



Infosafe No™	1CH29	Issue Date : June 2020	RE-ISSUED by AMBERSCI
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Product Name : **COPPER (II) NITRATE Hydrate**

Classified as hazardous

**1. Identification**

<b>GHS Product Identifier</b>	COPPER (II) NITRATE Hydrate	
<b>Company Name</b>	CHEM-SUPPLY PTY LTD (ABN 19 008 264 211)	
<b>Address</b>	38 - 50 Bedford Street GILLMAN SA 5013 Australia	
<b>Telephone/Fax Number</b>	Tel: (08) 8440-2000	
<b>Emergency phone number</b>	CHEMCALL 1800 127 406 (Australia) / +64-4-917-9888 (International)	
<b>Recommended use of the chemical and restrictions on use</b>	Light-sensitive papers; analytical reagent; mordant in textile dyeing; nitrating agent; insecticide for vines; colouring copper black; electroplating; production of burnished effect on iron; paints; varnishes, enamels; pharmaceutical preparations; catalyst and laboratory reagent.	
<b>Other Names</b>	<u>Name</u>	<u>Product Code</u>
	COPPER (II) NITRATE 2.5-Hydrate AR	CA059
	COPPER (II) NITRATE Trihydrate LR	CL059
	Cupric nitrate, Gerhardite	

**Other Information**

Chem-Supply 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 Chem-Supply 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 Chem-Supply 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.

**2. Hazard Identification**

<b>GHS classification of the substance/mixture</b>	Oxidizing Solids: Category 2 Acute Toxicity - Oral: Category 4 Skin Corrosion/Irritation: Category 2 Eye Damage/Irritation: Category 1 Hazardous to the Aquatic Environment - Acute Hazard: Category 1
<b>Signal Word (s)</b>	DANGER
<b>Hazard Statement (s)</b>	H272 May intensify fire; oxidiser. H302 Harmful if swallowed. H315 Causes skin irritation. H318 Causes serious eye damage. H400 Very toxic to aquatic life.
<b>Pictogram (s)</b>	Flame over circle, Exclamation mark, Corrosion, Environment

**Precautionary statement – Prevention**

P210 Keep away from heat/sparks/open flames/hot surfaces. – No smoking.  
P220 Keep/Store away from clothing/.../combustible materials.  
P221 Take any precaution to avoid mixing with combustibles ...  
P264 Wash ... thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.  
P273 Avoid release to the environment.

**Precautionary statement – Response**

P301+P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.  
P330 Rinse mouth.  
P302+P352 IF ON SKIN: Wash with plenty of soap and water.  
P332+P313 If skin irritation occurs: Get medical advice/attention.  
P362 Take off contaminated clothing and wash before reuse.



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**Precautionary statement – Storage**  
**Precautionary statement – 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.  
 P310 Immediately call a POISON CENTER or doctor/physician.  
 P370+P378 In case of fire: Use FLOODING QUANTITIES OF WATER for extinction.  
 P391 Collect spillage.  
 P405 Store locked up.  
 P501 Dispose of contents/container to an approved waste disposal plant.

**3. Composition/information on ingredients**

Chemical	Solid				
Characterization					
Ingredients	<u>Name</u>	<u>CAS</u>	<u>Proportion</u>	<u>Hazard Symbol</u>	<u>Risk Phrase</u>
	Copper Nitrate Trihydrate	10031-43-3	100 %		
	Copper nitrate 2.5-hydrate	19004-19-4	100 %		

**4. First-aid measures**

<b>Inhalation</b>	If inhaled, remove from contaminated area to fresh air immediately. Apply artificial respiration if not breathing. If breathing is difficult, give oxygen. Get medical aid if cough or other symptoms appear.
<b>Ingestion</b>	Rinse mouth thoroughly with water immediately. Do not induce vomiting. Seek medical attention.
<b>Skin</b>	Immediately remove contaminated clothing and wash affected area with water for at least 15 minutes. Ensure contaminated clothing is washed before re-use. Seek medical advice /attention depending on the severity.
<b>Eye contact</b>	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.
<b>First Aid Facilities</b>	Maintain eyewash fountain and safety shower in work area.
<b>Advice to Doctor</b>	Treat symptomatically based on judgement of doctor and individual reactions of the patient.
<b>Other Information</b>	For advice, contact a Poisons Information Centre (Phone eg Australia 13 1126; New Zealand 0800 764 766) or a doctor at once.

