

Safety Data Sheet

according to UK REACH Regulation

Kupfer-Standardlösung 10 g Cu/kg Kupfer(II)-sulfat in Wasser

Revision date: 11.05.2023

Product code: 34428

Page 1 of 11

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

1.1. Product identifier

Kupfer-Standardlösung 10 g Cu/kg Kupfer(II)-sulfat in Wasser

UFI: 2TA2-E3U5-500V-J3MC

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

Use of the substance/mixture

Laboratory chemicals

Industrial uses: Uses of substances as such or in preparations at industrial sites

Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

Uses advised against

Do not use for private purposes (household).

1.3. Details of the supplier of the safety data sheet

| | | |
|-------------------------|----------------------------------|------------------------------|
| Company name: | AnalytiChem GmbH | |
| Street: | Stempelstraße 6 | |
| Place: | D-47167 Duisburg | |
| Telephone: | 0203/5194-0 | Telefax: 0203/5194-290 |
| E-mail: | info@analytichem.de | |
| Contact person: | Abteilung Produktsicherheit | Telephone: 0203/5194-107/117 |
| E-mail: | produktsicherheit@analytichem.de | |
| Internet: | www.analytichem.de | |
| Responsible Department: | Abteilung Produktsicherheit | |

1.4. Emergency telephone number:

For Hazardous Materials [or Dangerous Goods] Incidents Spill, Leak, Fire, Exposure, or Accident Call CHEMTREC Day or Night Within USA and Canada: 1-800-424-9300 Outside USA and Canada: +1 703-741-5970 (collect calls accepted)

Further Information

inapplicable, this product is a mixture REACH registration number see section 3

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GB CLP Regulation

Eye Dam. 1; H318
Aquatic Acute 1; H400
Aquatic Chronic 2; H411

Full text of hazard statements: see SECTION 16.

2.2. Label elements

GB CLP Regulation

Hazard components for labelling

copper sulphate pentahydrate

Signal word: Danger

Pictograms:



Hazard statements

H318 Causes serious eye damage.

Safety Data Sheet

according to UK REACH Regulation

Kupfer-Standardlösung 10 g Cu/kg Kupfer(II)-sulfat in Wasser

Revision date: 11.05.2023

Product code: 34428

Page 2 of 11

H400 Very toxic to aquatic life.
H411 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.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER/doctor.
P391 Collect spillage.
P501 Dispose of contents/container to hazardous or special waste collection point.

2.3. Other hazards

No data available

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Chemical characterization

Mixtures in aqueous solution

Hazardous components

| CAS No | Chemical name | | | Quantity |
|-----------|--|--------------|------------------|-----------|
| | EC No | Index No | REACH No | |
| | Classification (GB CLP Regulation) | | | |
| 7758-99-8 | copper sulphate pentahydrate | | | 1 - < 5 % |
| | 231-847-6 | 029-023-00-4 | 01-2119520566-40 | |
| | Acute Tox. 4, Skin Irrit. 2, Eye Dam. 1, Aquatic Acute 1, Aquatic Chronic 1; H302 H315 H318 H400 H410 | | | |

Full text of H and EUH statements: see section 16.

Specific Conc. Limits, M-factors and ATE

| CAS No | EC No | Chemical name | Quantity |
|-----------|--|------------------------------|-----------|
| | Specific Conc. Limits, M-factors and ATE | | |
| 7758-99-8 | 231-847-6 | copper sulphate pentahydrate | 1 - < 5 % |
| | dermal: LD50 = > 2000 mg/kg; oral: ATE 481 mg/kg Aquatic Acute 1; H400: M=10 Aquatic Chronic 1; H410: M=1 | | |

Further Information

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 = 0.1 % (w/w).

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

No data available

After inhalation

Provide fresh air.
Call a doctor if you feel unwell.

After contact with skin

Wash immediately with: Water
Take off immediately all contaminated clothing and wash it before reuse.
In case of skin irritation, consult a physician.

After contact with eyes

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids

Safety Data Sheet

according to UK REACH Regulation

Kupfer-Standardlösung 10 g Cu/kg Kupfer(II)-sulfat in Wasser

Revision date: 11.05.2023

Product code: 34428

Page 3 of 11

apart and consult an ophthalmologist.
Remove contact lenses, if present and easy to do. Continue rinsing.

