

Section 1: SUBSTANCE IDENTIFICATION AND SUPPLIER

PRODUCT IDENTIFIER

Product Name:	Copper Sulphate Pentahydrate
Other Name[s]:	Copper sulphate, pentahydrate; Sulfuric acid, copper (2+) salt (1:1), pentahydrate
Proper Shipping Name:	Copper Sulphate, Environmentally Hazardous Substance, Solid, N.O.S.
Chemical Formula:	CuSO4 .5H2O
Product Code:	R-C2550
CAS Number:	7758-99-8

PRODUCT USE

Recommended Use:	Coating and Inks - Ceramics - Electroplating and Galvanic (including use in electronics, printed wiring boards, engraving/lithography, metal surface treatment, wire coating) - Fertilizer - Glass - Laboratory Chemicals – Lubricants and Greases - Putties, fillers, construction chemicals - Photochemical -- Polishes and waxes - Rubber and plastic -Adhesives
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SUPPLIER DETAILS

Company Name:	Metabolik
Address:	50 Central Park Drive, Henderson, Auckland 0610, New Zealand
Telephone:	0064 9 834 3783
Email:	info@imageholdings.co.nz
Website:	www.imageholdings.co.nz

EMERGENCY TELEPHONE NUMBERS

National Poisons Information Centre:	0800 POISON (0800 764 766)
Emergency Telephone Number:	0800 764 766
Other Emergency Numbers:	0064 21 934 058
Transport Emergency:	111: Tell operator what service is needed: Fire, Ambulance, Police.
Please ensure that the limitations of this Safety Data Sheet are referred to as set out in Section 16: Other Information at the end of this document.	

Section 2: HAZARD IDENTIFICATION

CLASSIFICATION OF SUBSTANCE OR COMPOSITION

Transport Classification:	Classified as a Dangerous Goods according to NZS 5433:2012 Transport of Dangerous Goods on Land
Hazard Classifications:	Classified as hazardous according to criteria in the Hazardous Substances & New Organisms Act 2015
Approval Number:	HSR003126
Classification Determined by using GHS/HSNO Criteria:	6.3A: Substances that are irritating to the skin 6.4A: Substances that are irritating to the eye 6.5B: Substances that are contact sensitisers 6.9B: Substances that are harmful to human target organs or systems 9.1A: Substances that are very ecotoxic in the aquatic environment 9.1B: Substances that are ecotoxic in the aquatic environment 9.3C: Substances that are harmful to terrestrial vertebrates

LABEL REQUIREMENTS

Signal Word: WARNING



Pictogram:

HAZARD STATEMENT[S]

H302:	Harmful if swallowed.
H315:	Causes skin irritation.
H319:	Causes serious eye irritation.
H410:	Very toxic to aquatic life with long lasting effects.
H413:	May cause long lasting harmful effects to aquatic life.

PRECAUTIONARY STATEMENT(S):

Prevention:	P102: Keep out of reach of children. P273: Avoid release to the environment. P280: Wear protective gloves/protective clothing/eye protection/face protection.
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Product Name: **Copper Sulphate Pentahydrate**
Item Code: **R-C2550**

Print Date: **6/10/2020**
Issue Date: **16/03/2018**
Version: **1**

Response:	P301+312: IF SWALLOWED: Call a POISON CENTER/doctor/.../if you feel unwell
	P302+352: IF ON SKIN: Wash with plenty of water
	P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing.
	P337+313: If eye irritation persists get medical advice/attention.
Disposal:	P501: Dispose of contents/container to ... [... in accordance with local/regional/national/international regulation (to be specified)].
Other Hazards:	None available

Section 3: COMPOSITION INFORMATION

COMPONENT	CAS No.	PROPORTION	HAZARD CODES
Copper Sulphate Pentahydrate	7758-99-8	>98.30%	6.3A, 6.4A, 6.5B, 6.9B, 9.1A, 9.1B, 9.3C

Section 4: FIRST AID MEASURES

FIRST AID MEASURES

Consult the National Poisons Centre on 0800 POISON (0800 764 766) or a doctor immediately in every case of suspected poisoning.

