Safety Data Sheet COPPER (II) ACETATE

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SECTION 1: Identification

GHS Product identifier

Product name	COPPER (II) ACETATE

Other means of identification

Copper (II) Acetate Monohydrate AR	CA104-500G
Copper (II) Acetate Monohydrate LR	CL104-100G
Copper (II) Acetate Monohydrate LR	CL104-500G

Recommended use of the chemical and restrictions on use

Pesticide, catalyst, fungicide, pigments, manufacture of Paris green 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

Classified as dangerous goods according to the Australian Dangerous Goods Code (ADG).

Classified as Hazardous according to the Globally Harmonised System of classification and labelling of Chemicals (GHS) including Work, Health and Safety regulations, Australia.

Classification of the substance or mixture

GHS classification in accordance with: UN GHS revision 7

- Acute toxicity, oral, Cat. 4
- 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
- Skin corrosion/irritation, Cat. 1B

GHS label elements, including precautionary statements

Pictograms

Signal word	**Danger**

Hazard statement(s)

H302	Harmful if swallowed
H314	Causes severe skin burns and eye damage
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects

Precautionary statement(s)

P260	Do not breathe dust/fume/gas/mist/vapors/spray.
P264	Wash hands thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P301+P312	IF SWALLOWED: Call a POISON CENTER/doctor/physcian if you feel unwell,
P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
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/physcian
P321	Specific treatment (see … on this label).
P330	Rinse mouth.
P363	Wash contaminated clothing before reuse.
P391	Collect spillage.
P405	Store locked up.
P501	Dispose of contents/container to an approved waste disposal facility

SECTION 3: Composition/information on ingredients

Mixtures

Molecular weight: 199.64

Components

Component	CAS no.	Concentration
Copper (II) acetate, monohydrate	**6046-93-1**	**<= 100 % (weight)**
CLASSIFICATIONS: Acute toxicity, oral, Cat. 4; Hazardous to the aquatic environment, long-term (chronic), Cat. 1; Hazardous to the aquatic environment, short-term (acute), Cat. 1; Serious eye damage/eye irritation, Cat. 1; Skin corrosion/irritation, Cat. 1B. HAZARDS: H302 - Harmful if swallowed; H314 - Causes severe skin burns and eye damage; H318 - Causes serious eye damage; H400 - Very toxic to aquatic life; H410 - Very toxic to aquatic life with long lasting effects.		

SECTION 4: First-aid measures

Description of necessary first-aid measures

General advice	First Aid Facilities: Maintain eyewash fountain 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. Consult a physician.
In case of skin contact	Wash affected areas with copious quantities of water immediately. Remove contaminated clothing and wash before re-use. Seek medical advice if effects persist
In case of eye contact	Immediately irrigate with copious quantity of water for at least 15 minutes. Eyelids to be held open. In all cases of eye contamination it is a sensible precaution to seek medical advice.
If swallowed	Rinse mouth thoroughly with water immediately. Give plenty of water to drink. Do not induce vomiting. Seek immediate medical assistance.

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 extinguishers.
LARGE FIRE: Use water spray, fog or foam.

Specific hazards arising from the chemical
Irritating, toxic and corrosive fumes and vapours, including oxides of carbon, acetic acid fumes (poisonous gas), copper fumes and some metallic oxides. Contact with incompatibles such as acids or acid fumes may release highly toxic fumes.

Runoff may pollute waterways. Fire or heat may produce irritating, poisonous and/or corrosive gases/fumes. Containers may explode when heated.

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
Avoid inhalation, contact with skin, eyes and clothing. Evacuate the area of all non-essential personnel.
Use personal protective equipment listed in Section 8.

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

Methods and materials for containment and cleaning up
Sweep up (avoid generating dust) and remove to a suitable, clearly labelled container for disposal in accordance with local regulations.

SECTION 7: Handling and storage

Precautions for safe handling

Avoid prolonged or repeated contact with skin, eyes and clothing . Avoid ingestion and inhalation of material. Keep container tightly closed when not in use. Use with adequate ventilation. In case of
insufficient ventilation, wear suitable respiratory equipment. Wear suitable protective clothing. Keep away from incompatibles.

Conditions for safe storage, including any incompatibilities

Store in a cool,dry place. Keep containers securely sealed and protected against physical damage. Isolate from incompatible substances. Moisture sensitive.
Corrosiveness: More resistant to atmospheric corrosion than iron, forming a green layer of hydrated basic carbonate. Readily attacked by alkalis. Attached by acetic acid and other organic acids.

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)

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, polyvinyle chloride gloves. Fair: NR latex.

Body protection

Safety boots in industrial situations is advisory, foot protection should comply with AS 2210, Occupational protective footwear - guide to selection, care and use.
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	Solid
Appearance	Greenish-blue fine powder.
Color	No data available.
Odor	Odourless; slightly acetic acid odour.
Odor threshold	No data available.
Melting point/freezing point	115 °C

Boiling point or initial boiling point and boiling range	No data available.
Flammability	No data available.
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	240 °C
Oxidizing properties	No data available.
pH	5.2 - 5.5 (20 g/L, H2O, 20 °C)
Kinematic viscosity	No data available.
Solubility	Solubility in Water: Soluble (72 g/L @ 20 °C) Solubility in Organic Solvents: Soluble in alcohol. Slightly soluble in glycerol and ether.
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	Specific Gravity: 1.882
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

Reactivity
Stable under normal conditions of storage and handling.

Chemical stability
Stable under normal use conditons.

Possibility of hazardous reactions
Hazardous Polymerization: Will not occur.

Conditions to avoid
Exposure to moisture.

Avoid storing in direct sunlight and avoid extremes of temperature.

