

## Section 1: SUBSTANCE AND SUPPLIER DETAILS

<b>GHS Product Identifier:</b>	Copper Sulphate
<b>Other Name[s]:</b>	Copper Sulphate, pentahydrate, Sulfuric acid, copper (2+0 salt (1:10, pentahydrate
<b>Proper Shipping Name:</b>	Environmentally Hazardous Substance, Solid, N.O.S. [Copper Sulphate]
<b>Chemical Formula:</b>	CuSO <sub>4</sub> .5H <sub>2</sub> O
<b>Product Code:</b>	R-C2550
<b>CAS Number:</b>	7758-99-8

## PRODUCT USE

<b>Recommended Use:</b>	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

<b>Company Name:</b>	Image Holdings Limited
<b>Address:</b>	50 Central Park Drive, Henderson, Auckland 0610, New Zealand
<b>Telephone:</b>	0064 9 834 3783
<b>Email:</b>	<a href="mailto:info@imageholdings.co.nz">info@imageholdings.co.nz</a>
<b>Website:</b>	<a href="http://www.imageholdings.co.nz">www.imageholdings.co.nz</a>

## EMERGENCY TELEPHONE NUMBERS

<b>National Poisons Information Centre:</b>	0800 POISON (0800 764 766)
<b>Emergency Telephone Number:</b>	<b>0800 764 766</b>
<b>Other Emergency Numbers:</b>	<b>0064 21 934 058</b>
<b>Transport Emergency:</b>	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: HAZARDS IDENTIFICATION

## CLASSIFICATION OF SUBSTANCE OR COMPOSITION

<b>Transport Classification:</b>	Classified as a Dangerous Goods according to NZS 5433:2012 Transport of Dangerous Goods on Land
<b>Hazard Classifications:</b>	Classified as hazardous according to criteria in the Hazardous Substances & New Organisms Act 2015 Classified as Hazardous according to the criteria of the Globally Harmonised System of Classification and Labelling of Chemicals [GHS Rev.7]
<b>HSNO Approval Number:</b>	<b>HSR002503</b>
<b>GHS Classification:</b>	Acute Toxicity [Oral] - Category 4 Skin corrosion/irritation - Category 2 Serious eye damage/irritation - Category 2 Skin sensitisation - Category 1 Specific target organ toxicity [repeated exposure] - Category 2 Hazardous to the aquatic environment, short-term [Acute] - Category 1 Hazardous to the aquatic environment, long-term [Chronic] - Category 1 Hazardous to terrestrial vertebrates

## HAZARD STATEMENT[S]

<b>H315:</b>	Causes skin irritation.
<b>H317:</b>	May cause an allergic skin reaction.
<b>H319:</b>	Causes serious eye irritation.
<b>H373:</b>	May cause damage to organs through prolonged or repeated exposure
<b>H400:</b>	Very toxic to aquatic life.
<b>H410:</b>	Very toxic to aquatic life with long lasting effects.
<b>H433:</b>	Harmful to terrestrial vertebrates

## GHS PICTOGRAMS:

Signal Word:

WARNING

Pictogram:



GHS07



GHS08



GHS09

## PRECAUTIONARY STATEMENT(S):

## Prevention:

- P102:** Keep out of reach of children.  
**P103:** Read label before use.  
**P260:** Do not breathe dust/fumes/gas/mist/vapours/spray.  
**P264:** Wash hands thoroughly after handling.  
**P270:** Do not eat, drink or smoke when using this product.  
**P272:** Contaminated work clothing should not be allowed out of the workplace.  
**P273:** Avoid release to the environment.  
**P280:** Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.

## Response:

- P314:** Get medical advice/attention if you feel unwell.  
**P330:** Rinse mouth.  
**P362:** Take off contaminated clothing.  
**P391:** Collect spillage.  
**P301+P312:** IF SWALLOWED: Call a POISON CENTER/doctor/if you feel unwell.  
**P302+P352:** IF ON SKIN: Wash with plenty of water  
**P333+P313:** If skin irritation or a rash occurs: Get medical advice/attention.  
**P337+P313:** If eye irritation persists get medical advice/attention.  
**P305+P351+P338:** IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing.

## Disposal:

- P501:** Dispose of contents/container in accordance with local/regional/national/international regulation.

