controls/personal protection

Appropriate engineering controls

Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, gas, etc.) below recommended exposure limits.

Individual protection measures, such as personal protective equipment (PPE)

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Eye/face 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.

Skin 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.

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.

SECTION 9: Physical and chemical properties

Basic physical and chemical properties

| | |
|--|--------------------------|
| Physical state | Liquid |
| Appearance | Clear blue liquid |
| Color | Blue |
| Odor | Odourless |
| Odor threshold | No data available. |
| Melting point/freezing point | No data available. |
| Boiling point or initial boiling point and boiling range | No data available. |
| Flammability | Non Combustible Material |
| Lower and upper explosion limit/flammability limit | No data available. |
| Flash point | No data available. |
| Explosive properties | No data available. |
| Auto-ignition temperature | No data available. |
| Decomposition temperature | No data available. |
| Oxidizing properties | No data available. |
| pH | No data available. |
| Kinematic viscosity | No data available. |
| Solubility | No data available. |
| Partition coefficient n-octanol/water (log value) | No data available. |
| Vapor pressure | No data available. |
| Evaporation rate | No data available. |
| Density and/or relative density | Approx 1 |
| Relative vapor density | No data available. |
| Particle characteristics | No data available. |

Supplemental information regarding physical hazard classes

No data available.

Further safety characteristics (supplemental)

No data available.

SECTION 10: Stability and reactivity

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Reactivity

Stable under normal conditions of storage and handling.

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

Copper salts may react with acetylene to form explosive acetylides.

Hazardous Polymerization: Will not occur.

Conditions to avoid

Avoid storing in direct sunlight and avoid extremes of temperature.

Incompatible materials

Acetylene gas; finely powdered metals, eg. magnesium metal; sodium hypobromite solutions; plain steel; galvanised pipes; strong reducing agents; hydroxylamine; strong oxidising agents.

Hazardous decomposition products

No data available.

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity

Acute Toxicity - Oral: LD50 (rat): 482 mg/kg (OECD Test Guideline 401) - Copper sulphate pentahydrate

Ingestion: Harmful by ingestion. May cause burning pain in the mouth, throat, oesophagus 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 repeated vomiting, nausea, diarrhea, salivation, headache, cold sweat, weak pulse and metallic taste. Prolonged exposure to this material may lead to corrosion and necrosis of the gastrointestinal tract, with possible perforation (may occur due to copper sulfate). Copper poisoning leads to capillary damage, kidney and liver damage, central nervous excitation followed by depression, jaundice, convulsions, blood effects (i.e. bleeding of the GI tract), paralysis and coma. Death may occur from shock or renal failure.

Inhalation: Irritating to the respiratory tract. Symptoms may include coughing, wheezing, sore throat and shortness of breath. May result in ulceration and perforation of respiratory tract. Ulceration of the nasal septum is possible, due to trace sulfuric acid impurities. When heated, this compound may give off copper fume, which can cause symptoms similar to the common cold, including chills and stuffiness of the head.

Skin corrosion/irritation

Acute Toxicity - Dermal: LD50 (rat): >2000 mg/kg - - Copper sulphate pentahydrate

Skin: Irritating to skin. May cause redness and itching.

Serious eye damage/irritation

Eye: Causes serious eye damage, irritation, local inflammation, conjunctivitis, ulceration, clouding of the cornea, tissue destruction, corneal opacity and adhesion of the eyelid to the eye. Traces of sulfuric acid impurity may contribute to these effects.

Respiratory or skin sensitization

No data available.

Germ cell mutagenicity

No data available.

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Carcinogenicity

No data available.

Reproductive toxicity

No data available.

Summary of evaluation of the CMR properties

No data available.

Specific target organ toxicity (STOT) - single exposure

No data available.

Specific target organ toxicity (STOT) - repeated exposure

No data available.

Aspiration hazard

No data available.

Additional information

Chronic Effects: Chronic ingestion may cause liver, brain, muscle and kidney disfunction. Prolonged or repeated skin exposure may cause dermatitis. Prolonged or repeated exposure to dusts of copper salts may cause discoloration 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.

SECTION 12: Ecological information

Toxicity

Severe marine pollutant - IMDG Code. Very toxic to aquatic life.

Short Summary of Assessment of Environmental Impact: When released into the soil, this material is not expected to biodegrade and may leach into ground water. When released into the water, this material is not expected to biodegrade or evaporate significantly. This material is expected to bioaccumulate significantly.

[8Y] Acute Toxicity - Daphnia: EC50 (Daphnia magna): 0.02 mg/l/48h. - Copper sulphate pentahydrate

SECTION 13: Disposal considerations

Disposal methods

Product disposal

Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers.

Other disposal recommendations

Do not discharge this material into waterways, drains and sewers.

SECTION 14: Transport information

ADG (Road and Rail)

UN Number: 3082

Class: 9

Packing Group: III

Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Contains COPPER (II) SULPHATE Pentahydrate)

Hazchem emergency action code (EAC)

2X

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IMDG

UN Number: 3082

Class: 9

Packing Group: III

Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Contains COPPER (II) SULPHATE Pentahydrate)

IATA

UN Number: 3082

Class: 9

Packing Group: III

Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Contains COPPER (II) SULPHATE Pentahydrate)

SECTION 15: Regulatory information

Safety, health and environmental regulations specific for the product in question

Australia SUSMP

Poison Schedule: S6

SECTION 16: Other information

20/5/2025 - Corrected UN Number and PSN

Further information/disclaimer

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Standard for the Uniform Scheduling of Medicines and Poisons, Commonwealth of Australia

National Road Transport Commission, 'Australian Code for the Transport of Dangerous Goods by Road and Rail 7th. Ed.'

Safe Work Australia, 'National Code of Practice for the Preparation of Safety Data Sheets for Hazardous Chemicals', July 2020.

Safe Work Australia, 'National Guide for Classifying Hazardous Chemicals', July 2020.

Safe Work Australia, Workplace Exposure Standards for Airborne Contaminants, December 2019

Safe Work Australia, Hazardous Chemical Information System (HCIS), hcis.safeworkaustralia.gov.au

IATA, Dangerous Goods Regulations (DGR)

IMO, International Maritime Dangerous Goods Code (IMDG)