

Revised on: 12.06.2019

Copper(II) sulfate pentahydrate p.A.

Created on: 12.06.2019

1. Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name: Copper(II) sulfate pentahydrate p.A.

Article number: LC-4758

REACH Registration Number: 01-2119520566-40-XXXX

CAS-No.: 7758-99-8

1.2. Relevant identified uses of the substance or mixture

Identified uses: Reagent for analysis

1.3. Details of the supplier of the safety data sheet

Manufacturer/Supplier:

neoFroxx GmbH

Marie-Curie-Str. 3

D-64683 Einhausen

info@neofroxx.com

Further information obtainable from:

Dep. Quality Control

1.4. Emergency telephone number

+49 (6251) 989 24 - 0 (during normal business hours)

2. Hazards identification

2.1. Classification of the substance or the mixture

Classification (REGULATION (EC) No 1272/2008):

Acute toxicity, Category 4, Oral, H302

Serious eye damage, Category 1, H318

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.

2.2. Label elements

Labelling (REGULATION (EC) No 1272/2008):

Hazard pictograms:



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:

Prevention

P273 Avoid release to the environment.

P280 Wear eye protection.

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Response

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P313 Get medical advice/ attention.

Contains: Copper(II) sulphate pentahydrate

Index-No.: 029-023-00-4

3. Composition / information on ingredients

3.1. Substance

Formula: $\text{CuSO}_4 \cdot 5 \text{H}_2\text{O}$ $\text{CuO}_4\text{S} \cdot 5 \text{H}_2\text{O}$ (Hill)

Index-No.: 029-023-00-4

EC-No.: 231-847-6

Molar mass: 249.68 g/mol

Hazardous components (REGULATION (EC) No 1272/2008)

Chemical name (Concentration): Copper(II) sulphate pentahydrate ($\geq 80\%$ - $\leq 100\%$)

CAS-No.: 7758-99-8

Registration number: 01-2119520566-40-XXXX

Classification:

Serious eye damage, Category 1, H318

Specific target organ toxicity - repeated exposure, Category 2, H373

Chronic aquatic toxicity, Category 2, H411

Acute toxicity, Category 4, H302

Serious eye damage, Category 1, H318

Acute aquatic toxicity, Category 1, H400

Chronic aquatic toxicity, Category 1, H410

M-Factor: 10

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

4. First aid measures

4.1. Description of first aid measures

After inhalation: fresh air. Call in physician.

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower.

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses.

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

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

irritant effects, conjunctivitis, gastric pain, Diarrhoea, Vomiting, collapse, death

Risk of corneal clouding.

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

No information available.

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5. Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media:

For this substance/mixture no limitations of extinguishing agents are given.

5.2. Special hazards arising from the substance or mixture

Not combustible.

Ambient fire may liberate hazardous vapours.

Fire may cause evolution of:

Sulphur oxides

5.3. Advice for firefighters

Special protective equipment for firefighters:

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

Further information:

Suppress (knock down) gases/vapours/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid inhalation of dusts. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders:

Protective equipment see section 8.

6.2. Environmental precautions

Do not let product enter drains.

6.3. Methods and material for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

6.4. Reference to other sections

Indications about waste treatment see section 13.

7. Handling and storage

7.1. Precautions for safe handling:

Advice on safe handling:

Observe label precautions.

Hygiene measures:

Change contaminated clothing. Preventive skin protection recommended. Wash hands after working with substance.

7.2. Conditions for safe storage, including any incompatibilities:

Storage conditions:

Tightly closed. Dry.

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Recommended storage temperature: see product label.

7.3. Specific end use(s)

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

8. Exposure controls / personal protection

8.1. Control parameters

Contains no substances with occupational exposure limit values.

8.2. Exposure controls

Engineering measures:

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

See section 7.1.

Individual protection measures:

Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of the hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the respective supplier.

Eye/face protection:

Tightly fitting safety goggles

Hand protection

full contact:

Glove material: Nitrile rubber

Glove thickness: 0.11 mm

Break through time: > 480 min

splash contact:

Glove material: Nitrile rubber

Glove thickness: 0.11 mm

Break through time: > 480 min

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 741 Dermatril® L (full contact), KCL 741 Dermatril® L (splash contact).

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types.

This recommendation applies only to the product stated in the safety data sheet (>,<) supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Other protective equipment:

protective clothing

Respiratory protection:

required when dusts are generated.

Recommended Filter type: Filter P 2 (acc. to DIN 3181) for solid and liquid particles of harmful substances

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

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Environmental exposure controls:

Do not let product enter drains.

9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

Form: solid

Colour: blue

Odour: odourless

Odour Threshold: Not applicable

pH: 3.5 -4.5 at 50 g/l 20 °C

Melting point: 147 °C

Boiling point/boiling range: No information available

Flash point: does not flash

Evaporation rate: No information available.

Flammability (solid, gas): The product is not flammable.

Lower explosion limit: Not applicable

Upper explosion limit: Not applicable

Vapour pressure: No information available.

Relative vapour density: No information available.

Density: 2.284 g/cm³ at 20 °C

Relative density: No information available.

Water solubility: 317 g/l at 20 °C

Partition coefficient: n-octanol/water: Not applicable for inorganic substances

Auto-ignition temperature: No information available.

Decomposition temperature: 400 - 450 °C

Elimination of water of crystallization: 850 °C (anhydrous substance)

Viscosity, dynamic: No information available.

Explosive properties: No information available.

