



33A SAINT DAVID ST
FITZROY VIC 3065

T: +61 3 9419 5666 F: +61 3 9419 6292

E: mes@mes.net.au

MATERIAL SAFETY DATA SHEET

Revision Date: 16/04/2019

Transport/Fire Emergency: **000** (Emergency Services)
Medical Emergency: **131126** (Poisons information)

Copper Sulphate

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION	
PRODUCT NAME:	Copper Sulphate
OTHER NAMES:	Copper sulphate, pentahydrate Copper Sulfate Copper(II) sulphate, pentahydrate
CHEMICAL FORMULA:	CuSO4.5H2O
CHEMICAL NAME:	Sulfuric acid, copper(2+) salt (1:1), pentahydrate
APPLICATION OF SUBSTANCE:	Industrial, professional, consumer uses; Absorbents; Ceramics; Coatings and inks; Cosmetics; Electroplating and galvanic; Fertiliser; Glass; Laboratory chemicals; Lubricants and greases; Leather dyes; Mineral flotation; Raw material for non-ferrous smelting; Non-metal surface treatment; Pigments; Processing aids; Putties, fillers, construction chemicals; Polishes and waxes; Photochemicals; Raw material for production of other compounds and fine chemicals; Rubber and plastic; Washing and cleaning products; Catalyst; Textile dyes; Adhesives; Water treatment.
MANUFACTURED BY:	Redox Pty Ltd 2 Swettenham Road Minto NSW 2566 Australia
CONTACT NUMBERS:	+61-2-97333000
EMERGENCY CONTACTS:	Poisons Information Centre Westmead NSW 1800-251525 131126 Chemcall Australia 1800-127406 +64-4-9179888
2. HAZARDOUS INFORMATION	
Hazardous according to the criteria of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS)	
NOT Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)	
MANUFACTURER'S CODE:	N/A
UN NUMBER:	3077
DANGEROUS GOODS CLASS AND SUBSIDIARY RISK:	47 Low To Moderate Hazard Substances

2. HAZARDOUS INFORMATION	
HAZCHEM CODE:	2Z
POISONS SCHEDULE NUMBER:	Schedule 6
PACKAGING GROUP:	III
HAZARD CATEGORY:	Acute Toxicity (Oral) - Category 4 Serious Eye Damage/Irritation - Category 1 Acute Hazard To The Aquatic Environment - Category 1 Long-term Hazard To The Aquatic Environment - Category 1
CLASS:	N/A

3. COMPOSITION / INFORMATION ON INGREDIENTS	
Copper sulphate, pentahydrate Formula: CuSO ₄ .5H ₂ O CAS Number: 7758-99-8 Proportion: >=98 %	

4. FIRST AID MEASURES	
GENERAL:	Treat symptomatically. Ensure that attending medical personnel are aware of the identity and nature of the product(s) involved, and take precautions to protect themselves. Administer Methylene Blue for methemoglobinemia, BAL, DMPS, EDTA and d-penicillamine. Jaundice and haemolysis can appear after 5-6 hours. Symptoms of liver failure can appear after 3-4 days.
INHALATION:	Remove victim to fresh air and keep at rest in a position comfortable for breathing. If respiratory symptoms persist, get medical advice/attention. Apply resuscitation if victim is not breathing. Administer oxygen if breathing is difficult.
EYE CONTACT:	Immediately flush eyes with running water for several minutes, holding eyelids open and occasionally lifting the upper and lower lids. Remove contact lenses if present and easy to do. Continue rinsing for at least 15 minutes. Immediately call a Poison Centre or doctor/physician for advice - Obtain immediate medical care.
SKIN CONTACT:	Remove contaminated clothing and shoes immediately. Flush skin and hair with running water for several minutes; Wash with plenty of soap and water. If skin irritation occurs, get medical advice/attention. Wash contaminated clothing and shoes before reuse.
INGESTION:	Rinse mouth, then drink plenty of water. Do NOT induce vomiting. Call a Poison Centre or doctor/physician for advice. Never give anything by mouth to an unconscious person.

5. FIRE FIGHTING MEASURES	
EXTINGUISHING MEDIA:	If material is involved in a fire, use dry chemical, Carbon dioxide (CO ₂), foam or water spray for extinction. Use the most appropriate fire-extinguishing methods for the specific situation.
DO NOT USE:	
DEGREE OF FIRE RISK:	Non-combustible; Material does not burn.

