

**1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER**

Company Name **ECP Limited**  
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<b>Product</b>	Copper (II) Sulfate Pentahydrate				<b>Code</b>	20608
<b>CAS#</b>	<b>HSNO#</b>	<b>UN #</b>	<b>DG Class/es</b>	<b>Packing group #</b>	<b>Tracking?</b>	<b>Handlers Certificate?</b>
7758-98-7	HSR003126	3077	9	III	No	6.1C

**Recommended use:** Laboratory Investigations

**2. Hazards identification**

2.1 GHS Classification

- Acute toxicity, Oral (Category C)
  - Skin irritation (Category A)
  - Eye irritation (Category A)
  - Aquatic toxicity (Acute or Chronic) (Category A)
- 2.2 GHS Label elements, including precautionary statements



Pictogram Signal word **Danger**

Hazard statement(s)

- H301 Toxic if swallowed.
- H315 Causes skin irritation.
- H319 Causes serious eye irritation.
- H400 Very toxic to aquatic life.

Precautionary statement(s)

Prevention

- P264 Wash skin thoroughly after handling.
- P270 Do not eat, drink or smoke when using this product.
- P273 Avoid release to the environment.
- P280 Wear protective gloves.

Response

- P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor.
- P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
- P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P330 Rinse mouth.
- P332 + P313 If skin irritation occurs: Get medical advice/attention.
- P337 + P313 If eye irritation persists: Get medical advice/attention.
- P362 Take off contaminated clothing and wash before reuse.
- P391 Collect spillage.

Storage

- P405 Store locked up.

Disposal

- P501 Dispose of contents/container to an approved waste disposal plant.

## 2.3 Other hazards

None

## 3. Composition/information on ingredients

Substance/Mixture: Substance

### 3.1 Substances

Hazardous components

Component	Classification	Concentration
Copper sulphate	6.1 D; 6.3 A; 6.4 A; 9.1 A; H302, H315, H319, H410 M-Factor - Aquatic Acute: 10	<=100%

## 4. First aid measures

### 4.1 Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

### 4.2 Most important symptoms and effects, both acute and delayed

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. 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. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

### 4.3 Indication of any immediate medical attention and special treatment needed

No data available

## 5. Firefighting measures

### 5.1 Extinguishing media

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

### 5.2 Special hazards arising from the substance or mixture

No data available

### 5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

### 5.4 Further information

No data available

## 6. Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Avoid breathing dust.

#### 6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

#### 6.3 Methods and materials for containment and cleaning up

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

### **7. Handling and storage**

#### 7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed.

7.2 Conditions for safe storage, including any incompatibilities Keep container tightly closed in a dry and well-ventilated place. Air sensitive. Hygroscopic. Store under inert gas.

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

#### 8.1 Control parameters

Occupational Exposure Limits

Contains no substances with occupational exposure limit values.

#### 8.2 Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection

Safety glasses with side-shields. Use equipment for eye protection tested and approved under appropriate government standards.

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Body Protection

Complete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

For nuisance exposures use a particle respirator. For higher level protection use respirator cartridges. Use respirators and components tested and approved under appropriate government standards.

### **9. Physical and chemical properties**

#### 9.1 Information on basic physical and chemical properties

- a) Appearance  
Form: powder  
Colour: light grey
- b) Odour  
No data available
- c) Odour Threshold  
No data available
- d) pH  
No data available
- e) Melting point/freezing point  
Melting point/range: 200 °C - dec.
- f) Initial boiling point and boiling range  
No data available
- g) Flash point  
Not applicable
- h) Evaporation rate  
No data available
- i) Flammability (solid, gas)  
No data available
- j) Upper/lower flammability or explosive limits  
No data available
- k) Vapour pressure  
9.7 hPa at 25 °C
- l) Vapour density  
No data available
- m) Relative density  
3.603 g/mL at 25 °C
- n) Water solubility  
No data available
- o) Partition coefficient: n-octanol/water  
No data available
- p) Auto-ignition temperature  
No data available
- q) Decomposition temperature  
No data available
- r) Viscosity  
No data available

## **10. Stability and reactivity**

### 10.1 Reactivity

No data available

### 10.2 Chemical stability

No data available

### 10.3 Possibility of hazardous reactions

No data available

### 10.4 Conditions to avoid

No data available

### 10.5 Incompatible materials

Powdered metals, hydroxylamine, magnesium, strong reducing agents.