Oxidizing properties: none

9.2. Other data

Ignition temperature: Not applicable

10. Stability and reactivity

10.1. Reactivity

See section 10.3

10.2. Chemical stability

The product is chemically stable under standard ambient conditions (room temperature).

10.3. Possibility of hazardous reactions

Exothermic reaction with:

Strong oxidizing agents, hydroxylamine, magnesium

10.4. Conditions to avoid

Strong heating (decomposition).

10.5. Incompatible materials

no information available

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10.6. Hazardous decomposition products
in the event of fire: See section 5.

11. Toxicological information

11.1. Information on toxicological effects

Acute oral toxicity:

LD50 Rat: 482 mg/kg

OECD Test Guideline 401

Symptoms: gastric pain, Vomiting, Diarrhoea

Acute inhalation toxicity:

Symptoms: Possible damages:, mucosal irritations

Acute dermal toxicity:

LD50 Rat: > 2,000 mg/kg

OECD Test Guideline 402.

Skin irritation:

Rabbit

Result: No skin irritation

OECD Test Guideline 404

Eye irritation:

Rabbit

Rabbit

Result: Causes serious eye damage.

OECD Test Guideline 405

Causes serious eye damage.

Sensitisation:

Maximisation Test Guinea pig

Result: negative

Method: OECD Test Guideline 406

Germ cell mutagenicity

Genotoxicity in vivo:

Micronucleus test

Mouse

male and female

Oral

Bone marrow

Result: negative (ECHA)

unscheduled DNA synthesis assay

Rat

male

Oral

Liver cells

Result: negative

Method: OECD Test Guideline 486

Genotoxicity in vitro:

Ames test

Salmonella typhimurium

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Result: negative

Method: OECD Test Guideline 471

Carcinogenicity:

This information is not available.

Reproductive toxicity:

This information is not available.

Teratogenicity:

This information is not available.

Specific target organ toxicity - single exposure:

This information is not available.

Specific target organ toxicity - repeated exposure:

This information is not available.

Aspiration hazard:

This information is not available.

11.2. Further information

After absorption:

drop in blood pressure, tachycardia, collapse, acidosis

After a latency period:

death

Metal-fume fever after inhalation of large quantities.

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

12. Ecological information

12.1. Toxicity

No information available.

12.2. Persistence and Degradability

Biodegradability:

The methods for determining the biological degradability are not applicable to inorganic substances.

12.3. Bioaccumulative potential

Partition coefficient: n-octanol/water:

Not applicable for inorganic substances

12.4. Mobility in soil

No information available

12.5. Assessment PBT and MPMB

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

12.6. Other adverse effects

Additional ecological information:

Fungicide

Discharge into the environment must be avoided.

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13. Disposal considerations

13.1. Waste treatment methods

Recommendation:

Chemicals must be disposed of in compliance with the respective national regulations.

Recommendation:

Disposal must be made according to official regulations.

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

Recommended cleansing agents: Water, if necessary together with cleansing agents.

14. Transport information

Land transport (ADR/RID)

14.1 UN number: UN 3077

14.2 Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
(COPPER(II)-SULPHATE)

14.3 Class: 9

14.4 Packing group: III

14.5 Environmentally hazardous: Yes

14.6 Special precautions for user: yes

Tunnel restriction code: -

Packages smaller than or equal to 5 kg / L , not dangerous goods of Class 9

Inland waterway transport (ADN)

Not relevant

Air transport (IATA)

14.1 UN number: UN 3077

14.2 Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
(COPPER(II)-SULPHATE)

14.3 Class: 9

14.4 Packing group: III

14.5 Environmentally hazardous: Yes

14.6 Special precautions for user: no

Packages smaller than or equal to 5 kg / L , not dangerous goods of Class 9

Sea transport (IMDG)

14.1 UN number: UN 3077

14.2 Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
(COPPER(II)-SULPHATE)

14.3 Class: 9

14.4 Packing group: III

14.5 Environmentally hazardous: Yes

14.6 Special precautions for user: yes

EmS: F-A S-F

Packages smaller than or equal to 5 kg / L , not dangerous goods of Class 9

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

Not relevant

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15. Regulatory information

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

EU regulations

Major Accident Hazard: SEVESO III

Legislation: ENVIRONMENTAL HAZARDS

E1

Quantity 1: 100 t

Quantity 2: 200 t

Occupational restrictions.

Take note of Dir 94/33/EC on the protection of young people at work. Observe work restrictions regarding maternity protection in accordance to Dir 92/85/EEC or stricter national regulations where applicable.

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer:

not regulated

Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC:

not regulated

Substances of very high concern (SVHC):

This product does not contain substances of very high concern according to Regulation (EC) No 1907/2006 (REACH), Article 57 above the respective regulatory concentration limit of $\geq 0.1\%$ (w/w).

National legislation

Storage class: 10 – 13

15.2. Chemical safety assessment

For this product a chemical safety assessment was not carried out.

16. Other information

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

H302 Harmful if swallowed.

H318 Causes serious eye damage.

H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

Training advice

Provide adequate information, instruction and training for operators.

Labelling

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

Prevention

P273 Avoid release to the environment.

P280 Wear eye protection.

Response

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

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Material Safety Data Sheet

According to 1907/2006/EC, Article 31

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

P313 Get medical advice/ attention.

Contains: Copper(II) sulphate pentahydrate



Material Safety Data Sheet

According to 1907/2006/EC, Article 31

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Abbreviations and acronyms:

ADR: Accord européen sur le transport 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

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

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