



SAFETY DATA SHEET
COPPER SULPHATE SOLUTION, 20-30%
REVISION 5, DATE 29 JUL 19

1. IDENTIFICATION

Product Name	Copper Sulphate Solution, 20-30%
Other Names	No Data Available
Uses	Industrial use.
Chemical Family	No Data Available
Chemical Formula	Unspecified
Chemical Name	Copper sulfate, pentahydrate, aqueous solution
Product Description	Inorganic salt solution.

Contact Details of the Supplier of this Safety Data Sheet

Organisation	Location	Telephone
Redox Ltd	2 Swettenham Road Minto NSW 2566 Australia	+61-2-97333000
Redox Ltd	11 Mayo Road Wiri Auckland 2104 New Zealand	+64-9-2506222
Redox Inc.	3960 Paramount Boulevard Suite 107 Lakewood CA 90712 USA	+1-424-675-3200
Redox Chemicals Sdn Bhd	Level 2, No. 8, Jalan Sapir 33/7 Seksyen 33, Shah Alam Premier Industrial Park 40400 Shah Alam Sengalor, Malaysia	+60-3-5614-2111

Emergency Contact Details

For emergencies only; DO NOT contact these companies for general product advice.

Organisation	Location	Telephone
Poisons Information Centre	Westmead NSW	1800-251525 131126
Chemcall	Australia	1800-127406 +64-4-9179888
Chemcall	Malaysia	+64-4-9179888
Chemcall	New Zealand	0800-243622 +64-4-9179888
National Poisons Centre	New Zealand	0800-764766
CHEMTREC	USA & Canada	1-800-424-9300 CN723420 +1-703-527-3887

2. HAZARD IDENTIFICATION

Poisons Schedule (Aust)

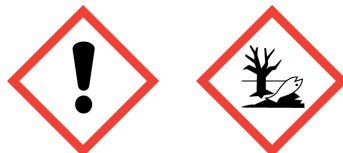
Schedule 6



Globally Harmonised System

Hazard Classification Hazardous according to the criteria of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS)

Hazard Categories Acute Toxicity (Oral) - Category 4
 Skin Corrosion/Irritation - Category 2
 Serious Eye Damage/Irritation - Category 2A
 Acute Hazard To The Aquatic Environment - Category 1
 Long-term Hazard To The Aquatic Environment - Category 2

Pictograms

Signal Word Warning

Hazard Statements

H302	Harmful if swallowed.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H410	Very toxic to aquatic life with long lasting effects.

Precautionary Statements	Prevention	P280	Wear protective gloves/eye protection/face protection.
		P273	Avoid release to the environment.
		P270	Do not eat, drink or smoke when using this product.
	Response	P302 + P352	IF ON SKIN: Wash with plenty of water/...
		P337 + P313	If eye irritation persists: Get medical advice/attention.
		P391	Collect spillage.
		P301 + P312	IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell.
		P330	Rinse mouth.
		P332 + P313	If skin irritation occurs: Get medical advice/attention.
		P362	Take off contaminated clothing.
	Disposal	P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
		P501	Dispose of contents/container in accordance with local / regional / national / international regulations.

National Transport Commission (Australia)

Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

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

Environmental Protection Authority (New Zealand)

Hazardous Substances and New Organisms Amendment Act 2015

HSNO Classifications	Health Hazards	6.1D	Substances that are acutely toxic - Harmful
		6.3A	Substances that are irritating to the skin
		6.4A	Substances that are irritating to the eye

Environmental Hazards	9.1A	Substances that are very ecotoxic in the aquatic environment
	9.3C	Substances that are harmful to terrestrial vertebrates

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

Chemical Entity	Formula	CAS Number	Proportion
Copper sulfate, pentahydrate	Unspecified	7758-99-8	20 - 30 %
Water	H2O	7732-18-5	Balance %

4. FIRST AID MEASURES

Description of necessary measures according to routes of exposure

Swallowed	IF SWALLOWED: Rinse mouth, then drink plenty of water. Do NOT induce vomiting. Call a Poison Centre or doctor/physician for advice.
Eye	IF IN EYES: Immediately flush eyes continuously 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 flushing until advised to stop by a Poisons Information Centre or a doctor, or for at least 15 minutes. Get medical advice/attention.
Skin	IF ON SKIN (or hair): Remove contaminated clothing and shoes immediately. Flush skin and hair with running water for at least 15 minutes. If skin irritation occurs, get medical advice/attention. Wash contaminated clothing and shoes before reuse.
Inhaled	IF INHALED: 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.
Advice to Doctor	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.
Medical Conditions Aggravated by Exposure	No information available.