## Other Hazards:

No data available

## Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

COMPONENT	CAS No.	CONCENTRATION	GHS CLASSIFICATION
Copper (II) Sulphate Pentahydrate	7758-99-8	99%	Acute Toxicity [Oral] – Cat. 4 Skin corrosion/irritation – Cat. 2 Serious eye damage/irritation – Cat. 2 Skin sensitisation – Cat. 1 Specific target organ toxicity [repeated exposure] – Cat. 2 Hazardous to the aquatic environment, [Acute] – Cat. 1 Hazardous to the aquatic environment, [Chronic] – Cat. 1 Hazardous to terrestrial vertebrates
Balance of ingredients are non-hazardous or hazardous in less than 1% in concentration (or 0.1% for carcinogens, reproductive toxins, or respiratory sensitisers)		Balance	-

This is a commercial product whose exact ratio of components may vary. Trace quantities of impurities are also likely

## 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:

## If Inhalation of product occurs:

- 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.
- **Urgently Seek medical help without delay**

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<b>Ingestion:</b>	<p><b>If ingestion occurs:</b></p> <ul style="list-style-type: none"> <li>• DO NOT induce vomiting.</li> <li>• Clean mouth with Water and then drink plenty of water, seek medical attention.</li> <li>• For advice, contact the National Poisons Centre on 0800 POISON (0800 764 766) or Doctor</li> <li>• Never give anything by mouth to an unconscious person.</li> <li>• <b>Seek medical assistance immediately</b></li> </ul>
<b>Skin:</b>	<p><b>If skin contact occurs:</b></p> <ul style="list-style-type: none"> <li>• Remove all contaminated clothing immediately</li> <li>• Wash affected area thoroughly with water</li> <li>• <b>Seek immediate medical assistance if irritation occurs.</b></li> </ul>
<b>Eye:</b>	<p><b>If this product comes in contact with eyes:</b></p> <ul style="list-style-type: none"> <li>• Immediately hold eyelids open and flush the eye continuously with running water</li> <li>• Continue flushing until advised to stop by Poisons Information Centre or a doctor, or for at least 15 minutes to prevent permanent injury</li> <li>• Remove contact lenses if present and easy to do.</li> <li>• <b>Seek medical assistance</b></li> </ul>
<b>Advice to Doctor:</b>	Treat symptomatically. Refer to National Poisons & Hazardous Chemicals Information Centre 0800 764 766

### Section 5: FIRE FIGHTING MEASURES

#### EXTINGUISHING MEDIA

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

<b>Hazards of Combustion:</b>	Sulphur oxides, copper oxides. May release copper dust and fumes.
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#### ADVICE TO FIREFIGHTERS

<b>Fire Fighting</b>	<ul style="list-style-type: none"> <li>▪ Alert Fire Brigade and tell them location and nature of hazard</li> <li>▪ Wear self-contained breathing apparatus plus suitable protective clothing</li> <li>▪ Prevent, spillage from entering drains and water courses</li> <li>▪ Use firefighting procedures suitable for surrounding area</li> </ul>
<b>Protective Equipment:</b>	<ul style="list-style-type: none"> <li>▪ Fire fighters should wear a positive pressure self-contained breathing apparatus [SCBA]</li> <li>▪ protective firefighting clothing [includes firefighting helmet, coat, trousers, boots and gloves]</li> <li>▪ chemical splash suit</li> </ul>
<b>Fire/Explosion Hazard:</b>	Decomposition may produce toxic fumes of: Sulphur oxides, copper oxides. May release copper dust and fumes.
<b>Hazchem Code:</b>	<b>2Z</b>

### 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

<b>Minor Spill</b>	<ul style="list-style-type: none"> <li>▪ Environmental Hazard – Contain Spill</li> <li>▪ Allow only trained personnel wearing appropriate protective equipment to be involved in spill response.</li> <li>▪ Avoid accidents, clean up immediately.</li> <li>▪ Increase ventilation.</li> <li>▪ Avoid walking through spilled product.</li> <li>▪ Isolate the danger area.</li> <li>▪ Use clean, non-sparking tools and equipment.</li> <li>▪ Mechanically collect as much of the spill as possible</li> <li>▪ Shut off all possible sources of ignition</li> </ul>
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**Major Spill**

- **Medium 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

**Certified Handler:** Not required**Tracking:** Not required**Record Keeping:** Not required**STORAGE PRECAUTIONS****Suitable Container:**

- **Store in manufacturers original 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.