**5. Fire-fighting measures**

<b>Hazards from Combustion</b>	Nitrous gases, copper oxides.
<b>Products</b>	
<b>Specific Methods</b>	Small fire: USE FLOODING QUANTITIES OF WATER. Do not use dry chemicals, CO2 or foam. If safe to do so, move undamaged containers from fire area. Do not move cargo if cargo has been exposed to heat. Large fire: Flood fire area with water from a protected position. Cool containers with flooding quantities of water until well after fire is out - If impossible, withdraw from area and let fire burn. Avoid getting water inside containers: a violent reaction may occur. Dam fire control water for later disposal.
<b>Specific hazards arising from the chemical</b>	Will accelerate burning when involved in a fire. May explode from heating, shock, friction or contamination. Can react explosively with hydrocarbons (fuels). May ignite combustibles (wood, paper, clothing, etc). Fire may produce irritating, poisonous, and/or corrosive gases. Containers may explode when heated. Runoff may create fire or explosion hazard.
<b>Hazchem Code</b>	1[Z]
<b>Decomposition Temp.</b>	114 °C
<b>Precautions in connection with Fire</b>	Wear SCBA and chemical splash suit. Structural firefighter's uniform will provide limited protection.

**6. Accidental release measures**

<b>Personal Precautions</b>	Avoid substance contact. Avoid generation of dusts: do not inhale dusts. Ensure supply of fresh air in enclosed rooms.
<b>Personal Protection</b>	Wear protective clothing specified for normal operations (see Section 8)
<b>Clean-up Methods - Small Spillages</b>	Absorb with dry earth, sand or other non-combustible material. Use clean nonsparking tools to collect and seal in properly labelled drums for disposal in an area approved by local authority bylaws. Wash area down with excess water to remove residual material.



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**Clean-up Methods -** Seek expert advice on handling and disposal.**Large Spillages****Environmental**

Prevent contamination of soil and water.

**Precautions****7. Handling and storage****Precautions for Safe Handling** Wash hands and face thoroughly after working with material. Contaminated clothing should be removed and washed before reuse.

Avoid generating and inhaling dust.

**Conditions for safe storage, including any incompatibilities**

Store in a cool, dry place. Store away from combustible materials. Keep containers closed at all times. Keep away from heat and other sources of ignition.

**Storage Regulations**

Refer Australian Standard AS 4326-1995 'The storage and handling of oxidizing agents'.

**8. Exposure controls/personal protection****Other Exposure 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.

A time weighted average (TWA) has been established for Copper, dusts & mists (as Cu) (Safe Work Australia) of 1 mg/m<sup>3</sup>. 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.**Appropriate engineering controls  
Respiratory Protection**

Maintain the concentrations values below the TWA. This may be achieved by process modification, use of local exhaust ventilation, capturing substances at the source, or other methods.

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.

**Eye 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.

**Hand Protection**

Wear gloves of impervious material conforming to AS/NZS 2161: Occupational protective gloves - Selection, use and maintenance. Final choice of appropriate glove type will vary according to individual circumstances. This can include methods of handling, and engineering controls as determined by appropriate risk assessments. Avoid skin contact when removing gloves from hands, do not touch the gloves outer surface. Dispose of gloves as hazardous waste.

**Personal Protective Equipment**

Personal protective equipment should not solely be relied upon to control risk and should only be used when all other reasonably practicable control measures do not eliminate or sufficiently minimise risk. Guidance in selecting personal protective equipment can be obtained from Australian, Australian/New Zealand or other approved standards.

**Footwear**

Safety boots in industrial situations is advisory, foot protection should comply with AS 2210, Occupational protective footwear - Guide to selection, care and use.

**Body Protection**

Flame retardant antistatic protective clothing. 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.

**Hygiene Measures**

Always wash hands before smoking, eating or using the toilet. Wash contaminated clothing and other protective equipment before storing or re-using.

**9. Physical and chemical properties****Form**

Solid

**Appearance**

Blue deliquescent crystals.

**Odour**

Odourless

**Decomposition Temperature**

114 °C

**Melting Point**

~114 °C

**Solubility in Water**

Very soluble.



