

## **copper(II) sulfate pentahydrate 7758-99-8 MSDS**

### **SECTION 1: Identification of the substance/mixture and of the company/undertaking**

#### **Product identifiers**

Product name : Cupric Sulfate

REACH No. : A registration number is not available for this substance as the substance or its uses are exempted from registration, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

CAS-No. : 7758-99-8

#### **Relevant identified uses of the substance or mixture and uses advised against**

Identified uses : Laboratory chemicals, Manufacture of substances

### **SECTION 2: Hazards identification**

#### **Classification of the substance or mixture**

##### **Classification according to Regulation (EC) No 1272/2008**

Acute toxicity, Oral (Category 4), H302

Eye irritation (Category 2), H319

Skin irritation (Category 2), H315

Acute aquatic toxicity (Category 1), H400

Chronic aquatic toxicity (Category 1), H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

##### **Classification according to EU Directives 67/548/EEC or 1999/45/EC**

Xn Harmful R22

Xi Irritant R36/38

N Dangerous for the environment R50/53

For the full text of the R-phrases mentioned in this Section, see Section 16.

#### **Label elements**

##### **Labelling according Regulation (EC) No 1272/2008**

Pictogram

Signal word Warning

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.

Precautionary statement(s)

P273 Avoid release to the environment.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes.

Remove

contact lenses, if present and easy to do. Continue rinsing.

P501 Dispose of contents/ container to an approved waste disposal plant.  
Supplemental Hazard none  
Statements

**Other hazards - none**

### **SECTION 3: Composition/information on ingredients**

#### **Substances**

Synonyms : Copper(II) sulfatepentahydrate  
Cupric sulfatepentahydrate  
Formula :  $\text{CuO}_4\text{S} \cdot 5\text{H}_2\text{O}$   
Molecular Weight : 249,69 g/mol  
CAS-No. : 7758-99-8  
EC-No. : 231-847-6

#### **Hazardous ingredients according to Regulation (EC) No 1272/2008**

Component	Classification	Concentration
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##### **Copper sulphate pentahydrate**

CAS-No.	7758-99-8	Acute Tox. 4; Skin Irrit. 2; Eye	<= 100 %
EC-No.	231-847-6	Irrit. 2; Aquatic Acute 1;	
Index-No.	029-004-00-0	Aquatic Chronic 1; H302, H315, H319, H410	

#### **Hazardous ingredients according to Directive 1999/45/EC**

Component	Classification	Concentration
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##### **Copper sulphate pentahydrate**

CAS-No.	7758-99-8	Xn, N, R22 - R36/38 - R50/53	<= 100 %
EC-No.	231-847-6		
Index-No.	029-004-00-0		

For the full text of the H-Statements and R-Phrases mentioned in this Section, see Section 16

### **SECTION 4: First aid measures**

#### **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. Take victim immediately to hospital. 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.

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

The most important known symptoms and effects are described in the labelling (see section 2.2)

and/or in

section 11

**Indication of any immediate medical attention and special treatment needed**

no data available

**SECTION 5: Firefighting measures**

**Extinguishing media**

**Suitable extinguishing media**

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

**Special hazards arising from the substance or mixture**

Sulphur oxides, Copper oxides

**Advice for firefighters**

Wear self contained breathing apparatus for fire fighting if necessary.

**Further information**

no data available

**SECTION 6: Accidental release measures**

**Personal precautions, protective equipment and emergency procedures**

Wear respiratory protection. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

For personal protection see section 8.

**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.

**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.

**Reference to other sections**

For disposal see section 13.

**SECTION 7: Handling and storage**

**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.

For precautions see section 2.2.

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

Store in cool place. Keep container tightly closed in a dry and well-ventilated place.

Air sensitive. hygroscopic Handle and store under inert gas. Store under inert gas.

**Specific end use(s)**

A part from the uses mentioned in section 1.2 no other specific uses are stipulated

**SECTION 8: Exposure controls/personal protection**

**Control parameters**

## **Components with workplace control parameters**

### **Exposure controls**

#### **Appropriate engineering controls**

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling

the product.

