

according to Regulation (EC) No 1907/2006

Kupfersulfatlösung 40 g CuSO4*5 H2O/l in Schwefelsäure 96% 100ml/l

Revision date: 22.04.2024 Product code: 31454 Page 1 of 12

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

1.1. Product identifier

Kupfersulfatlösung 40 g CuSO4*5 H2O/l in Schwefelsäure 96% 100ml/l

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

ACD

Street: Stempelstraße 6 Place: D-47167 Duisburg

0203/5194-0 Telephone: Telefax: 0203/5194-290

E-mail: info@analytichem.de

Abteilung Produktsicherheit Contact person: Telephone: 0203/5194-107/117

produktsicherheit@analytichem.de F-mail:

Internet: www.analytichem.de Responsible Department: Abteilung Produktsicherheit

1.4. Emergency telephone For Hazardous Materials [or Dangerous Goods] Incidents Spill, Leak, Fire,

Exposure, or Accident Call CHEMTREC Day or Night Within USA and Canada: number:

1-800-424-9300 Outside USA and Canada: +1 703-741-5970 (collect calls

accepted)

Further Information

This product is a mixture. REACH Registration Number see section 3.

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

Met. Corr. 1; H290 Skin Corr. 1A; H314 Eve Dam. 1; H318 Aquatic Acute 1; H400 Aquatic Chronic 1; H410

Full text of hazard statements: see SECTION 16.

2.2. Label elements

Regulation (EC) No 1272/2008

Hazard components for labelling

sulphuric acid

copper sulphate pentahydrate Signal word: Danger

Pictograms:







Safety Data Sheet

according to Regulation (EC) No 1907/2006

Kupfersulfatlösung 40 g CuSO4*5 H2O/l in Schwefelsäure 96% 100ml/l

Revision date: 22.04.2024 Product code: 31454 Page 2 of 12

Hazard statements

H290 May be corrosive to metals.

H314 Causes severe skin burns and eye damage.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

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

protection.

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with

water or shower.

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.

2.3. Other hazards

No data available

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Chemical characterization

Mixtures in aqueous solution

Relevant ingredients

CAS No	Chemical name			Quantity	
	EC No	Index No	REACH No		
	Classification (Regulation (EC) No 1272/2008)				
7664-93-9	sulphuric acid				
	231-639-5	016-020-00-8	01-2119458838-20		
	Met. Corr. 1, Skin Corr. 1A, Eye Dam. 1; H290 H314 H318				
7758-99-8	copper sulphate pentahydrate				
	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	
7664-93-9	231-639-5	sulphuric acid	15 - < 20 %
	oral: LD50 = 2140 mg/kg Skin Corr. 1A; H314: >= 15 - 100 Skin Irrit. 2; H315: >= 5 - < 15 Eye Irrit. 2; H319: >= 5 - < 15		
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



Safety Data Sheet

according to Regulation (EC) No 1907/2006

Kupfersulfatlösung 40 g CuSO4*5 H2O/I in Schwefelsäure 96% 100ml/I

Revision date: 22.04.2024 Product code: 31454 Page 3 of 12

General information

Avoid contact with skin, eyes and clothes.

Take off immediately all contaminated clothing.

After inhalation

Provide fresh air.

Call a physician immediately.

After contact with skin

Wash immediately with: Water

Take off immediately all contaminated clothing and wash it before reuse.

Call a physician immediately.

After contact with eyes

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist.

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

Protect uninjured eye.

After ingestion

Rinse mouth immediately and drink plenty of water.

Do NOT induce vomiting. Do not allow a neutralisation agent to be drunk.

Call a physician immediately.

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

Irritant

Causes burns.

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

Metal oxide smoke, toxic

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

Corrosive to metals.



according to Regulation (EC) No 1907/2006

Kupfersulfatlösung 40 g CuSO4*5 H2O/I in Schwefelsäure 96% 100ml/I

Revision date: 22.04.2024 Product code: 31454 Page 4 of 12

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).

Collect in closed and suitable containers for disposal.

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents).

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. Use extractor hood (laboratory).

Provide adequate ventilation.

Avoid contact with skin, eyes and clothes.

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

Keep container tightly closed.



according to Regulation (EC) No 1907/2006

Kupfersulfatlösung 40 g CuSO4*5 H2O/l in Schwefelsäure 96% 100ml/l

Revision date: 22.04.2024 Product code: 31454 Page 5 of 12

Corrosive to metals.

Unsuitable container/equipment material: Metal

Further information on storage conditions

The product develops hydrogen in an aqueous solution in contact with metals.