### 10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions

Sulphur oxides, borane/boron oxides, copper oxides.

Other decomposition products

No data available

## **11. Toxicological information**

### 11.1 Information on toxicological effects

Acute toxicity

LD50 Oral - Rat - 482 mg/kg

LD50 Intraperitoneal - Rat - 20 mg/kg

LD50 Subcutaneous - Rat - 43 mg/kg

LD50 Intravenous - Rat - 48.9 mg/kg

Skin corrosion/irritation

No data available

Serious eye damage/eye irritation

No data available

Respiratory or skin sensitisation

No data available

Germ cell mutagenicity

Genotoxicity in vitro - Rat - Liver DNA damage

Genotoxicity in vivo - Mouse - Intraperitoneal DNA damage

Carcinogenicity

Carcinogenicity - Chicken - Parenteral Tumorigenic: Equivocal tumorigenic agent by RTECS criteria.

Endocrine: Tumours.

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity

Reproductive toxicity - Mouse - Intravenous

Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).

Developmental Toxicity - Mouse - Intravenous

Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Specific Developmental

Abnormalities: Central nervous system. Specific Developmental Abnormalities: Cardiovascular (circulatory) system.

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

Potential health effects

Inhalation

May be harmful if inhaled. Causes respiratory tract irritation.

Ingestion

Harmful if swallowed.

Skin

May be harmful if absorbed through skin. Causes skin irritation.

Eyes

Causes serious eye irritation.

Signs and Symptoms of Exposure

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. 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., to the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Additional Information

RTECS: GL8800000

## 12. Ecological information

### 12.1 Toxicity

Toxicity to fish mortality

LC50 - other fish - 1 - 2.5 mg/l - 96.0 h

Toxicity to daphnia and other aquatic invertebrates Immobilization

EC50 - Daphnia magna (Water flea) - 0.024 mg/l - 48 h

### 12.2 Persistence and degradability

No data available

### 12.3 Bioaccumulative potential

No data available

### 12.4 Mobility in soil

No data available

### 12.5 Results of PBT and vPvB assessment

No data available

### 12.6 Other adverse effects

Very toxic to aquatic life with long lasting effects.

## 13. Disposal considerations

### 13.1 Waste treatment methods

Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging

Dispose of as unused product.

## 14. Transport Information Table

		ADR/RID – European packaging certification	IMDG International Maritime Dangerous Goods Code	IATA – DGR International Air Travel Association – Dangerous Goods Regulations
14.1	UN Number	3077	3077	3077
14.2	UN Proper Shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Copper sulphate)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Copper sulphate)	Environmentally hazardous substance, solid, n.o.s. (Copper sulphate)
14.3	Transport Hazard Class	9	9	9
14.4	Packaging group	III	III	III
14.5	Environmental Hazards	Yes	Yes	Yes

14.6	Special precautions for user	No data available
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### 15. Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulatory information

HSNO Group Standard Approval: HSR002596 - Laboratory Chemicals and Reagent Kits Group Standard 2006

Tracking Required: not required

Approved Handler Cert.: 6.1C

### 16. Disclaimer

The information above is believed to be accurate and represents the best information currently available to us. However, the information is not a guarantee expressed or implied, with respect to such information, and we assume no liability resulting from its use. Anyone using the chemical described here should ensure that he or she has the appropriate training and has the expertise and any equipment required for safe handling. If clarification or further information is required, please contact ECP Ltd or refer to the official handler of dangerous goods within your own company. The user should also make their own investigations to determine the suitability of the product for their particular purposes. In no event shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential, or exemplary damages howsoever arising, even if the company has been advised of the possibility of such damages.

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