

according to Regulation (EC) No 1907/2006

Sulfuric acid 4.5 mol/l

Revision: 06.11.2025 Product code: AC15.00315 Page 1 of 13

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

1.1. Product identifier

Sulfuric acid 4.5 mol/l

UFI: FR5U-V1HT-J00C-7WNA

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

Use of the substance/mixture

Reagents and laboratory chemicals

Only for laboratory and analysis purposes.

Uses advised against

Do not use for private purposes (household).

1.3. Details of the supplier of the safety data sheet

Details of the supplier of the safety data sheet

Company name: AnalytiChem Services, Unipessoal, Lda

Street: Rua de Júlio Dinis 676 7º Place: P-4050-320 Porto +351 226002917 Telephone: info@analvtichem.com F-mail: SDS service department Contact person: E-mail: SDS@analytichem.com Internet: www.analytichem.com SDS service department Responsible Department:

Supplier or manufacturer details

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: SDS service department
E-mail: SDS@analytichem.com
Internet: www.analytichem.de
Responsible Department: AnalytiChem:

EU-Belgium: AnalytiChem Belgium, Industriezone "De Arend" 2, 8210 Zedelgem,

Belgium, +32 50 28 83 20

EU-Germany: AnalytiChem Germany, Stempelstrasse 6, 47167 Duisburg,

Germany, +49 203 51 94 - 200

EU-Netherlands: AnalytiChem Netherlands, Communicatieweg 7, 3641 SG

Mijdrecht, The Netherlands, +31 297 286848

UK: AnalytiChem UK, Unit 7 Launton Business Center, Murdock Road, Bicester,

OX26 4XB, England, +44 1869 355 500

USA: AnalytiChem USA, 227 China Road, Winslow, Maine, 04901, United States,

+1 800-244-8378

Canada: AnalytiChem Canada, 21800 Clark Graham Avenue, Baie d'Urfe, H9X

4B6, Canada, +1 514-457-0701

Australia: ORE Research & Exploration Pty Ltd, 37A Hosie Street, Bayswater

North, 3153, Australia, +61 3 9729 0333

1.4. Emergency telephone

number:

+353 1 901 4670 (CHEMTREC)



according to Regulation (EC) No 1907/2006

Sulfuric acid 4.5 mol/l

Revision: 06.11.2025 Product code: AC15.00315 Page 2 of 13

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 Eye Dam. 1; H318

Full text of hazard statements: see SECTION 16.

2.2. Label elements

Regulation (EC) No 1272/2008

Hazard components for labelling

sulphuric acid

Signal word: Danger

Pictograms:



Hazard statements

H290 May be corrosive to metals.

H314 Causes severe skin burns and eye damage.

Precautionary statements

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

P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water P303+P361+P353

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					

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

Page 3 of 13



Revision: 06.11.2025

Safety Data Sheet

according to Regulation (EC) No 1907/2006

Sulfuric acid 4.5 mol/l Product code: AC15.00315

Specific Conc. Limits, M-factors and ATE

CAS No	EC No	Chemical name	Quantity
	Specific Conc. I	Limits, M-factors and ATE	
7664-93-9	231-639-5	sulphuric acid	30 - < 35 %
	oral: LD50 = 2° Irrit. 2; H319: >=	140 mg/kg Skin Corr. 1A; H314: >= 15 - 100 Skin Irrit. 2; H315: >= 5 - < 15 Eye = 5 - < 15	

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

First aider: Pay attention to self-protection!

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. Adverse human health effects and symptoms: Gastric perforation. Call a physician immediately. Do not allow a neutralisation agent to be drunk.

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

Risk of serious damage to eyes.

Causes burns.

Irritant

Cough

Dyspnoea

Vomiting

Gastric perforation

Nausea

Abdominal pain

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



according to Regulation (EC) No 1907/2006

Sulfuric acid 4.5 mol/l

Revision: 06.11.2025 Product code: AC15.00315 Page 4 of 13

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.

Avoid contact with skin, eyes and clothes.

Additional information

Use water spray jet to protect personnel and to cool endangered containers.

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General advice

Corrosive to metals.

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.



according to Regulation (EC) No 1907/2006

Sulfuric acid 4.5 mol/l

Revision: 06.11.2025 Product code: AC15.00315 Page 5 of 13

When using do not eat, drink, smoke, sniff.