5. FIRE FIGHTING MEASURES

General Measures	If safe to do so, move undamaged containers from fire area. Cool containers with water spray until well after fire is out.
Flammability Conditions	Non-combustible; Material does not burn.
Extinguishing Media	If material is involved in a fire, use dry chemical, Carbon dioxide (CO2), foam or water spray for extinction. Alcohol resistant foam is the preferred firefighting medium but, if it is not available, normal foam can be used.
Fire and Explosion Hazard	Decomposes on heating, emitting toxic fumes. Containers may explode when heated.
Hazardous Products of Combustion	Fire or heat may produce irritating, toxic and/or corrosive fumes, including oxides of Sulfur.
Special Fire Fighting Instructions	Contain runoff from fire control or dilution water - Runoff may pollute waterways.
Personal Protective Equipment	Wear self-contained breathing apparatus (SCBA) and chemical splash suit. SCBA and structural firefighter's uniform may provide limited protection.
Flash Point	No Data Available
Lower Explosion Limit	No Data Available
Upper Explosion Limit	No Data Available
Auto Ignition Temperature	No Data Available

Hazchem Code No Data Available

6. ACCIDENTAL RELEASE MEASURES

General Response Procedure	Ensure adequate ventilation. Do not touch or walk through spilled material. Avoid breathing vapours and contact with eyes, skin and clothing.
Clean Up Procedures	Absorb with earth, sand or other non-combustible material and transfer to a suitable, properly labelled container for disposal (see SECTION 13).
Containment	Stop leak if safe to do so – Prevent entry into waterways, drains or confined areas.
Decontamination	No information available.
Environmental Precautionary Measures	Spillages and decontamination runoff should be prevented from entering drains and watercourses.
Evacuation Criteria	Spill or leak area should be isolated immediately. Keep unauthorised personnel away. Keep upwind and to higher ground.
Personal Precautionary Measures	Use personal protective equipment as required (see SECTION 8).

7. HANDLING AND STORAGE

Handling	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 breathing mist/vapours/spray and contact with eyes, skin and clothing. Do not ingest. Use personal protective equipment as required (see SECTION 8). Avoid overheating. Avoid release to the environment - Collect spillage (see SECTION 6).
Storage	Store in a cool, dry and well-ventilated place, out of direct sunlight. Keep container tightly closed; Check regularly for leaks. Keep away from foodstuffs and incompatible materials (see SECTION 10).
Container	Keep in the original container.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General	No specific exposure standards are available for this product. COMPONENT: Copper sulfate, pentahydrate (CAS No. 7758-99-8): - Safe Work Australia Exposure Standard for Copper, dusts & mists (as Cu): TWA = 1 mg/m3. - New Zealand Workplace Exposure Standard for Copper, dusts & mists (as Cu): TWA = 1 mg/m3.
Exposure Limits	No Data Available
Biological Limits	No information available.
Engineering Measures	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.
Personal Protection Equipment	- Respiratory protection: In case of inadequate ventilation, wear respiratory protection. Recommended: Mist/particulate filter respirator (refer to AS/NZS 1715 & 1716). - Eye/face protection: Wear appropriate eye protection to avoid eye contact. Recommended: Chemical goggles. - Hand protection: Wear protective gloves. Recommended: Impervious gloves. - Skin/body protection: Wear appropriate personal protective clothing to prevent skin contact. Recommended: Overalls, safety shoes.
Special Hazards Precautions	No information available.
Work Hygienic Practices	Do not eat, drink or smoke when using this product. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storage or re-use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Liquid
Appearance	Clear liquid
Odour	Odourless
Colour	Blue
pH	No Data Available
Vapour Pressure	No Data Available
Relative Vapour Density	No Data Available
Boiling Point	No Data Available
Melting Point	No Data Available
Freezing Point	No Data Available
Solubility	Miscible with water
Specific Gravity	1.148 - 1.160
Flash Point	No Data Available
Auto Ignition Temp	No Data Available
Evaporation Rate	No Data Available
Bulk Density	No Data Available
Corrosion Rate	No Data Available
Decomposition Temperature	No Data Available
Density	No Data Available
Specific Heat	No Data Available
Molecular Weight	No Data Available
Net Propellant Weight	No Data Available
Octanol Water Coefficient	No Data Available
Particle Size	No Data Available
Partition Coefficient	No Data Available
Saturated Vapour Concentration	No Data Available
Vapour Temperature	No Data Available
Viscosity	No Data Available
Volatile Percent	No Data Available
VOC Volume	No Data Available
Additional Characteristics	No information available.
Potential for Dust Explosion	Not applicable.
Fast or Intensely Burning Characteristics	No information available.
Flame Propagation or Burning Rate of Solid Materials	No information available.
Non-Flammables That Could Contribute Unusual Hazards to a Fire	No information available.
Properties That May Initiate or Contribute to Fire Intensity	Non-combustible; Material does not burn.
Reactions That Release Gases or Vapours	Fire or heat may produce irritating, toxic and/or corrosive fumes, including oxides of Sulfur.
Release of Invisible Flammable Vapours and Gases	No information available.

