

SAFETY DATA SHEET

Version 8.2
Revision Date 22.09.2021
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SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifiers

Product name : Sulfuric acid 98% for the determination of nitrogen

Product Number : 1.00748
Catalogue No. : 100748
Brand : Millipore
CAS-No. : 7664-93-9

1.2 Other means of identification

No data available

1.3 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Reagent for analysis

1.4 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich Pty. Ltd.
Suite 1, Level 1, Building B
11 Talavera Road
MACQUARIE PARK NSW 2113
AUSTRALIA

Telephone : +61 1800 800 097

1.5 Emergency telephone

Emergency Phone # : Free call (24/7): 1800 448 465
Int'l (24/7): +61 2 9037 2994
(CHEMTREC)

SECTION 2: Hazards identification

2.1 GHS Classification

Corrosive to Metals (Category 1), H290
Skin corrosion/irritation (Category 1), H314
Serious eye damage/eye irritation (Category 1), H318

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

2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word : Danger

Hazard statement(s)

H290 : May be corrosive to metals.
H314 : Causes severe skin burns and eye damage.

Precautionary statement(s)

Prevention

P234	Keep only in original container.
P264	Wash skin thoroughly after handling.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response

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 + P310	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.
P305 + P351 + P338 + P310	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.
P390	Absorb spillage to prevent material damage.

Storage

P405	Store locked up.
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Disposal

P501	Dispose of contents/ container to an approved waste disposal plant.
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Reduced Labeling (<= 125 ml)

Pictogram



Signal word none

Hazard statement(s) none

Precautionary statement(s) none

Refer to the Safety Data Sheet before use.

2.3 Other hazards - none

SECTION 3: Composition/information on ingredients

Substance / Mixture : Substance

3.1 Substances

Formula	: H2SO4
Molecular weight	: 98.08 g/mol
CAS-No.	: 7664-93-9
EC-No.	: 231-639-5
Index-No.	: 016-020-00-8

Hazardous ingredients

Component	Classification	Concentration
sulphuric acid	Met. Corr. 1; 1A; 1; H290, H314, H318 Concentration limits: >= 0.3 %: Met. Corr. 1,	<= 100 %

	H290; $\geq 15\%$: Skin Corr. 1A, H314; 5 - $< 15\%$: Skin Irrit. 2, H315; 5 - $< 15\%$: Eye Irrit. 2, H319;	
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For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice

First aiders need to protect themselves. Show this material safety data sheet to the doctor in attendance.

If inhaled

After inhalation: fresh air. Call in physician.

In case of skin contact

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

In case of eye contact

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

If swallowed

After swallowing: make victim drink water (two glasses at most), avoid vomiting (risk of perforation). Call a physician immediately. Do not attempt to neutralise.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

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

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture

Sulfur oxides

Not combustible.

Fire may cause evolution of:

Sulfur oxides

Ambient fire may liberate hazardous vapours.

5.3 Advice 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.

5.4 Further information

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

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

For personal protection see section 8.

6.2 Environmental precautions

Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up with liquid-absorbent and neutralising material (e.g. Chemizorb® H⁺, Merck Art. No. 101595). Dispose of properly. Clean up affected area.

6.4 Reference to other sections

For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions

Tightly closed.

Recommended storage temperature see product label.

Storage class

Storage class (TRGS 510): 8B: Non-combustible, corrosive hazardous materials

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.3 no other specific uses are stipulated.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Ingredients with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
sulphuric acid	7664-93-9	PEL (long term)	1 mg/m ³	Singapore. Workplace Safety and Health Act - First Schedule Permissible Exposure Limits of Toxic Substances
		PEL (short term)	3 mg/m ³	Singapore. Workplace Safety and Health Act - First Schedule Permissible Exposure Limits of Toxic Substances

8.2 Exposure controls

Appropriate engineering controls

Change contaminated clothing and immerse in water. Preventive skin protection Wash hands and face after working with substance.

Personal protective equipment

Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Tightly fitting safety goggles

Skin protection

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).

Full contact

Material: Viton®

Minimum layer thickness: 0.7 mm

Break through time: 480 min

Material tested: Vitoject® (KCL 890 / Aldrich Z677698, Size M)

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).

Splash contact

Material: butyl-rubber

Minimum layer thickness: 0.7 mm

Break through time: 120 min

Material tested: Butoject® (KCL 898)

Body Protection

Acid-resistant protective clothing

Respiratory protection

required when vapours/aerosols are generated. Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

Control of environmental exposure

Do not let product enter drains.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

- | | |
|---------------------------------|----------------------------------|
| a) Appearance | Form: liquid
Color: colorless |
| b) Odor | odorless |
| c) Odor Threshold | Not applicable |
| d) pH | 0.3 at 49 g/l at 25 °C |
| e) Melting point/freezing point | Melting point: -20 °C |
| f) Initial boiling point | ca.335 °C at 1,013 hPa |