Use personal protection equipment. Use extractor hood (laboratory).

Provide adequate ventilation. Do not inhale fog/steam/aerosol.

Avoid contact with skin, eyes and clothes.

Advice on protection against fire and explosion

No special fire protection measures are necessary.

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.

Unsuitable container/equipment material: Metal

Hints on joint storage

national regulations

Further information on storage conditions

Corrosive to metals.

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		



according to Regulation (EC) No 1907/2006

Sulfuric acid 4.5 mol/l

Revision: 06.11.2025 Product code: AC15.00315 Page 6 of 13

PNEC values

CAS No	Substance		
Environmental compartment Value			
7664-93-9	sulphuric acid		
Freshwater 0,003 n		0,003 mg/l	
Marine water		0 mg/l	
Freshwater sediment		0,002 mg/kg	
Marine sediment		0,002 mg/kg	
Micro-organisms in sewage treatment plants (STP) 8,8 mg/l			

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

Suitable eye protection:

goggles

Face protection shield

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.

Protective gloves are recommended Company KCL GmbH, D-36124 Eichenzell, email: vertrieb@kcl.de With specification (test according to EN374):

By long-term hand contact

Trade name/designation: KCL 730 Camatril® Velours
Recommended material: NBR (Nitrile rubber) 0,4 mm
Wearing time with permanent contact: > 480 min

By short-term hand contact

Trade name/designation: KCL 720 Camapren®

Recommended material: CR (polychloroprene, chloroprene rubber) 0,65 mm

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.

The choice of body protection depends on the concentration and quantity of hazardous substances. The



according to Regulation (EC) No 1907/2006

Sulfuric acid 4.5 mol/l

Revision: 06.11.2025 Product code: AC15.00315 Page 7 of 13

chemical resistance of protective agents must be clarified with their suppliers.

Respiratory protection

Respiratory protection necessary at: aerosol or mist formation

Filtering device with filter or ventilator filtering device of type: ABEK

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

I iauid Physical state: colourless Colour: Odour: odourless

No data available 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: Flash point: No data available Auto-ignition temperature: No data available Decomposition temperature: <1 pH-Value: No data available

Viscosity / kinematic: Water solubility: very soluble (Heat)

Solubility in other solvents

No data available

Partition coefficient n-octanol/water: No data available No data available Vapour pressure: No data available Vapour pressure: 1,27 g/cm³ Density: No data available Bulk density: No data available Relative vapour density:

9.2. Other information

Information with regard to physical hazard classes

Explosive properties No data available

No data available Sustained combustibility:

Self-ignition temperature

No data available Solid: No data available Gas:

Oxidizing properties No data available

Other safety characteristics

No data available Evaporation rate: Solvent separation test: No data available Solvent content: 0 Solid content:

Print date: 06.11.2025



Safety Data Sheet

according to Regulation (EC) No 1907/2006

Sulfuric acid 4.5 mol/l

Revision: 06.11.2025 Product code: AC15.00315 Page 8 of 13

Sublimation point:No data availableSoftening point:No data availablePour point:No data available

No data available:

Viscosity / dynamic:

Flow time:

No data available

No data available

Further Information
No data available

SECTION 10: Stability and reactivity

10.1. Reactivity

Corrosive to metals.

Oxidising agent, strong

10.2. Chemical stability

The product is stable under storage at normal ambient temperatures.

10.3. Possibility of hazardous reactions

Violent reaction with:

Water, Alkali metals, Ammonia

aldehydes, Alkaline earth metal, Acids

Alkali (lye), Metal,

Phosphorus oxides, Combustible substance

Solvent, Aniline, permanganates, e.g. potassium permanganate

Peroxides, Amines, Carbide

peroxides, for example hydrogen peroxide, Nitriles

(H2SO4) Violent reactions possible with: alkali metals, alkali compounds, ammonia, alkaline earth metals,

alkaline earth compounds, lyes, acids, metals, metal alloys, flammable substances, organic solvents,

halogenates, permanganates, phosphorus oxides, phosphorus, hydrides, nitrates, carbides, acetylenes, nitriles,

nitrides, organic nitro compounds, anilines, peroxides, picrates, lithium silicide, water.

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.