After ingestion

Rinse mouth immediately and drink plenty of water.
Call a physician immediately.

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

Irritant

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

Co-ordinate fire-fighting measures to the fire surroundings.

Unsuitable extinguishing media

no restriction

5.2. Special hazards arising from the substance or mixture

Non-combustible liquids
Hazardous combustion products
In case of fire may be liberated:
Sulphur oxides

5.3. Advice for firefighters

In case of fire: Wear self-contained breathing apparatus.
In case of fire and/or explosion do not breathe fumes.
Avoid contact with skin, eyes and clothes.

Additional information

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.
Move undamaged containers from immediate hazard area if it can be done safely.
Use water spray jet to protect personnel and to cool endangered containers.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General advice

Do not breathe vapour/aerosol.

For non-emergency personnel

Provide adequate ventilation.
Use personal protection equipment.
Avoid contact with skin, eyes and clothes.
Remove persons to safety.
Emergency procedures
Consult an expert
Do not breathe dust/fume/gas/mist/vapours/spray.

For emergency responders

Precautionary statements For emergency responders : Personal protection equipment: see section 8

6.2. Environmental precautions

Do not allow to enter into surface water or drains.

6.3. Methods and material for containment and cleaning up

For containment

Cover drains.
Prevent spread over a wide area (e.g. by containment or oil barriers).

Safety Data Sheet

according to UK REACH Regulation

Kupfer-Standardlösung 10 g Cu/kg Kupfer(II)-sulfat in Wasser

Revision date: 11.05.2023

Product code: 34428

Page 4 of 11

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents).
Collect in closed and suitable containers for disposal.

For cleaning up

Clean contaminated articles and floor according to the environmental legislation.

Other information

Provide adequate ventilation.
Do not breathe dust/fume/gas/mist/vapours/spray.
Wear breathing apparatus if exposed to vapours/dusts/aerosols.

6.4. Reference to other sections

Safe handling: see section 7
Personal protection equipment: see section 8
Disposal: see section 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

Read label before use. Handle and open container with care.
When using do not eat, drink, smoke, sniff. Use personal protection equipment.
Provide adequate ventilation. Avoid contact with skin, eyes and clothes.
Do not breathe vapour/aerosol.

Advice on protection against fire and explosion

Usual measures for fire prevention.

Advice on general occupational hygiene

Keep away from food, drink and animal feedingstuffs. Remove contaminated, saturated clothing immediately.
Draw up and observe skin protection programme. Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat or drink. Avoid: aerosol or mist formation Do not breathe vapour/aerosol.

Further information on handling

Draw up and observe skin protection programme.
Wash hands and face before breaks and after work and take a shower if necessary.
Take off immediately all contaminated clothing and wash it before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Unsuitable container/equipment material: Metal

Hints on joint storage

national regulations

Further information on storage conditions

Keep container tightly closed.

7.3. Specific end use(s)

Laboratory chemicals

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Safety Data Sheet

according to UK REACH Regulation

Kupfer-Standardlösung 10 g Cu/kg Kupfer(II)-sulfat in Wasser

Revision date: 11.05.2023

Product code: 34428

Page 5 of 11

PNEC values

| CAS No | Substance | Value |
|--|------------------------------|-------------|
| Environmental compartment | | |
| 7758-99-8 | copper sulphate pentahydrate | |
| Freshwater | | 0,0078 mg/l |
| Marine water | | 0,0052 mg/l |
| Freshwater sediment | | 87 mg/kg |
| Marine sediment | | 676 mg/kg |
| Micro-organisms in sewage treatment plants (STP) | | 0,23 mg/l |
| Soil | | 65 mg/kg |

8.2. Exposure controls

Appropriate engineering controls

Technical measures and the application of suitable work processes have priority over personal protection equipment.

If handled uncovered, arrangements with local exhaust ventilation have to be used.

Individual protection measures, such as personal protective equipment

Eye/face protection

goggles

Wear eye/face protection.