5. FIRE FIGHTING MEASURES	
RECOMMENDATIONS:	<p>The substance decomposes on heating producing toxic and corrosive fumes including oxides of Copper, oxides of Sulfur.</p> <p>Contain runoff from fire control water. Runoff may pollute waterways. Dispose of contaminated fire extinguishing water and fire residues according to local regulations.</p> <p>Wear self-contained breathing apparatus (SCBA) in combination with normal firefighting clothing (full fire kit).</p>
6. ACCIDENTAL RELEASE MEASURES	
<p>Ensure adequate ventilation. Do not touch or walk through spilled material. Avoid dust formation. Avoid breathing dust and contact with eyes, skin and clothing. Use personal protective equipment as required</p> <p>Collect material and place it in suitable containers for later disposal; if appropriate, moisten first to prevent dusting.</p> <p>Stop leak if safe to do so. Prevent entry into waterways, drains or confined areas. Prevent dust cloud.</p> <p>Spillages and decontamination runoff should be prevented from entering drains and watercourses. If environmental contamination has occurred advise local emergency services.</p> <p>Spill or leak area should be isolated immediately. Keep unauthorised personnel away. Keep upwind and to higher ground.</p>	
7. HANDLING AND STORAGE	
HANDLING:	<p>Safety showers and eyewash facilities should be provided within the immediate work area for emergency use. Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Avoid dust formation. Avoid breathing dust and contact with eyes, skin and clothing. Use personal protective clothing as required. Avoid release to the environment.</p>
STORAGE:	<p>Store in a cool, dry and well-ventilated place, out of direct sunlight. Keep container tightly closed when not in use. Protect against physical damage and check regularly for spills. Avoid exposure to air/moisture/humidity. Keep away from foodstuffs and incompatible materials. Keep only in the original or suitable, properly labelled container.</p>
8. EXPOSURE CONTROL AND PERSONAL PROTECTION	
ENGINEERING MEASURES:	<p>A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Ensure ventilation is adequate and that air concentrations of components are controlled below Workplace Exposure Standards.</p> <p>Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Take off contaminated clothing and wash before reuse.</p>
<i>PERSONAL PROTECTION</i>	
RESPIRATORY PROTECTION:	<p>Wear respiratory protection in case of inadequate ventilation or if an inhalation risk exists. Recommended: Dust mask/respirator, filter type P.</p>
HAND PROTECTION:	<p>Handle with gloves. Recommended: Impervious gloves.</p>

8. EXPOSURE CONTROL AND PERSONAL PROTECTION	
EYE PROTECTION:	Wear appropriate eye protection to prevent eye contact. Recommended: Chemical goggles; Face-shield for operations that cause spray mist.
SKIN PROTECTION:	Wear appropriate personal protective clothing to avoid skin contact. Recommended: Long- sleeved work clothes or overalls, safety shoes.

9. PHYSICAL AND CHEMICAL PROPERTIES	
APPEARANCE:	Solid, odourless blue or light blue crystals or micro crystals
FLASH POINT:	Not applicable to an inorganic solid
BOILING POINT:	N/A
VAPOUR PRESSURE:	N/A
DENSITY:	2.286 g/cm ³
SPECIFIC GRAVITY:	N/A
SOLUBILITY IN WATER:	22 g/100 ml water 25°C
MELTING POINT:	N/A
DECOMPOSITION TEMP:	>=110 °C

10. STABILITY AND REACTIVITY	
<p>The solution in water is a weak acid. Attacks many metals in the presence of water. Chemically stable under normal conditions of use. Avoid dust formation. Avoid exposure to air. Incompatible/reactive with strong bases, hydroxylamine, magnesium, steel, (finely powdered) metals, sulfuric acid, caustics, ammonia, aliphatic amines, alkanolamines, amides, alkylene oxides, epichlorohydrin, organic anhydrides, isocyanates, vinyl acetate. The substance decomposes on heating producing toxic and corrosive fumes, including oxides of Copper, oxides of Sulfur. Hazardous polymerisation will not occur.</p>	

11. TOXICOLOGICAL INFORMATION

GENERAL INFORMATION

Acute toxicity: Harmful if swallowed; Corrosive on ingestion with abdominal pain, burning sensation, diarrhoea, nausea, vomiting, shock or collapse.

Skin corrosion/irritation: May cause skin irritation, redness, pain. Non-irritating (Rabbit) [OECD Guideline 404].

Eye damage/irritation: Causes serious eye damage, pain, redness, blurred vision. Serious irritation/irreversible eye damage (Rabbit) [OECD Guideline 405].

Respiratory/skin sensitisation: Non-sensitising (Guinea pig) [OECD Guideline 406].

Germ cell mutagenicity: Negative, in-vivo: Non-programmed DNA synthesis, male rats (Copper sulphate) [OECD Guideline 486]. Negative, in-vitro: Bacterial reverse mutation assay (Copper sulphate) [OECD Guideline 471].

Carcinogenicity: Not listed as carcinogenic according to IARC.

Reproductive toxicity: Data are conclusive but not sufficient to classify.

STOT (single exposure): Inhalation of dusts/aerosols may be irritating to the respiratory tract, with cough, sore throat. Ingestion may cause effects on the blood, kidneys and liver, resulting in hemolytic anemia, kidney impairment, liver impairment.

STOT (repeated exposure): Lungs may be affected by repeated or prolonged exposure to the aerosol. The substance may have effects on the liver when ingested.

Aspiration toxicity: No information available.

Acute Toxicity (Oral):

Ingestion:

LD50, Rat (male/female): 482 mg/kg bw [OECD Guideline 401].

Other:

Acute toxicity (Dermal):

- LD50, Rat (male/female): >2,000 mg/kg [OECD Guideline 402].

Reproduction

Reproductive toxicity (Oral):

- NOAEL, Rat: >1,500 ppm [OECD Guideline 416].

Carcinogen Category:

None

12. ECOLOGICAL INFORMATION

Very toxic to aquatic life with long lasting effects.

High persistence in water/soil; High persistence in air.

Low mobility in soil (KOC: 6.124).

Avoid release to the environment. Prevent entry into soils, drains and waterways. Low bioaccumulative potential (LogKOW: -2.2002).

13. DISPOSAL CONSIDERATIONS

Recycle product/packaging wherever possible or dispose of in an authorised landfill and in accordance with local/regional/national regulations.

14. TRANSPORT INFORMATION

NOT Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

15. REGULATORY INFORMATION

Poisons Schedule 6

National/Regional Inventories Australia (AICS): Listed

16. OTHER INFORMATION
N/A