

**Safety data sheet  
according to 1907/2006/EC, Article 31**

revised on: 01.03.2023

Version number 5 (replaces version 4)

Creation Date: 24.11.2016

**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1 Product identifier****Trade name: Copper(II)-sulfate, pentahydrate****Article number:** 2479**CAS Number:**

7758-99-8

**EC number:**

231-847-6

**Index number:**

029-023-00-4

**Registration number**

A registration number is not available for this substance as the substance or its use are exempted from registration according to Article 2 UK REACH Regulation (EC) No 1907/2006, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

**1.2 Relevant identified uses of the substance or mixture and uses advised against****Life cycle stages**

F Formulation or re-packing

IS Use at industrial Sites

**Application of the substance / the mixture**

Industrial use

Reagent for analysis

Laboratory chemicals

**1.3 Details of the supplier of the safety data sheet****Manufacturer/Supplier:**

Th. Geyer GmbH &amp; Co. KG

Dornierstr. 4 – 6

D-71272 Renningen

Tel.: +49(0)7159-1637-0, Fax:+49 (0)7159/18417

www.thgeyer.de

sicherheitsdatenblaetter@thgeyer.de

**Further information obtainable from:** Product management department**1.4 Emergency telephone number:**

National Poisons Information Service

City Hospital

Dudley Road

Birmingham B18 7QH

Tel.:Emergency: (00 44) 87 06 00 62 66

Members of the public seeking specific information on poisons should contact:

In England and Wales: NHS 111 - dial 111

In Scotland: NHS 24 - dial 111

**SECTION 2: Hazards identification****2.1 Classification of the substance or mixture****Classification according to Regulation (EC) No 1272/2008**

GHS05 corrosion

Eye Dam. 1

H318 Causes serious eye damage.

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GHS09 environment

Aquatic Acute 1 H400 Very toxic to aquatic life.

Aquatic Chronic 1 H410 Very toxic to aquatic life with long lasting effects.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

### · 2.2 Label elements

#### · Labelling according to Regulation (EC) No 1272/2008

The substance is classified and labelled according to the GB CLP regulation.

#### · Hazard pictograms



GHS05



GHS07



GHS09

#### · Signal word Danger

#### · Hazard statements

H302 Harmful if swallowed.

H318 Causes serious eye damage.

H410 Very toxic to aquatic life with long lasting effects.

#### · Precautionary statements

P273 Avoid release to the environment.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

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.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

#### · 2.3 Other hazards

#### · Results of PBT and vPvB assessment

· PBT: Not applicable.

· vPvB: Not applicable.

## SECTION 3: Composition/information on ingredients

### · 3.1 Substances

#### · CAS No. Description

CAS: 7758-99-8 Copper(II)-sulfate, pentahydrate

#### · Identification number(s)

· EC number: 231-847-6

· Index number: 029-023-00-4

#### · M-factor

Aquatic Acute: 10

Aquatic Chronic: 1

· Acute toxicity estimate (ATE) values LD50 oral: 481 mg/kg

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### SECTION 4: First aid measures

#### · 4.1 Description of first aid measures

##### · **General information:**

First aider needs to protect himself.

Immediately remove any clothing soiled by the product.

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

##### · **After inhalation:**

Remove person from danger area.

Supply fresh air.

Seek medical treatment in case of complaints.

##### · **After skin contact:**

Flush contaminated skin with soap and plenty of water.

After prolonged contact or any signs of skin changes (redness or other signs of inflammation) seek medical attention.

##### · **After eye contact:**

Protect unharmed eye.

Remove contact lenses

Rinse opened eye for several minutes under running water. Then consult a doctor.

##### · **After swallowing:**

Rinse out mouth and then drink plenty of water.

Seek medical treatment.

A person vomiting while laying on their back should be turned onto their side.

##### · **Information for doctor:** Please observe safety data sheet/label.

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

Gastric or intestinal disorders

Cramp

Nausea

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

Monitor circulation.

If necessary oxygen respiration treatment.

Treat skin and mucous membrane with antihistamine and corticoid preparations.