Hand protection

Suitable examples are gloves of KCL GmbH, D-36124 Eichenzell, e-mail: vertrieb@kcl.de with the following specification (test according to EN 374):

By long-term hand contact

Recommended glove articles: KCL 741 Dermatril® L

Recommended material: NBR (Nitrile rubber) 0,11 mm

Wearing time with permanent contact: > 480 min

By short-term hand contact

Recommended glove articles: KCL 741 Dermatril® L

Recommended material: NBR (Nitrile rubber) 0,11mm

Wearing time with occasional contact (splashes): > 480 min

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).

Skin protection

Wear suitable protective clothing. Take off immediately all contaminated clothing.

Wash hands before breaks and after work.

Respiratory protection

Respiratory protection necessary at: aerosol or mist formation

Thermal hazards

No data available

Environmental exposure controls

Do not allow to enter into surface water or drains.

Safety Data Sheet

according to UK REACH Regulation

Kupfer-Standardlösung 10 g Cu/kg Kupfer(II)-sulfat in Wasser

Revision date: 11.05.2023

Product code: 34428

Page 6 of 11

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

| | | |
|---|-------------------|--------------------------|
| Physical state: | Liquid | |
| Colour: | blue | |
| Odour: | odourless | |
| Odour threshold: | No data available | |
| Melting point/freezing point: | | No data available |
| Boiling point or initial boiling point and boiling range: | | No data available |
| Flammability: | | No data available |
| Lower explosion limits: | | No data available |
| Upper explosion limits: | | No data available |
| Flash point: | | No data available |
| Auto-ignition temperature: | | No data available |
| Decomposition temperature: | | No data available |
| pH-Value: | | 4,4 |
| Viscosity / kinematic: | | No data available |
| Water solubility: | | completely miscible |
| Solubility in other solvents | | |
| No data available | | |
| Dissolution rate: | | No data available |
| Partition coefficient n-octanol/water: | | No data available |
| Dispersion stability: | | No data available |
| Vapour pressure: | | No data available |
| Vapour pressure: | | No data available |
| Density: | | 1,0241 g/cm ³ |
| Relative density: | | No data available |
| Bulk density: | | No data available |
| Relative vapour density: | | No data available |
| Particle characteristics: | | No data available |

9.2. Other information

Information with regard to physical hazard classes

| | |
|---------------------------|-------------------|
| Explosive properties | |
| No data available | |
| Sustaining combustion: | No data available |
| Self-ignition temperature | |
| Solid: | No data available |
| Gas: | No data available |
| Oxidizing properties | |
| No data available | |

Other safety characteristics

| | |
|--------------------------|-------------------|
| Evaporation rate: | No data available |
| Solvent separation test: | No data available |
| Solvent content: | 0 |
| Solid content: | 0 |
| Sublimation point: | No data available |
| Softening point: | No data available |
| Pour point: | No data available |
| No data available: | |
| Viscosity / dynamic: | No data available |
| Flow time: | No data available |

Safety Data Sheet

according to UK REACH Regulation

Kupfer-Standardlösung 10 g Cu/kg Kupfer(II)-sulfat in Wasser

Revision date: 11.05.2023

Product code: 34428

Page 7 of 11

Further Information

Corrosive to metals.

SECTION 10: Stability and reactivity

10.1. Reactivity

No data available

10.2. Chemical stability

The product is stable under storage at normal ambient temperatures.

10.3. Possibility of hazardous reactions

No data available

10.4. Conditions to avoid

No data available

10.5. Incompatible materials

Metal

10.6. Hazardous decomposition products

In case of fire may be liberated:

SECTION 5: Firefighting measures

Further information

No data available

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in GB CLP Regulation

Toxicokinetics, metabolism and distribution

There are no data available on the preparation/mixture itself.

Acute toxicity

Based on available data, the classification criteria are not met.

ATEmix calculated

ATE (oral) 12177 mg/kg; ATE (dermal) > 2000 mg/kg; ATE (inhalation vapour) > 20 mg/l; ATE (inhalation dust/mist) > 5 mg/l

| CAS No | Chemical name | | | | |
|-----------|------------------------------|-------------------|---------|---------------------|--------------------|
| | Exposure route | Dose | Species | Source | Method |
| 7758-99-8 | copper sulphate pentahydrate | | | | |
| | oral | ATE 481 mg/kg | | | |
| | dermal | LD50 > 2000 mg/kg | Rat | Study report (1993) | OECD Guideline 402 |

Irritation and corrosivity

Causes serious eye damage.