7.3. Specific end use(s)

Laboratory chemicals

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

CAS No	Substance	ppm	mg/m³	fib/cm³	Category	Origin
7664-93-9	Sulphuric acid	-	0.05		TWA (8 h)	

DNEL/DMEL values

CAS No	Substance				
DNEL type		Exposure route	Effect	Value	
7664-93-9	sulphuric acid				
Worker DNEL, long-term		inhalation	local	0,05 mg/m³	
Worker DNEL, acute		inhalation	local	0,1 mg/m³	

PNEC values

CAS No	Substance		
Environmental	Environmental compartment		
7664-93-9	sulphuric acid		
Freshwater		0,003 mg/l	
Marine water		0 mg/l	
Freshwater sec	iment	0,002 mg/kg	
Marine sediment 0,002 mg/			
Micro-organisms in sewage treatment plants (STP) 8,8 mg/l		8,8 mg/l	
7758-99-8	copper sulphate pentahydrate		
Freshwater 0,0078		0,0078 mg/l	
Marine water		0,0052 mg/l	
Freshwater sediment 87		87 mg/kg	
Marine sediment 676		676 mg/kg	
Micro-organisms in sewage treatment plants (STP) 0,23 mg		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.



according to Regulation (EC) No 1907/2006

Kupfersulfatlösung 40 g CuSO4*5 H2O/I in Schwefelsäure 96% 100ml/I

Revision date: 22.04.2024 Product code: 31454 Page 6 of 12

Hand protection

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

Skin protection

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

Wash hands before breaks and after work.

The choice of body protection depends on the concentration and quantity of hazardous substances. The chemical resistance of protective agents must be clarified with their suppliers.

Respiratory protection

Wear breathing apparatus if exposed to vapours/dusts/aerosols.

The entrepeneur 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.

Environmental exposure controls

Do not allow to enter into surface water or drains.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state: Liquid
Colour: blue
Odour: odourless

Melting point/freezing point:

Boiling point or initial boiling point and

No data available

No data available

boiling range:

Flammability: No data available Lower explosion limits: No data available Upper explosion limits: No data available No data available Flash point: Auto-ignition temperature: No data available Decomposition temperature: No data available acidic pH-Value: Viscosity / kinematic: No data available Water solubility: completely miscible

Solubility in other solvents

No data available

Partition coefficient n-octanol/water:

Vapour pressure:

No data available

Vapour pressure:

No data available

No data available

Density:

ca. 1,1 g/cm³

Bulk density:

No data available

Relative vapour density:

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



according to Regulation (EC) No 1907/2006

Kupfersulfatlösung 40 g CuSO4*5 H2O/l in Schwefelsäure 96% 100ml/l

Revision date: 22.04.2024 Product code: 31454 Page 7 of 12

Oxidizing properties

No data available

Other safety characteristics

Evaporation rate:

Solvent separation test:

No data available

Solvent content:

Solid content:

Sublimation point:

Softening point:

No data available

Pour point:

No data available

No data available

No data available

No data available:

Viscosity / dynamic: No data available Flow time: No data available

Further Information
No data available

SECTION 10: Stability and reactivity

10.1. Reactivity

Corrosive to metals.

10.2. Chemical stability

No data available

10.3. Possibility of hazardous reactions

Alkali (lye)

The product develops hydrogen in an aqueous solution in contact with metals.

10.4. Conditions to avoid

No data available

10.5. Incompatible materials

Metal

The product develops hydrogen in an aqueous solution in contact with metals.

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 Regulation (EC) No 1272/2008

Acute toxicity

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

ATEmix calculated

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



according to Regulation (EC) No 1907/2006

Kupfersulfatlösung 40 g CuSO4*5 H2O/I in Schwefelsäure 96% 100ml/I

Revision date: 22.04.2024 Product code: 31454 Page 8 of 12

CAS No	Chemical name					
	Exposure route	Dose	Species	Source	Method	
7664-93-9	sulphuric acid	sulphuric acid				
	oral	LD50 2140 mg/kg	Rat	1969 Sep-Oct; 30(5):	The study was performed as part of a ser	
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

Skin corrosion/irritation: Causes severe skin burns and eye damage. Serious eye damage/eye irritation: Causes serious eye damage.

Sensitising effects

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

Carcinogenic/mutagenic/toxic effects for reproduction

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.

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

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



Safety Data Sheet

according to Regulation (EC) No 1907/2006

Kupfersulfatlösung 40 g CuSO4*5 H2O/l in Schwefelsäure 96% 100ml/l

Revision date: 22.04.2024 Product code: 31454 Page 9 of 12

CAS No	Chemical name							
	Aquatic toxicity	Dose		[h] [d]	Species	Source	Method	
7664-93-9	sulphuric acid							
	Acute algae toxicity	ErC50 mg/l	> 100	72 h	Desmodesmus subspicatus	Study report (2009)	OECD Guideline 201	
	Acute crustacea toxicity	EC50 mg/l	> 100	48 h	Daphnia magna	Study report (2009)	OECD Guideline 202	
	Fish toxicity	NOEC mg/l	0,025	65 d	Jordanella floridae	Water Research Vol. 11, 612 - 626, 1977	Groups of sexually mature flagfish	
7758-99-8	copper sulphate pentahyo	drate						
	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		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

There are no data available on the mixture itself.