Inhalation:	<p>If Inhalation of product occurs:</p> <ul style="list-style-type: none"> Remove patient from area of exposure – avoid becoming a casualty. Remove contaminated clothing and loosen remaining clothing Allow patient to assume comfortable position and keep warm and rested. Provide emergency airway support if required If breathing is shallow or has stopped ensure airway is clear and apply resuscitation. Seek medical help
Ingestion:	<p>If ingestion occurs:</p> <ul style="list-style-type: none"> DO NOT induce vomiting. Clean mouth with Water and then drink plenty of water, seek medical attention. For advice, contact the National Poisons Centre on 0800 POISON (0800 764 766) or Doctor Never give anything by mouth to an unconscious person. Seek medical assistance immediately
Skin:	<p>If skin contact occurs:</p> <ul style="list-style-type: none"> Remove all contaminated clothing immediately Wash affected area thoroughly with water Seek immediate medical assistance if irritation occurs.
Eye:	<p>If this product comes in contact with eyes:</p> <ul style="list-style-type: none"> Immediately hold eyelids open and flush the eye continuously with running water Continue flushing until advised to stop by Poisons Information Centre or a doctor, or for at least 15 minutes to prevent permanent injury Remove contact lenses if present and easy to do. Seek medical assistance
Advice to Doctor:	Treat symptomatically. Refer to National Poisons & Hazardous Chemicals Information Centre 0800 764 766

Section 5: FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

If material is involved in fire use:	<ul style="list-style-type: none"> There is not restriction on type of media which may be used Use extinguishing media suitable for surrounding fire based on surrounding materials Use Carbon dioxide or suitable dry chemical extinguisher Water Fog or Water Spray Do not use water jets
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SPECIFIC HAZARDS

Hazards of Combustion:	Toxic gases / fumes of sulphur oxides SOx could be produced. The product decomposes over 560 °C producing toxic gases of sulphur oxides (SOx)
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ADVICE TO FIREFIGHTERS

- Fire Fighting**
- Alert Fire Brigade and tell them location and nature of hazard
 - Wear self-contained breathing apparatus plus suitable protective clothing
 - Prevent, spillage from entering drains and water courses
 - Use firefighting procedures suitable for surrounding area
- Protective Equipment:**
- Fire fighters should wear a positive pressure self-contained breathing apparatus [SCBA]
 - protective firefighting clothing [includes firefighting helmet, coat, trousers, boots and gloves]
 - chemical splash suit
- Fire/Explosion Hazard:** Decomposition may produce toxic fumes of: Sulphur Oxides
- Hazchem Code:** 2Z

Section 6: ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS

Wear suitable protective clothing, **See section 8**

ENVIRONMENTAL PRECAUTIONS

Do not allow container or product to enter drains, sewers, streams or ponds. If contamination occurs advise local emergency services **See Section 12**

SPILLS & CONTAINMENT

Minor Spill

- Environmental Hazard – Contain Spill
- Allow only trained personnel wearing appropriate protective equipment to be involved in spill response.
- Avoid accidents, clean up immediately.
- Increase ventilation.
- Avoid walking through spilled product.
- Isolate the danger area.
- Use clean, non-sparking tools and equipment.
- Mechanically collect as much of the spill as possible
- Shut off all possible sources of ignition

Major Spill

- **High Hazard**
- Environmental Hazard – Contain Spill
- CAUTION: Advise personnel in area / surrounding area
- Contact Emergency Services [111], inform them of location and nature of hazard
- Allow only trained personnel wearing appropriate protective equipment to be involved in spill response.

DISPOSAL

- Reuse if possible
- Spill on areas other than pavement, dirt or sand may be handled by removing the affected soils and placing into approved containers
- Transfer to suitable, labelled, corrosion-resistant containers and dispose of promptly as hazardous waste.
- Dispose of in accordance with local and national regulations

Section 7: HANDLING AND STORAGE

HANDLING PRECAUTIONS

Safe Handling

- Ensure an eye bath and safety shower are available and ready to use.
- Avoid Personal contact, including inhalation
- Wear protective clothing when risk of exposure occurs
- Use in well ventilated area
- Keep out of reach of children

Approved Handler: n/a

Tracking: n/a

Record Keeping: n/a

STORAGE PRECAUTIONS

Suitable Container:

- Store in original manufacturers packaging

Safe Storage:

- Store in original containers
- Keep containers closed when not in use
- Store in a cool, dry, well ventilated place
- Keep out of direct sunlight.
- Store away from sources of heat or ignition.
- Check regularly for spills.
- Store away from incompatible materials, foodstuff and containers

Storage Incompatibility:

- None known. Due to its chemical Cu⁺⁺ in presence of water/humidity is corrosive to iron

Other Information:

- Dispose of in accordance with regulatory authority, local and national guidelines
- Always read label before use.

