

According to Regulation (EC) No 1907/2006

According to Regulation (EC) No 2020/878

Sulfuric acid

Version number: 1
Issued: 2024-02-14



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

1.1. Product identifier

Trade name

Sulfuric acid

CAS number

7664-93-9

EC number

231-639-5

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

Relevant identified uses

Research and development. Laboratory Chemicals. Manufacture of substances.

Not suitable for use in

Not suitable for human consumption or veterinary purposes.

1.3. Details of the supplier of the safety data sheet

Supplier

Molekula Group

Address

Molekula Ltd, Lingfield Way, Darlington,
DL1 4XX Darlington
United Kingdom

Telephone

+44 (0) 3302 000 333

Email

info@molekula.com

Web site

www.molekula.com

Contact person

Kevin Banks

Email

+44 (0) 7769276927

1.4. Emergency telephone number

Poison center/Additional emergency number

0344 892 0111 - National Poisons Information Service (Newcastle Centre)

According to Regulation (EC) No 1907/2006

According to Regulation (EC) No 2020/878

Sulfuric acid

Version number: 1
Issued: 2024-02-14



SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

Classification

Skin corrosion, hazard category 1A

Corrosive to metals, hazard category 1

Hazard statements

H290, H314

2.2. Label elements

Labelling according to Regulation (EC) No 1272/2008

Hazard pictograms



Signal word

Danger

Hazard statements

H290 May be corrosive to metals.

H314 Causes severe skin burns and eye damage.

Precautionary statements

P234 Keep only in original packaging.

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

P264 Wash skin thoroughly after handling.

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

P301 + P330 + P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.

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

P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

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.

P321 Specific treatment (see on this label).

P363 Wash contaminated clothing before reuse.

P405 Store locked up.

P501 Dispose of contents/container to local regulations.

2.3. Other hazards

No data available

According to Regulation (EC) No 1907/2006

According to Regulation (EC) No 2020/878

Sulfuric acid

Version number: 1
Issued: 2024-02-14



SECTION 3: Composition/information on ingredients

3.2. Mixtures

Chemical name	CAS No. EC No. REACH No. Index No.	Concentration	Classification	H-phrases M factor acute M factor chronic	Note
sulphuric acid ... %	7664-93-9 231-639-5 01-2119458838-20 016-020-00-8	100%	Met. Corr. 1, Skin Corr. 1A	H290, H314 - -	Skin Corr. 1A; H314: C ≥ 15 % Skin Irrit. 2; H315: 5 % ≤ C < 15 % Eye Irrit. 2; H319: 5 % ≤ C < 15 %; B

Molecular weight

98.08

Substance additional information

For the complete text of H- / EUH-statements mentioned in this section, see section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

IF exposed or concerned: Get medical advice/attention. First aiders/ medical personnel need to protect themselves. Show this Safety Data Sheet (SDS) to medical personnel.

Inhalation

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor. If breathing stops, provide artificial respiration. For breathing difficulties oxygen may be necessary.

Skin contact

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]. Immediately call a POISON CENTER/doctor.

Eye contact

Remove contact lenses if present. Rinse eyes with water. Continue to rinse for at least 15 minutes and seek medical attention.

Ingestion

IF SWALLOWED: give water to drink (two glasses at most). Seek medical advice immediately. In exceptional cases only, if medical care is not available within one hour, induce vomiting (only if the persons are fully conscious and awake). Administer activated charcoal (20 - 40g in a 10% slurry) and consult a doctor as quickly as possible. Do not attempt to neutralise.

Information for doctors

No data available.

According to Regulation (EC) No 1907/2006

According to Regulation (EC) No 2020/878

Sulfuric acid

Version number: 1
Issued: 2024-02-14



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

The severity of the symptoms described will vary dependant of the concentration and the length of exposure. Causes burns by all exposure routes.

See section 11 for more detailed information on health effects and symptoms.

Inhalation

Single exposure may cause the following adverse effects: Causes severe burns. Difficulty in breathing. Unconsciousness, possibly death.

Skin contact

Single exposure may cause the following adverse effects: Causes severe burns. Blistering may occur. May be absorbed in the body and cause dizziness, nausea and vomiting. Unconsciousness, death.

Eye contact

Single exposure may cause the following adverse effects: Causes serious eye damage. Unconsciousness, possibly death.

Ingestion

Single exposure may cause the following adverse effects: Severe abdominal pain. May cause severe internal injury. Unconsciousness, possibly death.

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

Treat symptomatically. Immediately call a POISON CENTER/doctor.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Use fire-extinguishing media appropriate for surrounding materials.

Unsuitable extinguishing media

No specific fire fighting procedure given.

5.2. Special hazards arising from the substance or mixture

Specific hazards: Corrosive.

Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours.

Not combustible.