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

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 REACH, annex XIII.

There are no data available on the mixture itself.

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.

Further information

Do not allow to enter into surface water or drains.

Discharge into the environment must be avoided.

SECTION 13: Disposal considerations

13.1. Waste treatment methods



according to Regulation (EC) No 1907/2006

Kupfersulfatlösung 40 g CuSO4*5 H2O/I in Schwefelsäure 96% 100ml/I

Revision date: 22.04.2024 Product code: 31454 Page 10 of 12

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 allow to enter into surface water or 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.

Dispose of waste according to "Kreislaufwirtschafts- und Abfallgesetz (KrW-/AbfG)".

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SECTION 14: Transport information

Land transport (ADR/RID)

14.1. UN number or ID number: UN 3264

14.2. UN proper shipping name: CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (sulphuric acid,

copper sulphate)

14.3. Transport hazard class(es):814.4. Packing group:IIHazard label:8Classification code:C1Special Provisions:274Limited quantity:1 LExcepted quantity:E2Transport category:2

Hazard No: Tunnel restriction code:

Inland waterways transport (ADN)

14.1. UN number or ID number: UN 3264

14.2. UN proper shipping name: CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (sulphuric acid,

copper sulphate)

14.3. Transport hazard class(es):814.4. Packing group:IIHazard label:8Classification code:C1Special Provisions:274Limited quantity:1 LExcepted quantity:E2

Marine transport (IMDG)

14.1. UN number or ID number: UN 3264

14.2. UN proper shipping name: CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (sulphuric acid,

copper sulphate)

14.3. Transport hazard class(es):814.4. Packing group:IIHazard label:8Special Provisions:274Limited quantity:1 LExcepted quantity:E2EmS:F-A, S-B

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number or ID number: UN 3264

14.2. UN proper shipping name: CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (sulphuric acid,

copper sulphate)

14.3. Transport hazard class(es): 8



according to Regulation (EC) No 1907/2006

Kupfersulfatlösung 40 g CuSO4*5 H2O/I in Schwefelsäure 96% 100ml/I

Revision date: 22.04.2024 Product code: 31454 Page 11 of 12

14.4. Packing group:IIHazard label:8Special Provisions:A3 A803Limited quantity Passenger:0.5 LPassenger LQ:Y840Excepted quantity:E2

IATA-packing instructions - Passenger:851IATA-max. quantity - Passenger:1 LIATA-packing instructions - Cargo:855IATA-max. quantity - Cargo:30 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

Marketing and use of explosives precursors (Regulation (EU) 2019/1148):

Acquisition, introduction, possession or use of this product by the general public is restricted by Regulation (EU) 2019/1148. All suspicious transactions, and significant disappearances and thefts should be reported to the relevant national contact point.

National regulatory information

Water hazard class (D): 2 - obviously hazardous to water

SECTION 16: Other information

Abbreviations and acronyms

Met. Corr: Substance or mixture corrosive to metals

Acute Tox: Acute toxicity Skin Corr: Skin corrosion Skin Irrit: Skin irritation Eye Dam: Eye damage

Aquatic Acute: Acute aquatic hazard Aquatic Chronic: Chronic aquatic hazard

Classification for mixtures and used evaluation method according to Regulation (EC) No 1272/2008 [CLP]

Classification	Classification procedure
Met. Corr. 1; H290	On basis of test data
Skin Corr. 1A; H314	Calculation method
Eye Dam. 1; H318	Calculation method
Aquatic Acute 1; H400	Calculation method
Aquatic Chronic 1; H410	Calculation method

Relevant H and EUH statements (number and full text)

H290	May be corrosive to metals.
H302	Harmful if swallowed.

H314 Causes severe skin burns and eye damage.

H315 Causes skin irritation.
H318 Causes serious eye damage.
H400 Very toxic to aquatic life.



Safety Data Sheet

according to Regulation (EC) No 1907/2006

Kupfersulfatlösung 40 g CuSO4*5 H2O/l in Schwefelsäure 96% 100ml/l

Revision date: 22.04.2024 Product code: 31454 Page 12 of 12

H410

Very toxic to aquatic life with long lasting effects.

Further Information

Provide appropriate information, instructions and training to users

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 relevant ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)