



MATERIAL SAFETY DATA SHEET

Copper Sulfate

1. IDENTIFICATION

Product Name	Copper Sulfate.
Chemical Name	Copper sulfate pentahydrate.
Other Name/s.	Curpic sulfate, blue vitriol, blue stone, blue copperas.
Manufacturers Name	Nutri-Tech Solutions Pty Ltd.
Telephone Number	+61 (0)7 5472 9900.
U.N. Number	None allocated.
Dangerous Goods Class	None allocated.
Secondary Risk	None allocated.
Hazchem Group	None allocated.
Pack Group	None allocated.
EPG	None allocated.
Poisons Schedule	5.
Uses	Agriculture (soil additive, pesticides, Bordeaux mixture), feed additive, germicides, textile mordant, leather industry, pigments, electric batteries, electroplated coatings, copper salts, reagent in analytical chemistry, medicine, wood preservative, preservation of pulp wood and ground pulp, process engraving and lithography, ore flotation, petroleum industry, synthetic rubber, steel manufacture, treatment of natural asphalts. The anhydrous salt is used as a dehydrating agent.

1.1 Emergency Contact Points

Police and Fire Brigade	000.
If ineffective	13 22 03 (Exchange).
For emergency response	1800 625 526.
National Poisons Information Centre	13 11 26 (from anywhere in Australia).

1.2 Physical Description/Properties

Appearance	Clear, blue crystals or powder.
Chemical Formula	$\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$
Odour	No data available.
pH	4



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Flammability	No data available.
Solubility in Water	31.6g/100 ml.
Lower Explosion Limit	No data available.
Upper Explosion Limit	No data available.
Bulk Density	No data available.
Specific Gravity	2.28
Melting Point	150°C
Boiling Point	652°C
Vapour Pressure	No data available.
Evaporation Rate	No data available.
Reactivity Data	No data available.

1.3 Other Properties No data available.

1.4 Ingredients Copper sulfate pentahydrate CAS No. 7758-99-88 >96%, Water CAS No. 7732-18-5 <0.1%, Sulfuric acid (FREE) CAS No. 7664-93-9 <0.2%.

2 HEALTH HAZARD INFORMATION

2.1 Health Effects

2.1.1 Acute

Ingestion	May cause severe digestive tract irritation with abdominal pain, nausea, vomiting and diarrhea. May cause hemorrhaging of the digestive tract.
Eye Contact	May cause eye irritation. Exposures to particles or solution may cause conjunctivitis, ulceration and corneal abnormalities.
Skin Contact	May cause skin irritation.
Inhalation	May cause respiratory tract irritation. May cause ulceration and perforation of the nasal septum if inhaled in excessive quantities.

2.1.2 Chronic Prolonged or repeated skin contact may cause dermatitis. Prolonged or repeated eye contact may cause conjunctivitis. May cause liver and kidney damage. This substance has adverse reproductive and foetal effects in animals. Target organs: kidneys, liver.

2.2 First Aid and Emergency Procedures

Ingestion	Induce vomiting. If victim is conscious and alert, give 2 - 4 cupfuls of milk or water. Seek medical attention immediately.
Eye Contact	Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower lids. Seek medical attention immediately.





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Skin Contact Seek medical attention. Immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes.

Inhalation Remove to fresh air immediately. If not breathing, give artificial respiration. If breathing difficult, give oxygen. Seek medical attention.

2.3 First Aid Facilities Ensure an eye bath and safety shower are available and ready for use.

2.4 Advice to Doctor Treat symptomatically based on judgement of doctor and individual reactions of patient. Penicillamine may be of value as a chelated agent.

2.5 Toxicity Data Oral LD50 (rat) = 300mg/kg, (dog) 60mg/kg
 Oral LDLO (human) 1088mg/kg, (dog) 60 mg/kg
 Not listed as a carcinogen by ACGIH, IARC, NIOSH, NTP or OSHA

3 PRECAUTIONS FOR USE

3.1 Conditions to Avoid Worksafe Australia recommends the following exposure limits: copper, dusts and mists (as Cu) TWA = 1mg/m³, copper (fume) TWA = 0.2mg/m³

3.2 Personal Protection Ensure adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits. Respiratory - always wear a NIOSH-approved respirator. Eyes - wear appropriate protective eye glasses and/or eye/face protection. Skin - wear natural rubber gloves, apron and/or other protective clothing to minimise exposure. Wash hands and face thoroughly after handling, and before eating, drinking, smoking or using toilet facilities.

3.3 Special Fire Fighting Procedures Not applicable.

3.4 Flammability Material is non combustible.

4 SAFE HANDLING INFORMATION

4.1 Storage/Transport. Store in a cool, dry area away from direct sunlight and heat in original containers. Minimise dust generation and accumulation.





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4.2 Packaging/Labeling

UN No	Not applicable.
Pack Group	Not applicable.
Class	Not applicable.
Hazchem Code	Not applicable.
Subs Risk	Not applicable.
EPG No	Not applicable.
Shipping Name	Copper sulfate pentahydrate.
Hazard	HARMFUL.

4.3 Spills and Disposal

Spilled Material	Avoid generating dusts. Vacuum or sweep up material, place into suitable labeled containers and hold for waste disposal. Wash spill residues away with copious amounts of water.
Disposal	Dispose of in accordance with all local, state and federal regulations at an approved waste disposal facility.

4.4 Fire/Explosion Hazard

Fire/Explosion	Material is stable under normal conditions of storage and use. Avoid high aluminium powder, hydroxylamine, magnesium and moist air. Hazardous decomposition products include oxides of sulfur and oxides of copper. Hazardous polymerisation has not been reported.
Extinguishing Media	Use equipment/media appropriate to surrounding fire conditions. SCBA recommended.

5 OTHER INFORMATION

No data available.

DISCLAIMER

The data and recommendations presented herein are based upon research of others and are believed to be accurate. However, no warranty is expressed or implied regarding this data or the results to be obtained from use thereof. **Nutri-Tech Solutions P/L**, assumes no responsibility for the injury to customers or third party proximity caused by the material if reasonable safety procedures are not adhered to as stipulated in this data sheet.