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**Solubility in Organic Solvents** Soluble in alcohol.**Solvents****Specific Gravity** 2.05**pH** ~3-4 (50 g/l, H<sub>2</sub>O, 20 °C)**Molecular Weight** Copper nitrate trihydrate Cu(NO<sub>3</sub>)<sub>2</sub>·3H<sub>2</sub>O - 241.60  
Copper nitrate 2.5-hydrate Cu(NO<sub>3</sub>)<sub>2</sub>·2.5H<sub>2</sub>O - 231.59**10. Stability and reactivity****Chemical Stability** Stable under normal use conditons.**Conditions to Avoid** Exposure to moisture.**Incompatible Materials** Acetic acid anhydride (exothermic reaction); ammonia/amides, cyanide complexes, metals in powder form, organic substances, oxidizable substances (risk of explosion), potassium ferrocyanide, (water + tin) and combustible material.**Hazardous Decomposition Products** Nitrous gases, copper oxides.**Possibility of hazardous reactions** Can explode when finely mixed with potassium ferrocyanide and with (water + tin); produces sparking.**Hazardous Polymerization** Will not occur.**11. Toxicological Information****Acute Toxicity - Oral** LD50 (rat): 940 mg/kg (Smyth).**Ingestion** Harmful if swallowed. Symptoms may include nausea, vomiting, gastric pain, dizziness, convulsions, shock, coma and possibly death.**Inhalation** Inhalation of material causes irritation symptoms in the respiratory tract, coughing, and dyspnoea.**Skin** Causes irritation.**Eye** Causes burns and serious eye irritation. Risk of corneal clouding.**Respiratory sensitisation** Not classified based on available information.**Skin Sensitisation** Not classified based on available information.**Germ cell mutagenicity** Not classified based on available information.**Carcinogenicity** Not classified based on available information.**Reproductive Toxicity** Not classified based on available information.**STOT-single exposure** Not classified based on available information.**STOT-repeated exposure** Not classified based on available information.**Health Hazard** The following applies to nitrites/nitrates in general: methaemoglobinaemia after uptake of large quantities.**Chronic Effects** May give rise to damage to the kidneys, enlargement of the liver and jaundice, together with various symptoms attributed to damage of the nervous system.**Mutagenicity** Not classified based on available information.**12. Ecological information****Ecotoxicity** Highly toxic for aquatic organisms. May cause long-term adverse effects in the aquatic environment. Hazard for drinking water supplies.**Persistence and degradability** Methods for the determination of biodegradability are not applicable to inorganic substances.**Other Adverse Effects** The following applies to nitrates in general: may contribute to the eutrophication of water supplies.**Other Precautions** Do not allow to enter waters, waste water, or soil!**Environmental Protection** Hazardous to the Aquatic Environment - Acute Hazard: Category 1



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**13. Disposal considerations**

<b>Disposal Considerations</b>	Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and disposed of according to relevant local, state and federal government regulations.
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**14. Transport information**

<b>Transport Information</b>	Dangerous Goods of Class 5.1 Oxidising Agents are incompatible in a placard load with any of the following: - Class 1, Class 2.1, Class 2.3, Class 3, Class 4, Class 5.2, Class 7, Class 8, Fire risk substances and combustible liquids. Dangerous goods of Class 5.1 (Oxidizing Agent) are incompatible in a placard load with any of the following: Class 1, Class 2.1, Class 2.3, Class 3, Class 4, Class 5.2, Class 7, Class 8, Fire risk substances and Combustible liquids.
<b>U.N. Number</b>	1477
<b>UN proper shipping name</b>	NITRATES, INORGANIC, N.O.S. - (Copper nitrate hydrate)
<b>Transport hazard class(es)</b>	5.1
<b>Hazchem Code</b>	1[Z]
<b>Packaging Method</b>	3.8.5.1
<b>Packing Group</b>	II
<b>EPG Number</b>	5A1
<b>IERG Number</b>	31

**15. Regulatory information**

<b>Regulatory Information</b>	Listed in the Australian Inventory of Chemical Substances (AICS). Not listed under WHS Regulation 2011, Schedule 10 - Prohibited carcinogens, restricted carcinogens and restricted hazardous chemicals.
<b>Poisons Schedule</b>	S6
<b>Hazard Category</b>	Harmful,Irritant,Dangerous for the environment

**16. Other Information**

<b>Literature References</b>	'Standard for the Uniform Scheduling of Medicines and Poisons .', Commonwealth of Australia. Lewis, Richard J. Sr. 'Hawley's Condensed Chemical Dictionary 13th. Ed.', Rev., John Wiley and Sons, Inc., NY, 1997. National Road Transport Commission, 'Australian Code for the Transport of Dangerous Goods by Road and Rail 7th. Ed.', 2007. Safe Work Australia, 'National Code of Practice for the Preparation of Safety Data Sheets for Hazardous Chemicals', 2011. Standards Australia, 'SAA/SNZ HB 76:2010 Dangerous Goods - Initial Emergency Response Guide', Standards Australia/Standards New Zealand, 2010. Safe Work Australia, 'Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004)]'. Safe Work Australia, 'Hazardous Chemical Information System, 2005'. Safe Work Australia, 'National Code of Practice for the Labelling of Safe Work Hazardous Substances (2011)'. Safe Work Australia, 'National Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:1003(1995) 3rd Edition]'. Paul McCarthy Ph. (08) 8440 2000 <b>DISCLAIMER STATEMENT:</b>
<b>Contact Person/Point</b>	All information provided in this data sheet or by our technical representatives is compiled from the best knowledge available to us. However, since data, safety standards and government regulations are subject to change and the conditions of handling and use, or misuse, are beyond our control, we make no warranty either expressed or implied, with respect to the completeness or accuracy to the information contained herein. Chem-Supply accepts no responsibility whatsoever for its accuracy or for any results that may be obtained by customers from using the data and disclaims all liability for reliance on information provided in this data sheet or by our technical representatives.
<b>Empirical Formula &amp; Structural Formula</b>	Copper nitrate trihydrate Cu(NO3)2.3H2O Copper nitrate 2.5-hydrate Cu(NO3)2.2.5H2O ...End Of MSDS...



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# Safety Data Sheet

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