

SAFETY DATA SHEET

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

1.1 Product identifiers

Product name: Sulfuric Acid 93%
CAS number: 7664-93-9
Synonyms: Sulphuric Acid

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

Identified Uses: Process chemical, laboratory and scientific research and development.

1.3 Details of the supplier of the safety data sheet

Company : Lab Alley, LLC
22111 Highway 71 West, Suite 601
Spicewood, Texas 78669
U.S.A.

Telephone : 512-668-9918
Fax : 512-886-4008

1.4 Emergency telephone

Emergency Phone # : US & Canada: 1-800-535-5053 INFOTRAC
International 1-352-323-3500 INFOTRAC

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Skin corrosion/irritation (Category 1)
Serious eye damage/eye irritation (Category 1)

In case of ingestion: Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

4.2 Most important symptoms and effects, both acute and delayed

Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.

4.3 Indication of any immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically. Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim under observation. Symptoms may be delayed.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable (and unsuitable) extinguishing media

Foam. Powder. Carbon dioxide (CO₂).
Do not use water jet as an extinguisher, as this will spread the fire.

5.2 Specific hazards arising from the substance or mixture

During fire, gases hazardous to health may be formed.

5.3 Special protective equipment and precautions for firefighters

Self-contained breathing apparatus and full protective clothing must be worn in case of fire. Move containers from fire area if you can do so without risk. Use standard firefighting procedures and consider the hazards of other involved materials. No unusual fire or explosion hazards noted.

5.4 Further information

No data available.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not breathe vapors. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SOS.

6.2 Environmental precautions

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

6.3 Methods and materials for containment and cleaning up

This product is miscible in water. Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills to original containers for re-use. For waste disposal, see section 13 of the SOS.

6.4 Reference to other sections

For disposal see Section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Respiratory protection is "only required" when sprays are present in the air.

Hygiene measures

No data available.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions

Store locked up. Store in tightly closed container. Store away from incompatible materials (see Section 10 of the SOS).

SECTION 8. Exposure controls/personal protection

8.1 Occupational exposure limits

8.2 Exposure controls

Appropriate engineering controls

A system of local and / or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, Industrial Ventilation, A Manual of Recommended Practices, most recent edition, for details.

Personal protective equipment

Eye/face protection

Use chemical safety goggles and full face shield where splashing of solutions is possible. Maintain eye wash fountain and quick-drench facilities in work area.

Skin and body protection

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Respiratory protection

If the exposure limit is exceeded and engineering controls are not feasible, a full face piece respirator with an acid gas cartridge and particulate filter (NIOSH type N100 filter) may be worn up to 50 times the exposure limit, or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. If oil particles (e.g. lubricants, cutting fluids, Glycerine, etc.) are present, use a NIOSH type R or P particulate filter. For emergencies or instances where the exposure levels are not known, use a full face piece positive-pressure, air-supplied respirator. **WARNING:** Air purifying respirators do not protect workers in Oxygen-deficient atmospheres.

Control of environmental exposure

No data available.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical State	Liquid.
Appearance	Clear oily liquid.
Odor	Odorless
Odor Thresh	Not determined.
pH	1 N solution (ca. 5% w/w) = 0.3; 0.1 N solution (ca. 0.5% w/w) = 1.2; 0.01 N solution (ca. 0.05% w/w) = 2.1
Melting Point/Range	3°C (100%), -32°C (93%), -38°C (78%), -64°C (65%)
Boiling Point/Range	ca. 290°C (ca. 554°F) (decomposes at 340°C)
Flash Point	Not applicable.
Evaporation Rate	Not determined.
Flammability (solid, gas)	Not applicable
Flammability or explosive limit	
	Upper : NA
	Lower : NA
Vapor Pressure	1 @ 145.8°C (295°F)
Vapor Density	3.4
Density	1.84 g/cm ³ at 25 °C (77 °F)
Solubility	100 g/100 ml water @ 100°C (212°F). 1g/13mL cold water
Partition coefficient; n-octanol/water	1 @ 145.8°C (295°F)
Autoignition Temp	3.4
Decomposition Temp	1.84 g/cm ³ at 25 °C (77 °F)
Viscosity	100 g/100 ml water @ 100°C (212°F). 1g/13mL cold water
Molecular Formula	H ₂ SO ₄
Molecular Weight	98.08
VOC Content(%)	No data available.
Oxidizing properties	None.

9.2 Other safety information

None.

SECTION 10: Stability and reactivity

10.1 Reactivity

No data available.

10.2 Chemical stability

Stable, but reacts violently with water and organic materials with evolution of heat.

10.3 Possibility of hazardous reactions

Hazardous polymerization does not occur. Vigorous reactions occur when in contact with incompatible materials.

10.4 Conditions to avoid

Exposure to moisture and water vapor. Reacts violently with strong alkaline substances. This product may react with reducing agents. Do not mix with other chemicals.

10.5 Incompatible materials

Incompatible with bases. This product may react with reducing agents. Contact with metals may evolve flammable hydrogen gas.

