SAFETY DATA SHEET (SDS)

Copper (II) chloride, 0.1M

Issue date: 24-11-2025

Section 1: Product Identifier and Chemical Identity

Product Identifier	
Product Name:	Copper (II) chloride, 0.1M
Product Codes:	MC91.06, MC92.06
Other means of identification:	
Chemical formula, alternative names:	$CuCl_{2(aq)}$ Cupric chloride
Recommended use of the chemical and restrictions on use	
Recommended Use:	For laboratory use only.
Suppliers name, address and phone number	
Supplier's Name:	Southern Biological
Supplier's ABN:	94 630 703 810
Supplier's Address:	168 Fulham Road Alphington Victoria 3078 Australia
Supplier's Phone No.:	1300 138 561
Emergency Phone number (BH)	1300 138 561

Section 2: Hazard Identification

Classification of the Hazardous Chemical	
Hazard Category	Acute toxicity (dermal, oral) – category 4 Serious eye irritation – category 2 Corrosive to metals – category 1 Hazardous to the aquatic environment (acute) – category 1 Hazardous to the aquatic environment (chronic) – category 2
Label elements	
Hazard Pictograms:	 exclamation mark  corrosive  environment
Signal Word:	Warning
Hazard Statements:	Harmful if swallowed Harmful in contact with skin Causes serious eye irritation May be corrosive to metals Very toxic to aquatic life Toxic to aquatic life with long lasting effects
Precautionary Statements:	Use personal protective equipment. Ensure adequate ventilation. Avoid contact with skin, eyes and clothing. Do not ingest.

Other Hazards	
Results of PBT and vPvB assessment:	PBT: Not applicable VPvB: Not applicable

Section 3: Composition/information on ingredients

Ingredients		
Name	CAS	Proportion
Water	7732-18-5	98.3%
Copper (II) chloride, dihydrate	10125-13-0	1.7%

Section 4: First Aid Measures

Necessary first aid measures	
After inhalation:	Remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms; call a doctor.
After skin contact:	Wash with water and soap and rinse thoroughly. If skin irritation occurs: Get medical advice/ attention.
After eye contact:	Wash with copious amounts of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
After swallowing:	DO NOT INDUCE VOMITING. Wash out mouth with water. Obtain emergency medical attention. Call a POISON CENTRE or doctor/physician if you feel unwell.
Symptoms caused by exposure	
Acute:	Toxic, irritant and gastrointestinal disturbances. Hypotension, fever, tachycardia, convulsions, anaemia,.
Medical attention and special treatment	
Indications of any immediate medical attention and special treatment needed	No further relevant information available.

Section 5: Firefighting measures

Extinguishing media	
Suitable extinguishing equipment:	Use extinguishing measures that are appropriate to local circumstances and the surrounding fire
Specific hazards arising from the chemical:	Irritant, toxic and corrosive fumes and vapours, including hydrogen chloride gas, copper fumes, chlorinated compounds, oxides of copper and chloride. Contact with acids may release highly toxic hydrogen chloride fumes.
Advice for firefighters	
Special protective equipment and precautions:	Do not enter the fire area without proper protective equipment including respiratory equipment.

Section 6: Accidental release measures

General Information	
Personal precautions, protective equipment and emergency procedures:	Evacuate area of all non-essential personnel. Follow personal protective equipment recommendations found in Section 8 of this SDS. Prevent the spread of any spill to minimise harm to human health and the environment if safe to do so. Wear complete and proper personal protective equipment following the recommendation of Section 8 at a minimum.
Environmental precautions:	Prevent entry to sewers and public waters. Avoid release to the environment. Notify authorities if spill to sewers or public waters.
Methods and material for containment and cleaning up:	Dispose of contaminating material as waste according to item 13. Ensure adequate ventilation.
Reference to other sections:	See Section 7 for information on safe handling. See Section 8 for information on protective equipment. See Section 13 for disposal information.

Section 7: Handling and Storage

General Information	
Precautions for safe handling:	Ensure good ventilation/exhaustion at the workplace. Wash hands after use. Do not eat, drink or smoke when using this product. Wash contaminated clothing and protective equipment prior to entering eating area. Avoid ingestion and inhalation of mists. Avoid prolonged or repeated exposure
Information about fire – and explosion protection:	No special measures required.