10. STABILITY AND REACTIVITY

General Information	No information available.
Chemical Stability	Stable under normal conditions of use.
Conditions to Avoid	Avoid overheating.
Materials to Avoid	Incompatible/reactive with reducing agents, magnesium.
Hazardous Decomposition Products	Fire or heat may produce irritating, toxic and/or corrosive fumes, including oxides of Sulfur.
Hazardous Polymerisation	Hazardous polymerization will not occur.

11. TOXICOLOGICAL INFORMATION

General Information	<ul style="list-style-type: none">- Acute toxicity: Harmful if swallowed. May cause gastrointestinal irritation, nausea, vomiting, diarrhoea.- Skin corrosion/irritation: Causes skin irritation.- Eye damage/irritation: Causes serious eye irritation.- Respiratory/skin sensitisation: No information available.- Germ cell mutagenicity: No information available.- Carcinogenicity: No information available.- Reproductive toxicity: No information available.- STOT (single exposure): Mist/vapours/aerosols may cause respiratory tract irritation.- STOT (repeated exposure): No information available.- Aspiration toxicity: No information available.
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Acute

Ingestion	Acute toxicity (Oral): <ul style="list-style-type: none">- LD50, Rat: 300 mg/kg (Copper sulfate).
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Carcinogen Category	None
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12. ECOLOGICAL INFORMATION

Ecotoxicity	No information available.
Persistence/Degradability	No information available.
Mobility	No information available.
Environmental Fate	Very toxic to aquatic life with long lasting effects - Avoid release to the environment.
Bioaccumulation Potential	No information available.
Environmental Impact	No Data Available

13. DISPOSAL CONSIDERATIONS

General Information	Dispose of contents/container in accordance with local/regional/national regulations.
Special Precautions for Land Fill	No information available.

14. TRANSPORT INFORMATION

Land Transport (Australia)

ADG Code

Proper Shipping Name	Copper Sulphate Solution 20-30%
Class	No Data Available
Subsidiary Risk(s)	No Data Available
EPG	47 Low To Moderate Hazard Substances
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	AU01
Comments	UN#3082: Not regulated as DG when transported by road or rail in packagings that do not incorporate a receptacle exceeding 500 kg(L) or IBCs.

Land Transport (Malaysia)

ADR Code

Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Contains Copper sulphate, pentahydrate)
Class	9 Miscellaneous Dangerous Goods and Articles
Subsidiary Risk(s)	No Data Available
EPG	47 Low To Moderate Hazard Substances
UN Number	3082
Hazchem	3Z
Pack Group	III
Special Provision	No Data Available

Land Transport (New Zealand)

NZS5433

Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Contains Copper sulphate, pentahydrate)
Class	9 Miscellaneous Dangerous Goods and Articles
Subsidiary Risk(s)	No Data Available
EPG	47 Low To Moderate Hazard Substances
UN Number	3082
Hazchem	3Z
Pack Group	III
Special Provision	No Data Available

Land Transport (United States of America)

US DOT

Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Contains Copper sulphate, pentahydrate)
Class	9 Miscellaneous Dangerous Goods and Articles
Subsidiary Risk(s)	No Data Available
ERG	171 Substances (Low to Moderate Hazard)
UN Number	3082
Hazchem	3Z
Pack Group	III
Special Provision	No Data Available