10.6 Hazardous decomposition products

Thermal decomposition may release oxides of sulfur.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Sulfuric Acid: Oral rat LD50-2140 mg/kg, Inhalation rat LC50-375 mg/m³/4hr .

Skin corrosion/irritation

Symptoms of redness, pain, and severe burn can occur. Circulatory collapse with clammy skin, weak and rapid pulse, shallow respirations, and scanty urine may follow skin contact or ingestion. Circulatory shock is often the immediate cause of death.

Serious eye damage/eye irritation

Vapors cause irritation. Splashes cause severe pain, eye damage, and permanent blindness.

Respiratory or skin sensitization

No data available.

Germ cell mutagenicity

Not expected to cause mutagenic activity.

Carcinogenicity

Sulfuric Acid contained in strong inorganic acid mists is listed by IARC as a Category 1 "Carcinogenic to Humans". None of the other components of this product are listed as a carcinogen or suspected carcinogen by OSHA, IARC, and NTP.

Reproductive toxicity

Reproductive harm is not expected from this product.

Specific target organ toxicity - single exposure

No data available.

Specific target organ toxicity - repeated exposure

No data available.

Aspiration hazard

Toxic if inhaled. Can cause central nervous system (CNS) depression. May cause drowsiness and dizziness. May be fatal if swallowed and enters airways.

Chronic effects

Prolonged inhalation may cause lung damage. Repeated exposure may cause damage to the tissues of the mucous membranes, upper respiratory tract, eyes and skin. Chronic exposure to mists containing sulfuric acid is a cancer hazard. Persons with pre-existing skin disorders or eye disease may be more susceptible to the effects of this material.

11.2 Additional information

None.

SECTION 12. Ecological information

12.1 Toxicity

Ecotoxicity:

Product	Species	Test Results
Sulfuric Acid:	Bluegill	16 mg/L 96 Hr LC50
	Water flea	>100 mg/L 48 Hr EC50

*This product may be hazardous for the environment due to its low pH. Releases to the environment should be avoided.

12.2 Persistence and Degradability

Sulfuric acid is an inorganic compound and not subject to biodegradation.

12.3 Bioaccumulative Potential

No further relevant information available.

12.4 Mobility in Soil

This product is water soluble and will move readily in soil and water.

12.5 Results of PBT and vPvB assessment

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

12.6 Endocrine disrupting properties

No data available.

12.7 Other adverse effects

None known.

SECTION 13. Disposal considerations

13.1 Waste Disposal Methods

Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Neutralize and flush solution into sewer connected to wastewater treatment system in compliance with applicable laws and regulations. Dispose of contents/container in accordance with local/regional/national/international regulations. Waste Corrosive material [pH ≤ 2 or ≥ 12.5 , or corrosive to steel] Waste from residues / unused products Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions). Taking into account local regulations the product may be disposed of as waste water after neutralization. Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

SECTION 14: Transport information

DOT

UN-No	UN1830
Proper Shipping Name	Sulfuric Acid
Hazard Class	8
Packing Group	II

TDG

UN-No	UN1830
Proper Shipping Name	Sulfuric Acid
Hazard Class	8
Packing Group	II

IATA

UN-No	UN1830
Proper Shipping Name	Sulfuric Acid
Hazard Class	8
Packing Group	II

IMDG/IMO

UN-No	UN1830
Proper Shipping Name	Sulfuric Acid
Hazard Class	8
Packing Group	II

SECTION 15: Regulatory information

US federal regulations:

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not on regulatory list.

CERCLA Hazardous Substance List (40 CFR 302.4)

This product has a Reportable Quantity (RQ) of 1,052 lbs. (based on the RQ for Sulfuric Acid of 1,000 lbs present at 35-95%). Releases above the RQ must be reported to the National Response Center. Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories:

SARA 311/312

Refer to Section 2 for OSHA Hazard Classification.

Section 313 Toxic Chemicals: This product contains the following chemicals subject to SARA Title III Section 313 Reporting requirements: None

SARA 302 Extremely hazardous substance

Sulfuric Acid (1,000 lbs)

Other federal regulations:

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Clean Water Act (CWA) Section 112(r) (40 CFR 68.130)

Hazardous substance

Safe Drinking Water Act (SDWA)

Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2) and Chemical Code Number

SULFURIC ACID (CAS 7664-93-9) 6552

Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))

SULFURIC ACID (CAS 7664-93-9) 20 %WV

DEA Exempt Chemical Mixtures Code Number

SULFURIC ACID (CAS 7664-93-9) 6552

Food and Drug Administration (FDA)

Not regulated.

US state regulations California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This product can expose you to chemicals including Sulfuric Acid, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

US. Massachusetts RTK - Substance List:

SULFURIC ACID (CAS 7664-93-9)

US. New Jersey Worker and Community Right-to-Know Act:

SULFURIC ACID (CAS 7664-93-9) 500 LBS

US. Pennsylvania RTK - Hazardous Substances

SULFURIC ACID (CAS 7664-93-9)

US. Rhode Island RTK

SULFURIC ACID (CAS 7664-93-9)

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance: Strong inorganic acid mists containing sulfuric acid.

International Inventories:

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

SECTION 16: Other information

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Disclaimer:

The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.