**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	0.2mg/m <sup>3</sup>		Fume
		1mg/m <sup>3</sup>		Dust & Mist
Particulates not otherwise classified		10mg/m <sup>3</sup>	Not Available	Inspirable dust
Particulates not otherwise classified		3mg/m <sup>3</sup>	Not Available	Dust

**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

**Personal Protection Equipment:****Hand Protection****Eye Protection****Protective Clothing****Respirator Protection****Foot Protection**

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<b>Eye &amp; Face Protection:</b>	<ul style="list-style-type: none"> <li>Chemical goggles</li> <li>Restrict use of contact lenses</li> </ul>
<b>Skin Protection:</b>	<ul style="list-style-type: none"> <li>Wear chemical resistant gloves</li> <li>Always wash hands before eating, drinking or using facilities</li> <li>Protective footwear</li> </ul>
<b>Respiratory Protection:</b>	<ul style="list-style-type: none"> <li>Particulate. [AS/NZ 1716, EN 143:2000 &amp; 149:001, ANSI Z88 or national equivalent]</li> </ul>
<b>Body Protection:</b>	<ul style="list-style-type: none"> <li>Overalls</li> <li>Barrier cream</li> </ul>
<b>Other Protection:</b>	<ul style="list-style-type: none"> <li>Eyewash Unit</li> </ul>

## Section 9: PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance:</b>	Blue Crystal or granule	<b>Bulk Density:</b>	1225 kg.m <sup>3</sup>
<b>Physical State:</b>	Solid	<b>Relative Density [Water=1]:</b>	n/a
<b>Odour:</b>	Odourless	<b>Auto Ignition Temp [°C]:</b>	n/a
<b>Odour Threshold:</b>	n/a	<b>Decomposition Temp:</b>	340 - 650°C
<b>pH [1% Solution]:</b>	3.5 – 4.5	<b>Viscosity [cSt]:</b>	n/a
<b>Melting Point / Freezing Point:</b>	90 - 245°C	<b>Molecular Weight [g/mol]:</b>	n/a
<b>Initial Boiling Point / Range:</b>	n/a	<b>Taste:</b>	n/a
<b>Flash Point [°C]:</b>	n/a	<b>Explosive Properties:</b>	n/a
<b>Evaporation Rate:</b>	n/a	<b>Oxidising Properties:</b>	n/a
<b>Flammability:</b>	n/a	<b>Surface Tension [mN/m]:</b>	n/a
<b>Upper Explosive Limit [%]:</b>	n/a	<b>Volatile Component [%vol]:</b>	n/a
<b>Lower Explosive Limit [%]:</b>	n/a	<b>Gas Group:</b>	n/a
<b>Vapour Pressure [kPa]:</b>	n/a	<b>VOC g/l:</b>	n/a
<b>Solubility in water [g/l]:</b>	Soluble		

## Section 10: STABILITY AND REACTIVITY

<b>Stability:</b>	Product is stable under normal conditions of use, storage and temperature
<b>Reactivity:</b>	No data available.
<b>Conditions to avoid:</b>	Heat. Releases water of crystallisation when heated. High temperatures may result in release of copper fume.
<b>Incompatibility:</b>	Hydroxylamine, acetylene.
<b>Hazardous Decomposition:</b>	Sulphur oxides, copper oxides. May release copper dusts and fumes.

## 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:

<b>Ingestion:</b>	Harmful if swallowed. Ingestion of large quantities may lead to vomiting, abdominal pain, dizziness, convulsions, shock, coma, and possible death. LD50 (oral, rat)960 mg.kg-1
<b>Inhalation:</b>	Not triggered however if inhaled irritation of mucous membranes (nose & throat). Inhalation of large amounts may lead to symptoms shown for ingestion.
<b>Skin:</b>	Causes skin irritation. May cause an allergic skin reaction.
<b>Eye:</b>	Causes severe eye irritation
<b>Chronic Effects:</b>	May cause damage to organs through prolonged or repeated exposure. Chronic exposure can lead to kidney damage, liver enlargement, jaundice and nervous system damage, dermatitis.

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

Legend:

- ☉ Data not available to make classification
- ✓ Data Available to make classification
- ✗ Data available but does not fill criteria for classification

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## TOXICOLOGICAL DATA:

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

Product	Toxicity	Irritation
Copper Sulphate	Oral [Rat] LD50 960 mg/kg	Skin irritant Serious Eye irritant

## Section 12: ECOLOGICAL INFORMATION

**Ecotoxicity:** Avoid contaminating waterways**Bioaccumulation** No data available

## 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	Oncorhynchus mykiss	0.032 mg/l
	EC50	48 hr	Daphnia magna	0.18 mg/l
	EC50	5day	Algae	0.0031 mg/l