Product Name: **Copper Sulphate Pentahydrate**
Item Code: **R-C2550**

Print Date: **6/10/2020**
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Section 8: EXPOSURE CONTROL / PERSONAL PROTECTION

These recommendations provide general guidance for handling this product. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application.

CONTROL PARAMETERS

Ingredient Data:

Source	Ingredient	TWA	STEL	Notes
NZ Workplace Exposure Standards [WES]	Copper Sulphate	0.2 mg/m ³		Fume
		1 mg/m ³		Dust & Mist

EXPOSURE CONTROLS

Engineering Controls:

Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection

Protective Equipment:



Eye & Face Protection:

- Chemical goggles
- Restrict use of contact lenses

Skin Protection:

- Wear chemical resistant gloves
- Always wash hands before eating, drinking or using facilities
- Protective foot wear

Respiratory Protection:

- Particulate. [AS/NZ 1716, EN 143:2000 & 149:001, ANSI Z88 or national equivalent]

Body Protection:

- Overalls
- Barrier cream

Other Protection:

- Eyewash Unit

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Blue crystalline	Bulk Density :	1.1 – 1.3 kg/l
Physical State:	Solid	Relative Density:	>= 2.286 g/cm ³
Odour:	Odourless	Auto Ignition Temp [°C]:	n/a
Odour Threshold:	n/a	Decomposition Temp:	560 °C
pH [1% Solution]:	3.0 – 4.2 5% water solution	Viscosity [cSt]:	n/a
Melting Point / Freezing Point:	n/a	Molecular Weight [g/mol]:	n/a
Initial Boiling Point / Range:	n/a	Taste:	n/a
Flash Point [°C]:	n/a	Explosive Properties:	n/a
Evaporation Rate:	n/a	Oxidising Properties:	n/a
Flammability:	n/a	Surface Tension [mN/m]:	n/a
Upper Explosive Limit [%]:	n/a	Volatile Component [%vol]:	n/a
Lower Explosive Limit [%]:	n/a	Gas Group:	n/a
Vapour Pressure [kPa]:	n/a	VOC g/l:	n/a
Solubility in water [g/ml]:	266 g/100ml		

Section 10: STABILITY AND REACTIVITY

Stability:	Product is stable under normal conditions of use, storage and temperature
Reactivity:	The substance is a water soluble inorganic salt of copper (2+) and sulphate ions . It is not considered to have a high reactivity. Due to the presence of copper (2+) ion the product results corrosive to iron in presence of water or humidity.
Hazardous Reactions:	Contact with magnesium can generate dangerous levels of hydrogen gas
Conditions to avoid:	Product could be corrosive for iron material in presence of humidity
Incompatible Materials:	Aluminium powder, acetylene gas, hydroxylamine, magnesium and moisture
Hazardous Decomposition Products	Sulphur oxides

Section 11: TOXICOLOGICAL INFORMATION

TOXICOLOGICAL EFFECTS

No adverse health effects expected if the product is handled in accordance with this Safety Data Sheet and the product label. Symptoms or effects that may arise if the product is mishandled and overexposure occurs are:

Ingestion: Harmful if swallowed
Inhalation: Fever from metal inhalation
Skin: Irritation not likely to occur
Eye: Corrosive, irreversible eye damage

Chronic Effects:

Acute Toxicity:	✓	Carcinogenic:	✗
Skin Irritation/ Corrosion:	✗	Reproductive Effects:	✗
Serious Eye Damage/Irritation:	✓	Specific Target Organ – SE:	✗
Respiratory / Skin Sensitiser:	✓	Specific Target Organ – RE:	✓
Mutagenic:	✗	Aspiration Hazard:	✓

Legend:
 ○ Data not available to make classification
 ✓ Data Available to make classification
 ✗ Data available but does not fill criteria for classification

TOXICOLOGICAL DATA:

No LD50 data available for the product. However, Exposure Standard(s) for constituent(s):