Cellulose

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

Toxicocinetics, metabolism and distribution

There are no data available on the mixture itself.



according to Regulation (EC) No 1907/2006

Sulfuric acid 4.5 mol/l

Revision: 06.11.2025 Product code: AC15.00315 Page 9 of 13

Acute toxicity

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

If swallowed danger of perforation of the esophagus and the stomach (strong corrosive effects).

Irritation to respiratory tract (Cough, Dyspnoea)

Mucous membrane irritation in the mouth, throat, esophagus and gastrointestinal tract.

Inhalation effect: Damage to the respiratory tract.

Other dangerous properties cannot be excluded.

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

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

Irritation and corrosivity

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

Serious eye damage/eye irritation: Causes serious eye damage.

Risk of serious damage to eyes.

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 mixture itself.

Additional information on tests

There are no data available on the mixture itself.

Practical experience

There are no data available on the mixture itself.

11.2. Information on other hazards

Other information

There are no data available on the mixture itself.

Further information

Risk of serious damage to eyes.

Causes burns.

Irritant

Cough

Dyspnoea

Vomiting

Print date: 06.11.2025



Safety Data Sheet

according to Regulation (EC) No 1907/2006

Sulfuric acid 4.5 mol/l

Revision: 06.11.2025 Product code: AC15.00315 Page 10 of 13

Gastric perforation Nausea Abdominal pain

SECTION 12: Ecological information

12.1. Toxicity

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

CAS No	Chemical name						
	Aquatic toxicity	Dose		[h] [d]	Species	Source	Method
7664-93-9	sulphuric acid						
	Acute algae toxicity	ErC50 mg/l	> 100		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

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.

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.

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

Avoid release to the environment.

Harmful effect due to pH shift.

Forms corrosive mixtures with water even if diluted.

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 mix with other wastes.

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.

SECTION 14: Transport information



according to Regulation (EC) No 1907/2006

	Sulfuric acid 4.5 mol/l	
Revision: 06.11.2025	Product code: AC15.00315	Page 11 of 13

Land transport (ADR/RID)

14.1. UN number or ID number: UN 2796

14.2. UN proper shipping name: SULPHURIC ACID

14.3. Transport hazard class(es):814.4. Packing group:IIHazard label:8Classification code:C1Limited quantity:1 LExcepted quantity:E2Transport category:2Hazard No:80

Inland waterways transport (ADN)

Tunnel restriction code:

14.1. UN number or ID number:UN 279614.2. UN proper shipping name:Sulphuric acid

Ε

14.3. Transport hazard class(es):814.4. Packing group:IIHazard label:8Classification code:C1Limited quantity:1 LExcepted quantity:E2

Marine transport (IMDG)

14.1. UN number or ID number:UN 279614.2. UN proper shipping name:Sulphuric acid

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

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number or ID number: UN 2796

14.2. UN proper shipping name: SULPHURIC ACID

14.3. Transport hazard class(es):814.4. Packing group:IIHazard label:8Limited 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: No

14.6. Special precautions for user

Warning: strongly corrosive.

14.7. Maritime transport in bulk according to IMO instruments

not applicable



according to Regulation (EC) No 1907/2006

Sulfuric acid 4.5 mol/l

Revision: 06.11.2025 Product code: AC15.00315 Page 12 of 13

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

Employment restrictions: Observe restrictions to employment for juveniles according to the 'juvenile

work protection guideline' (94/33/EC).

Water hazard class (D): 1 - slightly hazardous to water

SECTION 16: Other information

Changes

This data sheet contains changes from the previous version in section(s): 2,9,12.

Abbreviations and acronyms

Met. Corr. 1: Corrosive to metals, hazard category 1 Skin Corr. 1A: Skin corrosion, sub-category 1A Eye Dam. 1: Serious eye damage, hazard category 1

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 Harmonized System of Classification and Labelling of Chemicals EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service LC50: Lethal concentration, 50%

LD50: Lethal dose, 50%

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

Relevant H and EUH statements (number and full text)

H290 May be corrosive to metals.

H314 Causes severe skin burns and eye damage.

H318 Causes serious eye damage.

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 receiver of our product is singularly responsible for adhering to existing laws and regulations.

Provide appropriate information, instructions and training to users

Print date: 06.11.2025



Safety Data Sheet

according to Regulation (EC) No 1907/2006

Sulfuric acid 4.5 mol/l

Revision: 06.11.2025 Product code: AC15.00315 Page 13 of 13

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