Sulfur oxides

Ambient fire may liberate hazardous vapours.

5.3. Advice for firefighters

Special protective equipment for fire-fighters

Evacuate area. Avoid breathing gas, fume, vapours or spray. Prevent skin contact by maintaining a safe distance and by wearing suitable protective equipment/ clothing. Cool containers exposed to heat with water spray and remove container, if no risk is involved.

According to Regulation (EC) No 1907/2006

According to Regulation (EC) No 2020/878

Sulfuric acid

Version number: 1
Issued: 2024-02-14



SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Do not breathe vapour/spray. Avoid contact with skin and eyes. For personal protection, see section 8.

In case of fire: Evacuate area. Fight fire remotely due to the risk of explosion.

6.2. Environmental precautions

Avoid discharge into drains, water courses or onto the ground.

6.3. Methods and material for containment and cleaning up

Collect with absorbent, non-combustible material into suitable containers.

6.4. Reference to other sections

For personal protection, see section 8. For waste disposal, see section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Preventive handling precautions

For precautions see section 2.2. Work under hood. Take action to prevent static discharges. Wear protective clothing, gloves, eye and face protection. Avoid contact with skin and eyes. Avoid ingestion and inhalation.

General hygiene

Observe good chemical hygiene practices. Keep away from food, drink and animal feeding stuffs. Wash contaminated skin thoroughly after handling. Do not eat, drink or smoke when using this product. Remove contaminated clothing and launder thoroughly before re-use.

7.2. Conditions for safe storage, including any incompatibilities

Store in a dry place. Store in a closed container.

Store at ambient temperature.

7.3. Specific end use(s)

No specific usage precautions noted.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits

TWA: 0.05mg/m³ (Mist). Europe. Directive: 2009/161/EU

TWA: 0.05mg/m³. UK. EH40. WEL = Workplace Exposure Limit.

DNEL/DMEL

According to Regulation (EC) No 1907/2006

According to Regulation (EC) No 2020/878

Sulfuric acid

Version number: 1
Issued: 2024-02-14



Product/Substance name (CAS No./EC No.)	Type	Exposure	Value	Population	Effects
sulphuric acid ... % (7664-93-9/231-639-5)	DNEL	Acute (short term) Inhalation	0.1 mg/m ³	Workers	Local
sulphuric acid ... % (7664-93-9/231-639-5)	DNEL	Chronic (long term) Inhalation	0.05 mg/m ³	Workers	Local

PNEC/PEC

Product/Substance name (CAS No./EC No.)	Type	Environmental compartment	Value
sulphuric acid ... % (7664-93-9/231-639-5)	PNEC	Marine water	0.00025 mg/l
sulphuric acid ... % (7664-93-9/231-639-5)	PNEC	Sediment (marine water)	0.002 mg/kg

8.2. Exposure controls

Personal Protective Equipment Symbols



Eye / face protection

Wear eye protection.

Hand protection

Wear protective gloves. Recommended gloves: Viton rubber (fluor rubber).

Glove Thickness: 0.7mm

Breakthrough time: 8 hours

Always inspect gloves before use. If signs of wear and tear are noticed then the gloves should be replaced.

No specific hygiene procedures noted, but good personal hygiene practices are always advisable, especially when working with chemicals. Wash contaminated skin thoroughly after handling.

Other skin protection

Wash skin thoroughly after handling.

Respiratory protection

Provide adequate ventilation. If ventilation is insufficient, suitable respiratory protection must be provided.

Environmental exposure controls

Avoid discharge into drains.

According to Regulation (EC) No 1907/2006

According to Regulation (EC) No 2020/878

Sulfuric acid

Version number: 1

Issued: 2024-02-14



SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state

Liquid

Colour

Colourless.

Odour

Odourless.

Melting point / freezing point

10.31 °C

Boiling point or initial boiling point and boiling range

290 °C

Flammability

No data available

Lower and upper explosion limit

No data available

Flash point

No data available

Auto-ignition temperature

No data available

Decomposition temperature

No data available

pH

1.2

Kinematic viscosity

No data available

Solubility

No data available

Partition coefficient n-octanol/water

No data available

Vapour pressure

1.33 hPa

Density and/or relative density

1.84 g/cm³

According to Regulation (EC) No 1907/2006

According to Regulation (EC) No 2020/878

Sulfuric acid

Version number: 1
Issued: 2024-02-14



Relative vapour density

No data available

Particle characteristics

No data available

9.2. Other information

No data available

SECTION 10: Stability and reactivity

10.1. Reactivity

There are no known reactivity hazards associated with this product.

10.2. Chemical stability

Stable under the prescribed storage conditions.

According to Regulation (EC) No 1907/2006

According to Regulation (EC) No 2020/878

Sulfuric acid

Version number: 1
Issued: 2024-02-14



10.3. Possibility of hazardous reactions

A risk of explosion and/or of toxic gas formation exists with the following substances:

Water.