Product	Toxicity	Irritation
Copper Sulphate	Oral [Rat] LD50 482 mg/kg	Unknown
	Dermal [Rat] LD50 >2000 mg/kg	

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity: Avoid contaminating waterways, Very toxic to aquatic organisms

Bioaccumulation: Not likely to occur

ECOLOGICAL DATA:

No LC50 data available for the product. However, Exposure Standard(s) for constituent(s):

Product	Endpoint	Duration [hr]	Species	Value
Copper Sulphate	LC50	96 hr	Fish	35 ug Cu/l @ pH >6.5 – 7.5

DEGRADABILITY

Product	Degradability Water/Soil
Copper Sulphate	Copper ions derived from copper sulphate pentahydrate cannot be degraded. The fate of copper ions in the water column was modelled using the Ticket Unit World Model. Removal was also assessed using data from one mesocosm and three field studies. "Rapid" removal was demonstrated, defined as 70% removal within 28 days. Literature data confirm the strong binding of copper ions to sediment, with the formation of stable Cu-S complexes. Re-mobilisation of copper ions to the water column is therefore not expected.

BIOACCUMULATION

Product	Bioaccumulation
Copper Sulphate	Information demonstrates that copper is well regulated in all living organisms and that BCF and BAF values have no meaning for a hazard assessment. The available data demonstrate that waterborne exposure is most the critical exposure route and that copper is not biomagnified in aquatic ecosystems.

Section 13: DISPOSAL INFORMATION

Disposal: Refer to local government authority for disposal recommendations. Dispose of contents/container in accordance with local/regional/national/international regulations. Empty containers must be either rendered totally unusable, or if to be recycled for use, decontaminated by rinsing thoroughly with water. Rinsing water needs to be disposed of carefully

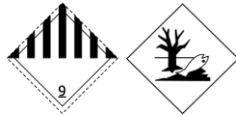
The following controls should be considered:

- Reduction
- Reuse
- Recycle
- Disposal

Disposal of materials or packaging must be carried out in accordance with Hazardous Substances Regulations 2001

Section 14: TRANSPORT INFORMATION

LABELLING REQUIREMENTS



Label:

Marine Pollutant:

Yes

Hazchem:

2Z

LAND TRANSPORT

Dangerous Goods [NZS5433]

UN Number:

3077

Proper Shipping Name:

Environmentally Hazardous Substance, Solid, N.O.S, [Copper Sulphate]

DG Class:

9

Subsidiary Class:

n/a

Packing Group:

III

Environmental Hazard:

Yes

HAZCHEM:

2Z

EPG:

47 Low to moderate hazard substance

Other Information:

AIR TRANSPORT

Dangerous Goods [ICAO-IATA / DGR]

UN Number:

3077

Proper Shipping Name:

Environmentally Hazardous Substance, Solid, N.O.S, [Copper Sulphate]

DG Class:

9

Subsidiary Class:

n/a

Packing Group:

III

Environmental Hazard:

Yes

HAZCHEM:

2Z

Other Information:

SEA TRANSPORT

Dangerous Goods [IMDG-Code / GGVSee]

UN Number:

3077

Proper Shipping Name:

Environmentally Hazardous Substance, Solid, N.O.S, [Copper Sulphate]

DG Class:

9

Subsidiary Class:

n/a

Packing Group:

III

Environmental Hazard:

Yes

HAZCHEM:

2Z

EMS:

FA, SF

Other Information:

Section 15: REGULATORY INFORMATION

REGULATIONS

HSR Number	Group Standard
HSR003126	Not available

LOCATION TEST CERTIFICATE

Hazard Class	Closed Container Controls	Open Container Controls
Not required	Not required	Not required

TRACKING REQUIREMENTS


Not applicable

Section 16: OTHER INFORMATION

This Safety Data Sheet was updated on the date shown at the bottom right of page, and supersedes all previous versions.

The data in this SDS relates only to the specific material designated herein and does not relate to use in combination with any other material. The information is provided in good faith based on current knowledge and experience. No warranty with regard to the product properties is expressed or implied.

CONTROL REGISTER

VERSION #	DATE OF RELEASE	ISSUED TO	APPROVED BY	AMMENDMENTS	NEXT REVIEW DUE
1	16/03/2018	Shared Drive	 Aaron Murray	New Format	Mar 2023