Conditions for safe storage, including any incompatibilities.	
Storage:	Store in cool dry area out of direct sunlight and incompatible materials. Keep containers closed when not in use. Store in suitably labelled containers.
Requirements to be met by storerooms and receptacles:	No special requirements.
Information about storage in one common storage facility:	Not required.
Further information about storage conditions:	Keep container tightly sealed. Keep out of direct sunlight.

Section 8: Exposure controls/personal protection.

General information	
Additional information about design of technical facilities:	No further data: see section 7

Control parameters:

Ingredients with limit values that require monitoring at the workplace:

Name	STEL	TWA	
	mg/m³ ppm	mg/m³ ppm	Footnote
Copper, dusts and mists (as Cu)		1	
Copper (fume)		0.2	

Additional information	These Workplace Exposure Standards are guides to be used in the control of occupational health hazards. All atmospheric contamination should be kept to as low a level as is workable. These workplace exposure standards should not be used as fine dividing lines between safe and dangerous concentrations of chemicals. They are not a measure of relative toxicity.

	The STEL is an exposure value that should not be exceeded for more than 15 minutes and should not be repeated for more than 4 times per day. There should be at least 60 minutes between successive exposures at the STEL. The exposure value at the TWA is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5-day working week.
Exposure Controls:	
General protective and hygienic measures:	Use only in systems, processes and procedures in which effective ventilation has been provided. Keep away from foodstuffs, beverages and feed. Immediately remove all soiled and contaminated clothing Wash hands before breaks and at the end of work. Avoid contact with eyes.
Respiratory protection:	In case of significant exposure use respiratory filter device. Not normally required.
Clothing / Foot-wear and equipment	No special requirements.
Protection of hands:	PVC or rubber gloves
Eye protection:	Tightly sealed goggles
Skin protection:	Laboratory Coat

Section 9: Physical and chemical properties

Appearance:	
Form:	Liquid
Colour:	Blue/green
Odour:	Not determined
Odour Threshold:	Not determined
pH value:	Not determined
Change in Condition:	
Melting point/Melting range:	Not determined
Boiling point/Boiling range:	Not determined
Flash point:	Not determined
Flammability (solid / gaseous)	Not determined
Ignition Temperature	
Decomposition temperature:	Not determined
Self-igniting:	Not determined
Danger of explosion:	Not determined
Explosion limits	
Lower:	Not determined
Upper:	Not determined
Vapour pressure:	Not determined
Density:	Not determined
General Info	
Relative density:	Not determined

Vapour density:	Not determined
Evaporation rate:	Not determined
Solubility in/ Miscibility with water:	Miscible
Partition coefficient (n-octanol/water):	Not determined
Viscosity:	Not determined
Other information:	Not determined

Section 10: Stability and reactivity

Reactivity	
General	Not generally reactive under normal conditions
Chemical Stability	
Thermal decomposition / conditions to be avoided:	No decomposition if used according to specifications.
Possibility of hazardous reactions:	May produce a strong explosion when mixed with sodium or potassium. Reacts violently with powders of base metals, magnesium and hydroxylamine. Reactive with oxidising agents. Contact with acetylene may cause formation of copper acetylides that are shock-sensitive. Evolves highly toxic hydrogen chloride fumes on contact with acids or acid fumes. Solutions of sodium hypobromite are decomposed by powerful catalytic action of cupric ions, even as impurities. Copper (II) salts are readily reduced and therefore should be considered reactive with reducing agents, strong acids, alkali metals and finely powdered metals.
Conditions to avoid:	Incompatible products, water-reactive materials, excess heat. Avoid dust formation.
Incompatible materials:	Water-reactive materials, acids, sodium metal, potassium metal, magnesium, hydrazine, nitromethane, aluminium alloys, acetylene, hydroxylamine, sodium hypobromite, finely-powdered metals, strong oxidising agents, reducing agents
Hazardous decomposition products:	Hydrogen chloride gas, copper compounds.

