MATERIAL SAFETY DATA SHEET (MSDS) – SULFURIC ACID 98%

Section 1 - Chemical Product

MSDS Name: Sulfuric acid 98%

Synonyms:
Hydrogen sulfate; Oil of vitriol; Vitriol brown oil; Mattling acid; Battery acid; Sulphuric acid; Electrolyte acid; Dihydrogen sulfate; Spirit of sulfur; Chamber acid.

Section 2 - Hazards Identification

Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

- Skin corrosion/irritation, H314
- Category 1A

Full text of H statements: see section 16

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

- C; R35

Full text of R-phrases: see section 16

Adverse physicochemical, human health and environmental effects

No additional information available

Label Elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Signal Word: Danger

Hazard Statements (CLP)

H314 - Causes severe skin burns and eye damage.

Precautionary Statements (CLP)

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 doctor.

Section 3 - Composition, Information on Ingredients

Substances

Item	Details
Name	SULPHURIC ACID 98%
CAS-No.	7664-93-9
EC-No.	231-639-5
EC Index-No.	016-020-00-8

Full text of R- and H-statements: see section 16

CAS#	Chemical Name	Percent	EINECS/ELINCS
7664-93-9	Sulfuric acid	98	231-639-5

Section 4 - First Aid Measures

Eyes

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical aid immediately.

Skin

In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid immediately. Wash clothing before reuse.

Ingestion

If swallowed, do NOT induce vomiting. Get medical aid immediately. If victim is fully conscious, give a cupful of water. Never give anything by mouth to an unconscious person.

Inhalation

POISON material. If inhaled, get medical aid immediately. Remove victim to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Notes to Physician

Monitor arterial blood gases, chest x-ray, and pulmonary function tests if respiratory tract irritation or respiratory depression is evident. Treat dermal irritation or burns with standard topical therapy. Effects may be delayed. Do NOT use sodium bicarbonate in an attempt to neutralize the acid.

Section 5 - Fire Fighting Measures

General Information

As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Use water spray to keep fire-exposed containers cool. Substance is noncombustible. Contact with water can cause violent liberation of heat and splattering of the material. Contact with metals may evolve flammable hydrogen gas. Runoff from fire control or dilution water may cause pollution. Approach fire from upwind to avoid hazardous vapors and toxic decomposition products. Strong dehydrating agent, which may cause ignition of finely divided materials on contact. Oxides of sulfur may be produced in fire.

Extinguishing Media

Use extinguishing media most appropriate for the surrounding fire. Do NOT get water inside containers. If water is used, care should be taken, since it can generate heat and cause spattering if applied directly to sulfuric acid.

Property	Value
Flash Point	Not applicable
Autoignition Temperature	Not available
Explosion Limits, Lower	Not available
Explosion Limits, Upper	Not available
NFPA Rating	Health: 3; Flammability: 0; Instability: 2; Special Hazard: -W-

Section 6 - Accidental Release Measures

General Information

Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks

Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Carefully scoop up and place into appropriate disposal container. Provide ventilation. Do not get water inside containers. Cover with dry earth, dry sand, or other non-combustible material followed with plastic sheet to minimize spreading and contact with water.

Section 7 - Handling and Storage

Handling

Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Do not allow water to get into the container because of violent reaction. Do not get in eyes, on skin, or on

clothing. Keep container tightly closed. Discard contaminated shoes. Use only with adequate ventilation. Do not breathe spray or mist. Do not use with metal spatula or other metal items. Inform laundry personnel of contaminant's hazards.

Storage

Do not store near combustible materials. Keep container closed when not in use. Store in a cool, dry, well-ventilated area away from incompatible substances. Do not store near alkaline substances. Store protected from moisture. Ideally, sulfuric acid should be stored in isolation from all other chemicals in an approved acid or corrosives safety cabinet.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits. Use a corrosion-resistant ventilation system.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Sulfuric acid	0.2 mg/m3 TWA (thoracic fraction)	1 mg/m3 TWA, 15 mg/m3 IDLH	1 mg/m3 TWA

OSHA Vacated PELs

Sulfuric acid: 1 mg/m3 TWA

Personal Protective Equipment

Type	Protection
Eyes	Wear chemical splash goggles and face shield
Skin	Wear neoprene gloves, apron, and/or clothing. Viton gloves are recommended
Clothing	Wear appropriate protective clothing to prevent skin exposure
Respirators	Follow OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149