If swallowed, induce vomiting (if patient is conscious).

If swallowed, gastric irrigation with added, activated carbon.

### SECTION 5: Firefighting measures

#### · **5.1 Extinguishing media**

##### · **Suitable extinguishing agents:**

Use fire extinguishing methods suitable to surrounding conditions.

Carbon dioxide, powder, water spray or alcohol-resistant foam.

##### · **For safety reasons unsuitable extinguishing agents:** No restriction

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

Formation of toxic gases is possible during heating or in case of fire.

Not combustible.

In case of fire, the following can be released:

Sulphur dioxide (SO<sub>2</sub>)

Under certain fire conditions, traces of other toxic gases cannot be excluded.

#### · **5.3 Advice for firefighters** Do not inhale explosion gases or combustion gases.

##### · **Protective equipment:**

Wear self-contained respiratory protective device.

Do not inhale explosion gases or combustion gases.

##### · **Additional information**

Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

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Prevent fire extinguishing water from contaminating surface water or the ground water system.

### SECTION 6: Accidental release measures

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

Ensure adequate ventilation.

Avoid formation of dust.

Avoid contact with eyes and skin.

Evacuate the danger area.

#### · 6.2 Environmental precautions:

Keep contaminated washing water and dispose of appropriately.

Inform respective authorities in case of seepage into water course or sewage system.

Do not allow to enter sewers/surface or ground water.

#### · 6.3 Methods and material for containment and cleaning up:

Dispose contaminated material as waste according to item 13.

Dispose of the material collected according to regulations.

#### · 6.4 Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

### SECTION 7: Handling and storage

#### · 7.1 Precautions for safe handling

Store in cool, dry place in tightly closed receptacles.

Keep away from heat and direct sunlight.

Apply the general protection and hygiene measures for the handling with chemicals.

#### · Information about fire - and explosion protection:

Substance itself does not burn, tuning measures to environment

#### · 7.2 Conditions for safe storage, including any incompatibilities

##### · Storage:

##### · Requirements to be met by storerooms and receptacles:

Prevent any seepage into the ground.

Store only in the original receptacle.

##### · Information about storage in one common storage facility:

Store away from water.

Store away from oxidising agents.

##### · Further information about storage conditions:

Protect from humidity and water.

This product is hygroscopic.

##### · Storage class: 13

#### · 7.3 Specific end use(s) No further relevant information available.

### SECTION 8: Exposure controls/personal protection

#### · 8.1 Control parameters

#### · Ingredients with limit values that require monitoring at the workplace: Not required.

#### · Additional information: The lists valid during the making were used as basis.

#### · 8.2 Exposure controls

##### · Appropriate engineering controls No further data; see item 7.

##### · Individual protection measures, such as personal protective equipment

##### · General protective and hygienic measures:

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

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- Avoid contact with the eyes.
- **Respiratory protection:** Not necessary if room is well-ventilated.
- **Hand protection**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- **Material of gloves**

Information on suitable glove materials is not available at present.

However, experience has shown that the glove materials polychloroprene, nitrile rubber, butyl rubber, fluororubber and polyvinyl chloride are suitable for protection against undissolved solids.

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

- **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

- **Eye/face protection**



Tightly sealed goggles

- **Body protection:**



Protective work clothing (e. g. safety shoes EN ISO 20345, long-sleeved protective working garments).

### SECTION 9: Physical and chemical properties

- **9.1 Information on basic physical and chemical properties**

- **General Information**

- **Physical state**

Solid

- **Colour:**

Blue

- **Odour:**

Characteristic

- **Melting point/freezing point:**

Undetermined.

- **Boiling point or initial boiling point and boiling range**

Undetermined.

- **Flammability**

Product is not flammable.

- **Lower and upper explosion limit**

- **Lower:**

Not determined.

- **Upper:**

Not determined.

- **Flash point:**

Not applicable.

- **Decomposition temperature:**

Not determined.

- **pH**

3.5–4.5

- **Viscosity:**

- **Kinematic viscosity**

Not applicable.

- **Dynamic:**

Not applicable.

