



# COPPER SULPHATE

## Safety Data Sheet

In compliance with Regulation (EC)1907/2006,  
Regulation (EC) 1272/2008 and Regulation (EC) 453/2010  
Date of issue: 01/11/2010 Revision date: 01/01/2014

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

#### 1.1. Product identifier

Product form : Substance  
Product name : Copper Sulphate  
EC no : 231-847-6  
CAS No. : 7758-98-7  
Index-No. : 029-004-00-0  
REACH registration No. : Exempted in accordance with Annex V.7  
Synonyms : Cupric sulfate  
Formula :  $\text{CuO}_4\text{S}$   
Molecular weight : 159.61 g/mol

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

##### 1.2.1. Relevant identified uses

Use of the substance/preparation:  
Laboratory chemicals, Manufacture of substances

##### 1.2.2. Uses advised against

None

Full text of use descriptors: see section 16.

#### 1.3. Details of the supplier of the safety data sheet

Keramikos  
Oudeweg 153  
2031 CC Haarlem

#### 1.4. Emergency telephone number

T 023 – 542 44 16 [info@keramikos.nl](mailto:info@keramikos.nl)

### SECTION 2: Hazards identification.

#### 2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Acute toxicity, Oral (Category 4), H302  
Skin irritation (Category 2), H315



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Eye irritation (Category 2), H319  
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 Directive 67/548/EEC or 1999/45/EC](#)

Not classified

Full text of R-phrases: see section 16

### 2.2. Label elements

[Labelling according to Regulation \(EC\) No. 1272/2008 \(CLP\)](#)

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 Statements:  
none

### 2.3. Other hazards

This substance/mixture does not meet the PBT criteria of REACH, annex XIII.



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

#### 3.1. Substances

Chemical name	CAS No.	EC-No.	%	Classification (67/548/EEC)	Classification (1272/2008/EC)
Copper Sulphate	7758-98-7	231-847-6	100	N/A	Acute Tox. 4; Skin Irrit. 2; Eye Irrit. 2; Aquatic Acute 1; Aquatic Chronic 1; H302, H315, H319, H400, H410 M-Factor – Aquatic Acute: 10

Full text of R-, H- and EUH-phrases: see section 16

### SECTION 4: First aid measures.

#### 4.1. Description of first aid measures

General Information: Consult a physician. Show this safety data sheet to the doctor in attendance. Inhalation: If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

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

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

Eye contact: Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician

#### 4.2. 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

#### 4.3. Indication of any immediate medical attention and special treatment needed No data available

### SECTION 5: Firefighting measures.

#### 5.1. Extinguishing media

Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable extinguishing media: None

#### 5.2. Special hazards arising from the substance or mixture No data available

#### 5.3. Advice for firefighters



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Wear self-contained breathing apparatus for firefighting if necessary.

### 5.4. Further Information

No data available

## SECTION 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. For personal protection see section 8.

### 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 material for containment and cleaning up

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

**6.4. Reference to other sections** For disposal see section 13.

## SECTION 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. For precautions see section 2.2.

### 7.2. 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  
Store under inert gas. Storage class (TRGS 510): Non Combustible Solids

### 7.3. Specific end use(s)

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

## SECTION 8: Exposure controls/personal protection.

### 8.1. Control parameters

Components with workplace control parameters

Contains no substances with occupational exposure limit values.



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### 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 conforming to EN166 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.

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 type P95 (US) or type P1 (EU EN 143) particle respirator. For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. 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.

Physical state  
Colour  
Odour Odour threshold pH  
Relative evaporation rate (butylacetate=1)  
Melting point  
Freezing point  
Boiling point  
Flash point  
Self ignition temperature  
Decomposition temperature  
Flammability (solid, gas)  
Vapour pressure  
Relative vapour density at 20 °C  
Relative density Density  
Solubility  
Log Pow Log  
Kow  
Viscosity, kinematic  
Viscosity, dynamic  
Explosive properties  
Oxidising properties Explosive limits

### 9.2. Other information

Bulk density 1 kg/m<sup>3</sup>

## SECTION 10: Stability and reactivity.

### 10.1. Reactivity

No data available

### 10.2. Chemical stability

Powder  
Light Grey  
No data available  
Not applicable  
No data available  
No data available  
Melting point/range: 200 °C - dec.  
No data available  
Not applicable, decomposition above 600°C  
Not flammable  
Not applicable



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No data available

Not applicable

Not flammable

Not applicable

9.7 hPa at 25 °C

Not applicable

Not applicable (not volatile)

Not explosive

3.603 g/mL at 25 °C No data available

No data availability

No data available

Not applicable

Stable under recommended storage conditions.

### 10.3. Possibility of hazardous reactions

No data available

### 10.4. Conditions to avoid

No further information 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 In the event of fire: see section 5

## SECTION 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 sensitization: No data available

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**Germ cell mutagenicity:**

Rat: Liver, DNA damage

Mouse: DNA damage

**Carcinogenicity:** - Chicken - Parenteral

**Tumorigenic:** Equivocal tumorigenic agent by RTECS criteria. Endocrine: Tumors.

**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

**Additional Information**

RTECS: GL8800000

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 lead to hemolytic anemia and accelerates arteriosclerosis. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

### SECTION 12: Ecological information.

#### 12.1. Acute fish toxicity

Toxicity to fish

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



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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

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

### 12.6. Other adverse effects

Very toxic to aquatic life with long lasting effects.

**SECTION 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.

**SECTION 14: Transport information.**

### 14.1. UN number

ADR/RID: 3077

IMDG: 3077

IATA: 3077





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#### 14.2. UN proper shipping name

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

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

#### 14.3. Transport hazard class(es)

ADR/RID: 9

IMDG: 9

IATA: 9

#### 14.4. Packing group

ADR/RID: III

IMDG: III

IATA: III

#### 14.5. Environmental hazards

ADR/RID: yes

IMDG Marine pollutant: yes IATA: yes

#### 14.6. Special precautions for user

No data available

#### 14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable.

### SECTION 15: Regulatory information.

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

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

#### 15.2. Chemical Safety Assessment.

Exempted from REACH Registration in accordance with Annex V.7

### SECTION 16: Other information.



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Full text of H-Statements referred to under sections 2 and 3.

H302 Harmful if swallowed.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

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