Section 9 - Physical and Chemical Properties

Property	Value
Physical State	Liquid
Appearance	Oily - clear colorless to yellow

Property	Value
Odor	Odorless
pH	0.3 (1N solution)
Vapor Pressure	< 0.001 mm Hg @ 20 deg C
Vapor Density	3.38 (air=1)
Evaporation Rate	Slower than ether
Viscosity	21 mPas @ 25 C
Boiling Point	290 - 338 deg C
Freezing/Melting Point	10 deg C
Decomposition Temperature	340 deg C
Solubility	Soluble with much heat
Specific Gravity/Density	1.84
Molecular Formula	H2SO4
Molecular Weight	98.07

Section 10 - Stability and Reactivity

Property	Details
Chemical Stability	Sulfuric acid reacts vigorously, violently or explosively with many organic and inorganic chemicals and with water
Conditions to Avoid	Excess heat, exposure to moist air or water
Incompatibilities	Metals, oxidizing agents, reducing agents, bases, acrylonitrile, chlorates, finely powdered metals, nitrates, perchlorates, permanganates, epichlorohydrin, aniline, carbides, fulminates, picrates, organic materials, flammable liquids
Hazardous Decomposition Products	Oxides of sulfur
Hazardous Polymerization	Has not been reported

Section 11 - Toxicological Information

RTECS#

CAS# 7664-93-9: WS5600000

LD50/LC50

Test	Result
Draize test, rabbit, eye	250 ug Severe
Inhalation, mouse	LC50 = 320 mg/m3/2H
Inhalation, rat	LC50 = 510 mg/m3/2H
Oral, rat	LD50 = 2140 mg/kg

Carcinogenicity

Agency	Classification
ACGIH	A2 - Suspected Human Carcinogen
California	Listed as Strong inorganic acid mists containing sulfuric acid
NTP	Known carcinogen
IARC	Group 1 carcinogen

Epidemiology

Workers exposed to industrial sulfuric acid mist showed a statistical increase in laryngeal cancer.

Teratogenicity

Sulfuric acid was not teratogenic in mice and rabbits, but was slightly embryotoxic in rabbits.

Reproductive Effects

No information found.

Mutagenicity

No mutagenicity studies specifically of sulfuric acid.

Neurotoxicity

No information found.

Section 12 - Ecological Information

Ecotoxicity

Organism	Result
Fish: Bluegill/Sunfish	49 mg/L; 48Hr; TLm
Fish: Bluegill/Sunfish	24.5 ppm; 48Hr; TLm

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3.

Category	Status
RCRA P-Series	None listed
RCRA U-Series	None listed

Section 14 - Transport Information

Item	US DOT	Canada TDG
Shipping Name	SULFURIC ACID	SULFURIC ACID
Hazard Class	8	8
UN Number	UN1830	UN1830
Packing Group	II	II

Section 15 - Regulatory Information

US FEDERAL

TSCA

CAS# 7664-93-9 is listed on the TSCA inventory.

Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and Corresponding RQs

CAS# 7664-93-9: 1000 lb final RQ; 454 kg final RQ

SARA Section 302 Extremely Hazardous Substances

CAS# 7664-93-9: 1000 lb TPQ

SARA Codes

CAS# 7664-93-9: immediate, delayed, reactive.

Section 313

This material contains Sulfuric acid (CAS# 7664-93-9, 90-98%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

Clean Air Act

- Does not contain hazardous air pollutants
- Does not contain Class 1 Ozone depletors
- Does not contain Class 2 Ozone depletors

Clean Water Act

CAS# 7664-93-9 is listed as a Hazardous Substance under the CWA.

OSHA

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

CAS# 7664-93-9 can be found on the following state right to know lists:

- California
- New Jersey
- Pennsylvania
- Minnesota
- Massachusetts

California Prop 65

WARNING: This product contains Sulfuric acid, listed as strong inorganic acid mists containing sulfuric acid.

European / International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols

C

Risk Phrases

R35 Causes severe burns.

Safety Phrases

- S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
- S30 Never add water to this product.
- S45 In case of accident or if you feel unwell, seek medical advice immediately.

WGK (Water Danger/Protection)

CAS# 7664-93-9: 2

Section 16 - Additional Information

MSDS Creation Date

21/09/2025

Full text of R-, H- and EUH-statements

Code	Meaning
Skin Corr. 1A	Skin corrosion/irritation, Category 1A
H314	Causes severe skin burns and eye damage
R35	Causes severe burns
C	Corrosive