Alkali metals.

Alkali compounds

Ammonia.

Aldehydes.

Acetonitrile

Alkali earth metals.

Alkalines

Acids.

Alkaline earth compounds

Metals.

Metal alloys

Oxides of: Phosphorus.

Phosphorus.

hydrides

halogen-halogen compounds

oxyhalogenic compounds

permanganates

nitrites

carbides

combustible substances

organic solvent

acetylidene

Organic cyanides (nitriles).

Organic nitro compounds.

Anilines

Peroxides

Picrates

Nitrides

lithium silicide

iron (III) compounds

bromates

chlorates

Amines.

perchlorates

hydrogen peroxide

10.4. Conditions to avoid

No data available

10.5. Incompatible materials

animal/vegetable tissues Contact with metals liberates hydrogen gas.

10.6. Hazardous decomposition products

See section 5.

According to Regulation (EC) No 1907/2006

According to Regulation (EC) No 2020/878

Sulfuric acid

Version number: 1
Issued: 2024-02-14



SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity

Product / Substance name CAS / EC no.	Dose descriptor	Value / Dose	Exposure route	Test animals
sulphuric acid ... % 7664-93-9 / 231-639-5	LD50	2140 mg/kg	Oral	Rat

Skin corrosion/irritation

Product / Substance name CAS / EC no.	Result	Species
sulphuric acid ... % 7664-93-9 / 231-639-5	Extremely corrosive and destructive to tissue.	Rabbit

Serious eye damage/irritation

Product / Substance name CAS / EC no.	Result
sulphuric acid ... % 7664-93-9 / 231-639-5	Causes serious eye damage.

Germ cell mutagenicity

Product / Substance name CAS / EC no.	Result	Species	Method / Guideline
sulphuric acid ... % 7664-93-9 / 231-639-5	Negative.	Salmonella typhimurium	Ames test

Aspiration hazard

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

11.2. Information on other hazards

No data available

SECTION 12: Ecological information

12.1. Toxicity

Acute algae toxicity

According to Regulation (EC) No 1907/2006

According to Regulation (EC) No 2020/878

Sulfuric acid

Version number: 1
Issued: 2024-02-14



Product / Substance name CAS / EC no.	Measurement type	Value / Result	Duration of exposure	Species
sulphuric acid ... % 7664-93-9 / 231-639-5	ErC50	> 100mg/l	72 hours	Desmodesmus subspicatus (green algae)

Acute crustacean toxicity

Product / Substance name CAS / EC no.	Measurement type	Value / Result	Duration of exposure	Species
sulphuric acid ... % 7664-93-9 / 231-639-5	EC50	> 100mg/l	48 hours	Daphnia magna

12.2. Persistence and degradability

No data available

12.3. Bioaccumulative potential

No data available

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

No data available

12.6. Endocrine disrupting properties

This product does not contain any known or suspected endocrine disruptors.

12.7. Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal considerations

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

SECTION 14: Transport information

14.1. UN number

1830

According to Regulation (EC) No 1907/2006

According to Regulation (EC) No 2020/878

Sulfuric acid

Version number: 1
Issued: 2024-02-14



14.2. UN proper shipping name

ADR / RID / ADN proper shipping name

SULPHURIC ACID with more than 51% acid

IMDG proper shipping name

SULPHURIC ACID with more than 51% acid

IATA proper shipping name

Sulphuric acid with more than 51% acid

14.3. Transport hazard class(es)

Label

ADR/RID/ADN



8

IMDG



8

IATA



8

ADR / RID Class

8

ADR / RID Classification code

C1

ADR / RID hazard identification number

80

IMDG Class

8

IATA Class

8

According to Regulation (EC) No 1907/2006

According to Regulation (EC) No 2020/878

Sulfuric acid

Version number: 1
Issued: 2024-02-14



ADN Class

8

ADN Class Code

C1

14.4. Packing group

ADR / RID / ADN: II

IMDG: II

IATA: II

14.5. Environmental hazards

Not applicable

14.6. Special precautions for user

Special precautions for user

Tunnel restriction code: E

Transport category: 2

IMDG EmS

F-A, S-B

14.7. Maritime transport in bulk according to IMO instruments

IBC Instruction: IBC02

SECTION 15: Regulatory information

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

EU regulations

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.

This material safety data sheet complies with the requirements of Regulation (EU) 2020/878.

National regulations

Regulation EU 2019/1148: sulphuric acid

15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

SECTION 16: Other information

Phrase meaning

Skin Corr. 1A - Skin corrosion, hazard category 1A

Met. Corr. 1 - Corrosive to metals, hazard category 1

H290 May be corrosive to metals.

H314 Causes severe skin burns and eye damage.