Incompatible materials
Strong acids, oxidising agents, sodium hypobromite, acetylene, hydrazine and nitromethane.

Hazardous decomposition products
Irritating, toxic and corrosive fumes and vapours, including oxides of carbon, acetic acid fumes (poisonous gas), copper fumes and some metallic oxides. Contact with incompatibles such as acids or acid fumes may release highly toxic fumes.

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity
Acute Toxicity - Oral: LD50(rat): 710 mg/kg.

Ingestion: Harmful if swallowed. Ingestion of sufficient concentrations may cause irritation and possible burning and pain of mucous membranes in the mouth, pharynx, oesophagus, and gastrointestinal tract. Hemorrhagic gastritis, salivation, headache, nausea, abdominal/gastric pain, dizziness, tiredness, metallic taste, convulsions, shock, bloody diarrhoea and vomiting (vomitus is characteristically greenish-blue) may occur. If vomiting does not occur immediately systemic copper poisoning may occur, symptoms include of capillary damage, headache, cold swear, weak pulse, stomach and intestine ulceration, internal haemorrhage, nephritis, jaundice, CNS damage, kidney and liver damage, shock, coma and possibly death. Poisoning could occur due to this material being soluble in hydrochloric acid, which the stomach contains. May cause changes in structure and or function of the salivary glands in the gastrointestinal system causing nausea and vomiting.

Inhalation: Inhalation of copper dust or fumes causes irritation to mucous membranes and upper respiratory tract (nose, throat, lungs). Early symptoms of copper poisoning include coughing, sore throat, wheezing, high temperatures, metallic taste, shortness of breath, nausea, vomiting, epigastric burning and diarrhoea. May result in harmful corrosive effects including lesions, ulcerations and perforation of the nasal septum and respiratory tract, delayed pulmonary edema, pneumonitis and emphysema. When heated this compound may give off copper fume, which may cause 'Metal fume fever' with symptoms similar to the common cold, including chills and stiffness of the head as well as high temperatures, nausea, coughing and general weakness. Copper compounds have shown by inhalation to produce haemolysis of the red blood cells, hepatic necrosis, gastro intestinal bleeding, oligiura, ozotemia, hemoglobinuria, haematuria, tachycardia convulsions, coma and even death.

Skin corrosion/irritation
May cause irritation with redness and pain. May cause discolouration of the skin; greenish-black skin. May be harmful if absorbed through the skin. Causes skin irritation, possibly severe, resulting in redness, itching and pain. May cause skin burns. May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material. May cause skin burns.

Serious eye damage/irritation
Corrosive. Risk of serious damage to eyes causing irritation, redness, pain, blurred vision, discoloration and possible eye damage (chemical conjunctivitis, corneal clouding, ulceration, permanent corneal opacification) leading to irreversible eye injury.

Respiratory or skin sensitization
No data available.

Germ cell mutagenicity
No data available.

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: Prolonged or repeated skin exposure may cause defatting leading to dermatitis. Prolonged or repeated exposure to dusts of copper salts may cause discolouration 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. Effects may be delayed. Individuals with Wilson's disease are unable to metabolize copper. Thus, copper accumulates in various tissues and may result in liver, kidney and brain damage. Chronic copper poisoning is typified by hepatic cirrhosis, brain damage and demyelination, kidney defects, and copper deposition in the cornea as exemplified by humans with Wilson's disease. It has also been reported that copper poisoning has lead to hemolytic anemia and accelerates arteriosclerosis. Symptoms of systemic copper poisoning may include: capillary damage, headache, cold sweat, weak pulse, and kidney and liver damage, central nervous system excitation followed by depression, jaundice, convulsions, paralysis, and coma. Death may occur from shock or renal failure. Depending on the intensity and duration of exposure, effects may vary from mild irritation to severe destruction of tissue.
The estimated lethal dose in an untreated adult is 10 to 20 g copper.

Copper (II) acetate, monohydrate: mammal (species unspecified) LD50 intraperitoneal 5mg/kg (5mg/kg) BEHAVIORAL: SOMNOLENCE (GENERAL DEPRESSED ACTIVITY)

GASTROINTESTINAL: CHANGES IN STRUCTURE OR FUNCTION OF SALIVARY GLANDS

GASTROINTESTINAL: NAUSEA OR VOMITING Journal of Animal Science. Vol. 55, Pg. 337, 1982.
Link to PubMed
mouse LDLo oral 1600mg/kg (1600mg/kg) Archives of Environmental Contamination and Toxicology. Vol. 14, Pg. 111, 1985.
Link to PubMed
rat LD50 oral 710mg/kg (710mg/kg) American Industrial Hygiene Association Journal. Vol. 30, Pg. 470, 1969.
Link to PubMed

SECTION 12: Ecological information

Toxicity
Highly toxic for aquatic organisms. May cause long-term adverse effects in the aquatic environment.
Acute Toxicity - Fish: LC50 (Pimephales promelas): 0.1 mg/l/96h.

Persistence and degradability
Methods for the determination of biodegradability are not applicable to inorganic substances.

Bioaccumulative potential
This substance is expected to significantly bioaccumulate.

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: 3077
Class: 9
Packing Group: III
Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (COPPER (II) ACETATE)

Hazchem emergency action code (EAC)
2Z

IMDG
UN Number: 3077
Class: 9
Packing Group: III
Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (COPPER (II) ACETATE)

IATA
UN Number: 3077
Class: 9
Packing Group: III
Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (COPPER (II) ACETATE)

SECTION 15: Regulatory information

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

Australia SUSMP
Poison Schedule: S6

SECTION 16: Other information

Further information/disclaimer
ChemSupply Australia 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 ChemSupply Australia 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 ChemSupply Australia 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.

Preparation information
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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 fot 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 Airbourne 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)