Sea Transport

IMDG Code	
Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Contains Copper sulphate, pentahydrate)
Class	9 Miscellaneous Dangerous Goods and Articles
Subsidiary Risk(s)	No Data Available
UN Number	3082
Hazchem	3Z
Pack Group	III
Special Provision	No Data Available
EMS	F-A, S-F
Marine Pollutant	Yes

Air Transport

IATA DGR	
Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Contains Copper sulphate, pentahydrate)
Class	9 Miscellaneous Dangerous Goods and Articles
Subsidiary Risk(s)	No Data Available
UN Number	3082
Hazchem	3Z
Pack Group	III
Special Provision	No Data Available

National Transport Commission (Australia)

Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Dangerous Goods Classification	NOT Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)
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15. REGULATORY INFORMATION

General Information	No Data Available
Poisons Schedule (Aust)	Schedule 6

Environmental Protection Authority (New Zealand)

Hazardous Substances and New Organisms Amendment Act 2015

Approval Code	HSR002503
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National/Regional Inventories

Australia (AIC)	Listed
Canada (DSL)	Not Determined
Canada (NDSL)	Not Determined

China (IECSC)	Not Determined
Europe (EINECS)	Not Determined
Europe (REACH)	Not Determined
Japan (ENCS/METI)	Not Determined
Korea (KECI)	Not Determined
Malaysia (EHS Register)	Not Determined
New Zealand (NZIoC)	Listed
Philippines (PICCS)	Not Determined
Switzerland (Giftliste 1)	Not Determined
Switzerland (Inventory of Notified Substances)	Not Determined
Taiwan (NCSR)	Not Determined
USA (TSCA)	Not Determined

16. OTHER INFORMATION

Related Product Codes	COPLIQ1400, COPLIQ1500, COPLIQ2000, COPLIQ2400, COPLIQ2500, COPLIQ2501, COPLIQ2600, COPLIQ3000, COPLIQ3001, COPLIQ4300, COPLIQ4400, COPLIQ6000, COPLIQ6200, COPLIQ6800, COPLIQ6802, COPLIQ6806, COPLIQ6809
Revision	5
Revision Date	29 Jul 2019
Key/Legend	<p>< Less Than > Greater Than</p> <p>AICS Australian Inventory of Chemical Substances atm Atmosphere CAS Chemical Abstracts Service (Registry Number) cm² Square Centimetres CO₂ Carbon Dioxide COD Chemical Oxygen Demand deg C (°C) Degrees Celcius EPA (New Zealand) Environmental Protection Authority of New Zealand deg F (°F) Degrees Farenheit g Grams g/cm³ Grams per Cubic Centimetre g/l Grams per Litre HSNO Hazardous Substance and New Organism IDLH Immediately Dangerous to Life and Health immiscible Liquids are insoluable in each other. inHg Inch of Mercury inH₂O Inch of Water K Kelvin kg Kilogram kg/m³ Kilograms per Cubic Metre lb Pound LC50 LC stands for lethal concentration. LC50 is the concentration of a material in air which causes the death of 50% (one half) of a group of test animals. The material is inhaled over a set period of time, usually 1 or 4 hours. LD50 LD stands for Lethal Dose. LD50 is the amount of a material, given all at once, which causes the death of 50% (one half) of a group of test animals. ltr or L Litre</p>

m³ Cubic Metre

mbar Millibar

mg Milligram

mg/24H Milligrams per 24 Hours

mg/kg Milligrams per Kilogram

mg/m³ Milligrams per Cubic Metre

Misc or **Miscible** Liquids form one homogeneous liquid phase regardless of the amount of either component present.

mm Millimetre

mmH₂O Millimetres of Water

mPa.s Millipascals per Second

N/A Not Applicable

NIOSH National Institute for Occupational Safety and Health

NOHSC National Occupational Health and Safety Commission

OECD Organisation for Economic Co-operation and Development

Oz Ounce

PEL Permissible Exposure Limit

Pa Pascal

ppb Parts per Billion

ppm Parts per Million

ppm/2h Parts per Million per 2 Hours

ppm/6h Parts per Million per 6 Hours

psi Pounds per Square Inch

R Rankine

RCP Reciprocal Calculation Procedure

STEL Short Term Exposure Limit

TLV Threshold Limit Value

tne Tonne

TWA Time Weighted Average

ug/24H Micrograms per 24 Hours

UN United Nations

wt Weight