- **Solubility**

- **water at 20 °C:**

317 g/l

- **Partition coefficient n-octanol/water (log value)**

Not determined.

- **Vapour pressure:**

Not applicable.

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· <b>Density and/or relative density</b>	
· <b>Density at 20 °C:</b>	2.29 g/cm <sup>3</sup> Not determined.
· <b>Relative density</b>	Not determined.
· <b>Vapour density</b>	Not applicable.
· <b>Particle characteristics</b>	See item 3.
· <b>9.2 Other information</b>	
· <b>Appearance:</b>	
· <b>Form:</b>	Solid material
· <b>Important information on protection of health and environment, and on safety.</b>	
· <b>Auto-ignition temperature:</b>	Not determined.
· <b>Explosive properties:</b>	Product does not present an explosion hazard.
· <b>Molecular weight</b>	249.68 g/mol
· <b>Change in condition</b>	
· <b>Evaporation rate</b>	Not applicable.
· <b>Information with regard to physical hazard classes</b>	
· <b>Explosives</b>	Void
· <b>Flammable gases</b>	Void
· <b>Aerosols</b>	Void
· <b>Oxidising gases</b>	Void
· <b>Gases under pressure</b>	Void
· <b>Flammable liquids</b>	Void
· <b>Flammable solids</b>	Void
· <b>Self-reactive substances and mixtures</b>	Void
· <b>Pyrophoric liquids</b>	Void
· <b>Pyrophoric solids</b>	Void
· <b>Self-heating substances and mixtures</b>	Void
· <b>Substances and mixtures, which emit flammable gases in contact with water</b>	Void
· <b>Oxidising liquids</b>	Void
· <b>Oxidising solids</b>	Void
· <b>Organic peroxides</b>	Void
· <b>Corrosive to metals</b>	Void
· <b>Desensitised explosives</b>	Void

### SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability** Stable with proper storage and handling.
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions** Reacts with alkali (lyes).
- **10.4 Conditions to avoid**  
Heat, flames and sparks  
Protect from humidity.
- **10.5 Incompatible materials:** Avoid contact with other chemicals.
- **10.6 Hazardous decomposition products:** On fire: see chapter 5

### SECTION 11: Toxicological information

- **11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**
- **Acute toxicity** Harmful if swallowed.

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**LD/LC50 values relevant for classification:**

Oral	LD50	481 mg/kg (ATE) 482 mg/kg (rat)
Dermal	LD50	>2,000 mg/kg (rat)

- **Skin corrosion/irritation** Based on available data, the classification criteria are not met.
- **Serious eye damage/irritation** Causes serious eye damage.
- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity** Based on available data, the classification criteria are not met.
- **Reproductive toxicity** Based on available data, the classification criteria are not met.
- **STOT-single exposure** Based on available data, the classification criteria are not met.
- **STOT-repeated exposure** Based on available data, the classification criteria are not met.
- **Aspiration hazard** Based on available data, the classification criteria are not met.
- **11.2 Information on other hazards**
- **Endocrine disrupting properties** Substance is not listed.

### SECTION 12: Ecological information

- **12.1 Toxicity** Very toxic to aquatic organisms with long-term effects.
- **Aquatic toxicity:** May cause long-term adverse effects in the aquatic environment.
- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Endocrine disrupting properties**  
The product does not contain substances with endocrine disrupting properties.
- **12.7 Other adverse effects**
- **Remark:** Very toxic for fish
- **Additional ecological information:**
- **General notes:**  
Also poisonous for fish and plankton in water bodies.  
Very toxic for aquatic organisms  
Water hazard class 3 (German Regulation) (Assessment by list): extremely hazardous for water  
Do not allow product to reach ground water, water course or sewage system, even in small quantities.  
Danger to drinking water if even extremely small quantities leak into the ground.

### SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**  
Observe local (country-specific) regulations and laws  
This material and its container must be disposed of as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulations.
- **Recommendation**  
Must not be disposed together with household garbage. Do not allow product to reach sewage system.  
Chemicals must be disposed of in compliance with the respective national regulations.