Skin corrosion/irritation: Based on available data, the classification criteria are not met.

Sensitising effects

Based on available data, the classification criteria are not met.

Carcinogenic/mutagenic/toxic effects for reproduction

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.

Safety Data Sheet

according to UK REACH Regulation

Kupfer-Standardlösung 10 g Cu/kg Kupfer(II)-sulfat in Wasser

Revision date: 11.05.2023

Product code: 34428

Page 8 of 11

Aspiration hazard

Based on available data, the classification criteria are not met.

Information on likely routes of exposure

There are no data available on the preparation/mixture itself.

Specific effects in experiment on an animal

There are no data available on the preparation/mixture itself.

Additional information on tests

There are no data available on the preparation/mixture itself.

Practical experience

There are no data available on the preparation/mixture itself.

11.2. Information on other hazards

Endocrine disrupting properties

There are no data available on the preparation/mixture itself.

Other information

There are no data available on the preparation/mixture itself.

Further information

There are no data available on the preparation/mixture itself.

SECTION 12: Ecological information

12.1. Toxicity

Very toxic to aquatic life.

Toxic to aquatic life with long lasting effects.

| CAS No | Chemical name | | | | | |
|-----------|------------------------------|---------------|-----------|---------|--|---|
| | Aquatic toxicity | Dose | [h] [d] | Species | Source | Method |
| 7758-99-8 | copper sulphate pentahydrate | | | | | |
| | Acute fish toxicity | LC50 mg/l | 0,193 | 96 h | Pimephales promelas | Study report (1996) measurements were conducted by standard |
| | Acute algae toxicity | ErC50 mg/l | 0,152 | 72 h | Pseudokirchneriella subcapitata | Publication (2005) OECD Guideline 201 |
| | Acute crustacea toxicity | EC50 mg/l | 0,007 | 48 h | Daphnia magna | Study report (1978) - Test were conducted on Daphnia magna t |
| | Fish toxicity | NOEC mg/l | 0,123 | 12 d | Atherinops affinis | Mar. Environ. Res. 31: 17-35 (1991) Three tests are reported, designed to de |
| | Algae toxicity | NOEC mg/l | 0,0102 | 19 d | other aquatic plant: giant kelp Macrocystis pyrife | Mar. Ecol. Prog. Ser. 68: 147 - 156 (199) Tests were conducted to determine the ef |
| | Crustacea toxicity | NOEC mg/l | 0,033 | 14 d | Penaeus mergulensis and Penaeus monodon | Bull. Environ. Contain. Toxicol. (1995) The effects of dissolved copper on the g |

12.2. Persistence and degradability

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

12.3. Bioaccumulative potential

There are no data available on the mixture itself.

BCF

| CAS No | Chemical name | BCF | Species | Source |
|-----------|------------------------------|-----------|-----------------|----------------------|
| 7758-99-8 | copper sulphate pentahydrate | 0,02 - 20 | Crangon crangon | Symp. Biologica. Hun |

Safety Data Sheet

according to UK REACH Regulation

Kupfer-Standardlösung 10 g Cu/kg Kupfer(II)-sulfat in Wasser

Revision date: 11.05.2023

Product code: 34428

Page 9 of 11

12.4. Mobility in soil

There are no data available on the mixture itself.

12.5. Results of PBT and vPvB assessment

The substances in the mixture do not meet the PBT/vPvB criteria according to UK REACH.

12.6. Endocrine disrupting properties

This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.

12.7. Other adverse effects

Discharge into the environment must be avoided.

Further information

Do not allow to enter into surface water or drains.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal recommendations

Waste disposal according to directive 2008/98/EC, covering waste and dangerous waste.

Send to a physico-chemical treatment facility under observation of official regulations.

Do not empty into drains.

Contaminated packaging

Handle contaminated packages in the same way as the substance itself.