## DEGRADABILITY

Product	Degradability Water/Soil
Copper Sulphate	High

## BIOACCUMULATION

Product	Bioaccumulation
Copper Sulphate	LOW [Log KOW = 2.2002]

## 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:**

22

## LAND / AIR / SEA TRANSPORT

Regulated for transport of Dangerous Goods [UN]

**UN Number:**

3077

**Proper Shipping Name:**

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

**DG Class:**

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**Subsidiary Class:**

n/a

**Packing Group:**

III

**Environmental Hazard:**

Yes

**Other Information:**

If the product's individual container is below 5kg, it can be transported as a non-DG as long as the product packaging is still labelled as per DG requirements and the driver is given safety information in accordance with Chapter 3.4 of the UNRTDG

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## Section 15: REGULATORY INFORMATION

## REGULATIONS

**EPA Approval Number:** HSR002503 - Additives, Process Chemicals and Raw Materials (subsidiary) -

**Group Standard:** This substance is classified hazardous according to the EPA Hazardous Substances (Classification) Notice 2020

**GHS Classification:** Acute Toxicity [Oral] - Category 4  
 Skin corrosion/irritation - Category 2  
 Serious eye damage/irritation - Category 2  
 Skin sensitisation - Category 1  
 Specific target organ toxicity [repeated exposure] - Category 2  
 Hazardous to the aquatic environment, short-term [Acute] - Category 1  
 Hazardous to the aquatic environment, long-term [Chronic] - Category 1  
 Hazardous to terrestrial vertebrates

**HWS [HS] Regulations 2017**

Signage Trigger Quantities (Schedule 3)	Trigger Quantity
Emergency Response Plan (Schedule 5)	100kg
Secondary Containment (Schedule 5)	100kg
Tracking (Schedule 26)	Not required
Certified Handlers	Not required
Restrictions of use	None known.

## 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

## ABBREVIATIONS

ACVM: Agricultural Compounds and Veterinary Medicines

Approval Code: HSNO Approval number for Group Standard

CAS Number: Unique Chemical Abstracts Service Registry Number

EC50: Ecotoxic Concentration 50% - concentration in water which is fatal to 50% of a test population [e.g. daphnia, fish species]

EPA: Environmental Protection Authority [New Zealand]

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

HAZCHEM Code: Emergency action code of numbers and letters that provide information to emergency services, especially fire fighters

HSNO: Hazardous Substances and New Organisms [Act and Regulations]

HSR Number: HSNO Approval number for Group Standard

IARC: International Agency for Research on Cancer

LEL/UEL: Lower Explosive Limit / Upper Explosive Limit

LD50: Lethal Dose 50% - concentration in air which is fatal to 50% of a test population [Rats]

LC50: Lethal Concentration 50% - concentration in air which is fatal to 50% of a test population [Rats]

NOEC: No Observed Effect Concentration

NZIoC: New Zealand Inventory of Chemicals

SDS [MSDS]: Safety Data Sheet or Material Safety Data Sheet

STEL: Short Term Exposure Limit – The maximum airborne concentration of a chemical or biological agent to which a worker may be exposed in any 15-minute period, provided the TWA is not exceeded

TWA: Time Weighted Average – generally referred to WEES average over typical workday [8 hours, 5 days a week]. The WES relates to exposure that has been measured by personal monitoring using procedures that gather air samples in the workers breathing zone.

UN Number: United Nations Number

WES: Workplace Exposure Standard – The airborne concentration of a biological or chemical agent to which a worker may be exposed during work hours

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## REFERENCES

Data: Unless otherwise stated comes from the EPA HSNO chemical classification information database [CCID]  
Controls: EPA notices [www.epa.govt.nz](http://www.epa.govt.nz), Health & Safety at Work [Hazardous Substances] Regulations 2017, [www.legislation.govt.nz](http://www.legislation.govt.nz)  
WES: The latest NZ Workplace Exposure Standards, published by WorkSafe NZ and available on their website – [www.worksafe.govt.nz](http://www.worksafe.govt.nz)  
Other References: Suppliers SDS, EU ECHA, ingredients SDS's

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.

All reasonable care has been taken to ensure that the information and advice contained herein are from sources believed to be reliable and to represent the most up-to-date knowledge available at the given Review Date [bottom right of pages]. No liability is assumed for damages related to the use or misuse of this substance.

All chemical materials may present unknown hazards as people have varying degrees of sensitivity to chemicals. Therefore, this product should be used with caution. The information herein is given in good faith, but no warranty, express or implied is made.

END OF SAFETY DATA SHEET

IMAGE  
HOLDINGS  
LIMITED