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The life science business of Merck operates as MilliporeSigma in the US and Canada



	and boiling range	
g)	Flash point	Not applicable
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapor pressure	ca.0.0001 hPa at 20 °C
l)	Vapor density	ca.3.4
m)	Density	1.84 g/cm ³ at 20 °C
	Relative density	No data available
n)	Water solubility	at 20 °C soluble, (caution ! development of heat)
o)	Partition coefficient: n-octanol/water	Not applicable for inorganic substances
p)	Autoignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	Viscosity, kinematic: No data available Viscosity, dynamic: ca.24 mPa.s at 20 °C
s)	Explosive properties	Not classified as explosive.
t)	Oxidizing properties	Oxidizing potential

9.2 Other safety information

Bulk density	Not applicable
Surface tension	55.1 mN/m at 20 °C
Relative vapor density	ca.3.4

SECTION 10: Stability and reactivity

10.1 Reactivity

strong oxidising agent

10.2 Chemical stability

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

10.3 Possibility of hazardous reactions

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

Violent reactions possible with:

Alkali metals
alkali compounds
Ammonia
Aldehydes
acetonitrile
Alkaline earth metals

alkalines
Acids
alkaline earth compounds
Metals
metal alloys
Oxides of phosphorus
phosphorus
hydrides
halogen-halogen compounds
oxyhalogenic compounds
permanganates
nitrates
Carbides
combustible substances
organic solvent
acetylidene
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 information available

10.5 Incompatible materials

animal/vegetable tissues, Metals Contact with metals liberates hydrogen gas.

10.6 Hazardous decomposition products

In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

LD50 Oral - Rat - male and female - 2,140 mg/kg (sulphuric acid)

Remarks: (ECHA)

Inhalation: Corrosive to respiratory system. (sulphuric acid)

Dermal: No data available

Skin corrosion/irritation

Skin - Rabbit (sulphuric acid)

Result: Extremely corrosive and destructive to tissue.

Remarks: (IUCLID)

Serious eye damage/eye irritation

Causes serious eye damage. (sulphuric acid)

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

Test Type: Ames test
(sulphuric acid)

Test system: Salmonella typhimurium

Result: negative

Remarks: (HSDB)

Carcinogenicity

No data available

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

11.2 Additional Information

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea, Vomiting, Pulmonary edema. Effects may be delayed. (sulphuric acid)

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. (sulphuric acid)

After inhalation of aerosols: damage to the affected mucous membranes. After skin contact: severe burns with formation of scabs. After eye contact: burns, corneal lesions.

After swallowing: severe pain (risk of perforation!), nausea, vomiting and diarrhoea.

After a latency period of several weeks possibly pyloric stenosis.

(sulphuric acid)

Other dangerous properties can not be excluded.

(sulphuric acid)

Handle in accordance with good industrial hygiene and safety practice.

(sulphuric acid)

SECTION 12: Ecological information**12.1 Toxicity**

Toxicity to daphnia and other aquatic invertebrates	static test EC50 - Daphnia magna (Water flea) - > 100 mg/l - 48 h (sulphuric acid) (OECD Test Guideline 202)
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Toxicity to algae	static test ErC50 - Desmodesmus subspicatus (green algae) - > 100 mg/l - 72 h (sulphuric acid) (OECD Test Guideline 201)
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12.2 Persistence and degradability

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

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

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

12.6 Other adverse effects

Biological effects:

Forms corrosive mixtures with water even if diluted. Harmful effect due to pH shift.

Endangers drinking-water supplies if allowed to enter soil or water.

Discharge into the environment must be avoided.

Biological effects:

Harmful effect due to pH shift.

Caustic even in diluted form.

Does not cause biological oxygen deficit.

Endangers drinking-water supplies if allowed to enter soil and/or waters in large quantities.

Neutralisation possible in waste water treatment plants.

Discharge into the environment must be avoided.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself. See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

SECTION 14: Transport information

14.1 UN number

ADR/RID: 1830

IMDG: 1830

IATA-DGR: 1830

14.2 UN proper shipping name

ADR/RID: SULPHURIC ACID

IMDG: SULPHURIC ACID

IATA-DGR: Sulphuric acid

14.3 Transport hazard class(es)

ADR/RID: 8

IMDG: 8

IATA-DGR: 8

14.4 Packaging group

ADR/RID: II

IMDG: II

IATA-DGR: II

14.5 Environmental hazards

ADR/RID: no

IMDG Marine pollutant: no

IATA-DGR: no

14.6 Special precautions for user

None

14.7 Incompatible materials

animal/vegetable tissues, Metals Contact with metals liberates hydrogen gas.

Other regulations

Hazchem Code : 2P

SECTION 15: Regulatory information

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

Notification status

AICS:	On the inventory, or in compliance with the inventory
DSL:	All components of this product are on the Canadian DSL
ENCS:	On the inventory, or in compliance with the inventory
ISHL:	Not in compliance with the inventory - water
KECI:	On the inventory, or in compliance with the inventory
NZIoC:	Not in compliance with the inventory - sulphuric acid
PICCS:	On the inventory, or in compliance with the inventory

SECTION 16: Other information

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

H290	May be corrosive to metals.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.

Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

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