Section 11: Toxicological information

Information on toxicological effects	
Ingestion:	Harmful if swallowed. Ingestion of sufficient concentrations may cause irritation and possible burning pain of mucous membranes in the mouth, pharynx, oesophagus, and gastrointestinal tract, with metallic taste, salivation, headache, nausea, haemorrhagic gastritis, abdominal pain, bloody diarrhoea and vomiting. The vomitus is characteristically greenish-blue. If vomiting does not occur immediately systemic copper poisoning may occur. Symptoms may include capillary damage, headache, cold sweat, weak pulse, kidney and liver damage (anuria, oliguria, haematuria, acute kidney tubular necrosis, jaundice, hepatomegaly), central nervous excitation followed by depression, jaundice, somnolence, convulsions, blood effects (haemolysis, anaemia), paralysis and coma. Death may occur from shock or renal failure. Rarely methaemoglobinaemia has been reported.
Skin corrosion/irritation	Causes skin irritation, possibly severe, resulting in redness, itching, burning pain, dermatitis, and possible systemic toxicity. May cause skin burns. May be harmful if absorbed through the skin. May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material.
Serious eye damage/irritation:	Causes severe damage with symptoms of redness, inflammation, stinging, pain, blurred vision, discolouration, and possible eye damage (permanent corneal opacification, chemical conjunctivitis, ulceration) leading to irreversible eye injury.

Inhalation:	May be harmful if inhaled. Inhalation of mists or vapours causes irritation of mucous membranes of the respiratory tract (nose, throat, lungs), symptoms may include sore throat, coughing, wheezing, dyspnoea, and shortness of breath. May result in harmful corrosive effects including lesions, ulceration and perforation of the nasal septum and respiratory tract, delayed pulmonary oedema, pneumonitis and emphysema. When heated this compound may give off copper fume, which can cause fume metal fever with symptoms similar to the common cold, including chills and stiffness of the head.
Germ cell mutagenicity:	No information available
Carcinogenicity:	No information available
Reproductive toxicity:	No information available
Specific target organ toxicity (STOT) – single exposure:	No information available
Specific target organ toxicity (STOT) – repeated exposure:	No information available
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 led to haemolytic anaemia 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.

Toxicology data for the components:			
Component	LD50 oral	LD50 dermal	LC50 inhalation
Copper (II) chloride	340 mg/kg (rat) - (anhydrous substance)	No information	No information

Section 12. Ecological information

Ecotoxicity	
This product contains substances which are hazardous for the environment. Very toxic to aquatic organisms. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.	
Freshwater fish:	LC50: 0.12 – 0.13 mg/L/96h (carp) LC50: 0.9 mg/L/96h (bluegill sunfish) LC50: 0.08 mg/L/96h (rainbow trout)
Aquatic invertebrates:	EC50: 0.04 mg/L/48h (water flea)
Freshwater algae:	EC50: 0.12 – 0.2 mg/L/96h
Persistence and degradability:	No further relevant information available.
Behaviour in environmental systems	
Bio-accumulative potential:	No further relevant information available.
Mobility in soil:	Will likely be mobile in the environment due to its water solubility
Additional ecological information	
Results of PBT and vPvB assessment	PBT: Not applicable vPvB: Not applicable
Other adverse effects:	No further relevant information available.

Section 13. Disposal Considerations

Waste treatment methods	
Recommendation	Prevent this material from entering waterways, drains and sewers. Comply with official regulations.
Uncleaned packaging:	
Recommendation:	Disposal must be made according to official regulations.
Recommended cleansing agents:	Water, if necessary, together with cleansing agents.

Section 14. Transport information

General	UN number: 3082 Proper shipping name or technical name: Environmentally hazardous substance, liquid, NOS Transport hazard class: 9 Packing group number: III Limited quantities: 5L

Section 15. Regulatory Information

Safety health and environmental regulations/legislation specific for the substance or mixture	
Australian Inventory of Chemical Substances:	Substances are listed.
Chemical safety assessment:	A Chemical Safety Assessment has not been carried out.

Section 16. Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- End of SDS -