**European waste catalogue**

06 00 00	WASTES FROM INORGANIC CHEMICAL PROCESSES
06 04 00	metal-containing wastes other than those mentioned in 06 03
06 04 99	wastes not otherwise specified
HP4	Irritant - skin irritation and eye damage
HP6	Acute Toxicity

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HP14	Ecotoxic
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- **Uncleaned packaging:**

- **Recommendation:**

Dispose of packaging according to regulations on the disposal of packagings.

Packagings that may not be cleansed are to be disposed of in the same manner as the product.

### SECTION 14: Transport information

- **14.1 UN number or ID number**

- **ADR, IMDG, IATA**

UN3077

- **14.2 UN proper shipping name**

- **ADR**

3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE,  
SOLID, N.O.S. (Copper(II)-sulfate, pentahydrate)

- **IMDG, IATA**

ENVIRONMENTALLY HAZARDOUS SUBSTANCE,  
SOLID, N.O.S. (Copper(II)-sulfate, pentahydrate)

- **14.3 Transport hazard class(es)**

- **ADR**



- **Class**

9 (M7) Miscellaneous dangerous substances and articles.

- **Label**

9

- **IMDG, IATA**



- **Class**

9 Miscellaneous dangerous substances and articles.

- **Label**

9

- **14.4 Packing group**

- **ADR, IMDG, IATA**

III

- **14.5 Environmental hazards:**

- **Marine pollutant:**

Harmful to the aquatic environment

- **Special marking (ADR):**

Symbol (fish and tree)

- **Special marking (IATA):**

Symbol (fish and tree)

Symbol (fish and tree)

- **14.6 Special precautions for user**

Warning: Miscellaneous dangerous substances and articles.

- **EMS Number:**

F-A,S-F

- **Stowage Category**

A

- **Stowage Code**

SW23 When transported in BK3 bulk container, see  
7.6.2.12 and 7.7.3.9.

- **14.7 Maritime transport in bulk according to IMO instruments**

Not applicable.

- **Transport/Additional information:**

- **ADR**

- **Limited quantities (LQ)**

5 kg

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· <b>Excepted quantities (EQ)</b>	Code: E1 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 1000 g
· <b>Transport category</b>	3
· <b>Tunnel restriction code</b>	E
· <b>IMDG</b>	
· <b>Limited quantities (LQ)</b>	5 kg
· <b>Excepted quantities (EQ)</b>	Code: E1 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 1000 g
· <b>UN "Model Regulation":</b>	UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (COPPER(II)-SULFATE, PENTAHYDRATE), 9, III

### SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Inventory of Hazardous Chemicals** Substance is not listed.
- **Directive 2012/18/EU**
- **Named dangerous substances - ANNEX I** Substance is not listed.
- **Seveso category E1** Hazardous to the Aquatic Environment
- **Qualifying quantity (tonnes) for the application of lower-tier requirements** 100 t
- **Qualifying quantity (tonnes) for the application of upper-tier requirements** 200 t
- **DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II**  
Substance is not listed.
- **REGULATION (EU) 2019/1148**
- **Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))**  
Substance is not listed.
- **Annex II - REPORTABLE EXPLOSIVES PRECURSORS** Substance is not listed.
- **Regulation (EC) No 273/2004 on drug precursors** Substance is not listed.
- **Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors**  
Substance is not listed.
- **National regulations:**
- **Information about limitation of use:**  
Employment restrictions concerning juveniles must be observed.  
Employment restrictions concerning pregnant and lactating women must be observed.
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

### SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship. Application, use and handling of our products take place out of our control and are solely your responsibility.

- **Department issuing SDS:** Product management
- **Contact:** Product management
- **Version number of previous version:** 4
- **Abbreviations and acronyms:**

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)  
IMDG: International Maritime Code for Dangerous Goods  
IATA: International Air Transport Association

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GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Acute Tox. 4: Acute toxicity – Category 4

Eye Dam. 1: Serious eye damage/eye irritation – Category 1

Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1

Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1

**\* Data compared to the previous version altered.**

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