### **Personal protective equipment**

#### **Eye/face protection**

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

#### **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.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0,11 mm

Break through time: 480 min

Material tested: Dermatril® (KCL 740 / Z677272, Size M)

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0,11 mm

Break through time: 480 min

Material tested: Dermatril® (KCL 740 / Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374,

contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

#### **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**

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N99 (US) or type P2 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator.

Use

respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

### **Control of environmental exposure**

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

## **SECTION 9: Physical and chemical properties**

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

- a) Appearance      Form: crystalline  
Colour: blue
- b) Odour      no data available
- c) Odour Threshold      no data available
- d) pH      3,7 - 4,5 at 50 g/l at 25 °C
- e) Melting point/freezing      Melting point/range: 110 °C - dec. point
- f) Initial boiling point and no data available  
boiling range
- g) Flash point      no data available
- h) Evaporation rate      no data available
- i) Flammability (solid, gas) no data available
- j) Upper/lower      no data available  
flammability or  
explosive limits
- k) Vapour pressure      9,7 hPa at 25 °C
- l) Vapour density      no data available
- m) Relative density      2,284 g/cm<sup>3</sup>
- n) Water solubility      no data available
- o) Partition coefficient: n- no data available  
octanol/water
- p) Auto-ignition      no data available  
temperature
- q) Decomposition      no data available  
temperature
- r) Viscosity      no data available
- s) Explosive properties      no data available
- t) Oxidizing properties      no data available

### **Other safety information**

no data available

## **SECTION 10: Stability and reactivity**

### **Reactivity**

no data available

### **Chemical stability**

Stable under recommended storage conditions.

### **Possibility of hazardous reactions**

no data available

**Conditions to avoid**

no data available

**Incompatible materials**

Powdered metals, Anhydrous copper(II) sulfate, reacts violently with:, hydroxylamine, Magnesium

**Hazardous decomposition products**

Other decomposition products - no data available

In the event of fire: see section 5

**SECTION 11: Toxicological information****Information on toxicological effects****Acute toxicity**

LD50 Oral - rat - 482 mg/kg

(OECD Test Guideline 401)

Remarks: anhydrous

LD50 Dermal - rat - > 2.000 mg/kg

Remarks: anhydrous

**Skin corrosion/irritation**

no data available

**Serious eye damage/eye irritation**

no data available

**Respiratory or skin sensitisation**

Prolonged or repeated exposure may cause allergic reactions in certain sensitive individuals.

**Germ cell mutagenicity**

no data available

**Carcinogenicity**

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**

no data available

**Specific target organ toxicity - single exposure**

no data available

**Specific target organ toxicity - repeated exposure**

no data available

**Aspiration hazard**

no data available

**Additional Information**

RTECS: GL8900000

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

**SECTION 12: Ecological information****Toxicity**

Toxicity to daphnia and EC50 - Daphnia magna (Water flea) - 0,024 mg/l - 48 h  
other aquatic  
invertebrates

**Persistence and degradability**

no data available

**Bioaccumulative potential**

no data available

**Mobility in soil**

no data available

**Results of PBT and vPvB assessment**

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

**Other adverse effects**

Very toxic to aquatic life.

**SECTION 13: Disposal considerations**

**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.

**SECTION 14: Transport information**

**UN number**

ADR/RID: 3077    IMDG: 3077    IATA: 3077

**UN proper shipping name**

ADR/RID: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Copper sulphate pentahydrate)

IMDG: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Copper sulphate pentahydrate)

IATA: Environmentally hazardous substance, solid, n.o.s. (Copper sulphate pentahydrate)

**Transport hazard class(es)**

ADR/RID: 9    IMDG: 9    IATA: 9

**Packaging group**

ADR/RID: III    IMDG: III    IATA: III

**Environmental hazards**

ADR/RID: yes    IMDG Marine pollutant: yes    IATA: yes

**Special precautions for user**

no data available

**SECTION 15 - REGULATORY INFORMATION**

N/A

**SECTION 16 - ADDITIONAL INFORMATION**

N/A