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

SECTION 14: Transport information

Land transport (ADR/RID)

| | |
|--|--|
| <u>14.1. UN number or ID number:</u> | UN 3082 |
| <u>14.2. UN proper shipping name:</u> | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (copper sulphate) |
| <u>14.3. Transport hazard class(es):</u> | 9 |
| <u>14.4. Packing group:</u> | III |
| Hazard label: | 9 |
| Classification code: | M6 |
| Special Provisions: | 274 335 375 601 |
| Limited quantity: | 5 L |
| Excepted quantity: | E1 |
| Transport category: | 3 |
| Hazard No: | 90 |
| Tunnel restriction code: | - |

Inland waterways transport (ADN)

| | |
|--|--|
| <u>14.1. UN number or ID number:</u> | UN 3082 |
| <u>14.2. UN proper shipping name:</u> | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (copper sulphate) |
| <u>14.3. Transport hazard class(es):</u> | 9 |
| <u>14.4. Packing group:</u> | III |
| Hazard label: | 9 |
| Classification code: | M6 |
| Special Provisions: | 274 335 375 601 |
| Limited quantity: | 5 L |
| Excepted quantity: | E1 |

Marine transport (IMDG)

Safety Data Sheet

according to UK REACH Regulation

Kupfer-Standardlösung 10 g Cu/kg Kupfer(II)-sulfat in Wasser

Revision date: 11.05.2023

Product code: 34428

Page 10 of 11

| | |
|--|--|
| 14.1. UN number or ID number: | UN 3082 |
| 14.2. UN proper shipping name: | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (copper sulphate) |
| 14.3. Transport hazard class(es): | 9 |
| 14.4. Packing group: | III |
| Hazard label: | 9 |
| Special Provisions: | 274 335 969 |
| Limited quantity: | 5 L |
| Excepted quantity: | E1 |
| EmS: | F-A, S-F |

Air transport (ICAO-TI/IATA-DGR)

| | |
|--|--|
| 14.1. UN number or ID number: | UN 3082 |
| 14.2. UN proper shipping name: | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (copper sulphate) |
| 14.3. Transport hazard class(es): | 9 |
| 14.4. Packing group: | III |
| Hazard label: | 9 |
| Special Provisions: | A97 A158 A197 A215 |
| Limited quantity Passenger: | 30 kg G |
| Passenger LQ: | Y964 |
| Excepted quantity: | E1 |
| IATA-packing instructions - Passenger: | 964 |
| IATA-max. quantity - Passenger: | 450 L |
| IATA-packing instructions - Cargo: | 964 |
| IATA-max. quantity - Cargo: | 450 L |

14.5. Environmental hazards

| | |
|-----------------------------|-----------------|
| ENVIRONMENTALLY HAZARDOUS: | Yes |
| Danger releasing substance: | copper sulphate |

SECTION 15: Regulatory information

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

EU regulatory information

Restrictions on use (REACH, annex XVII):

Entry 3, Entry 75

Information according to 2012/18/EU (SEVESO III): E1 Hazardous to the Aquatic Environment

National regulatory information

Employment restrictions: Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC).

Water hazard class (D): 3 - highly hazardous to water

SECTION 16: Other information

Abbreviations and acronyms

Acute Tox
Skin Irrit
Eye Dam
Aquatic Acute
Aquatic Chronic

Safety Data Sheet

according to UK REACH Regulation

Kupfer-Standardlösung 10 g Cu/kg Kupfer(II)-sulfat in Wasser

Revision date: 11.05.2023

Product code: 34428

Page 11 of 11

Classification for mixtures and used evaluation method according to GB CLP Regulation

| Classification | Classification procedure |
|-------------------------|--------------------------|
| Eye Dam. 1; H318 | Calculation method |
| Aquatic Acute 1; H400 | Calculation method |
| Aquatic Chronic 2; H411 | Calculation method |

Relevant H and EUH statements (number and full text)

| | |
|------|---|
| H302 | Harmful if swallowed. |
| H315 | Causes skin irritation. |
| H318 | Causes serious eye damage. |
| H400 | Very toxic to aquatic life. |
| H410 | Very toxic to aquatic life with long lasting effects. |
| H411 | Toxic to aquatic life with long lasting effects. |

Further Information

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material. The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights. The receiver of our product is singularly responsible for adhering to existing laws and regulations.

(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)