TECHNICAL DATA SHEET

Sulfuric Acid 93% Technical Grade

Revised: 04/27/2026

PRODUCT IDENTIFICATION

Product Name: Sulfuric Acid 93% Technical Grade
CAS Number: 7664-93-9
Molecular Formula: H_2O_4S
Molecular Weight: 98.08 g/mol
Grade: Technical Grade
Purity / Concentration: 93%
Synonyms: Oil of Vitriol, Sulfuric Acid Solution

PRODUCT OVERVIEW

Sulfuric Acid 93% Technical Grade is a highly concentrated, clear, oily liquid essential for industrial chemical processes. With a precise assay of 93.2% and low impurity levels, such as 1 ppm of iron, it provides consistent performance for demanding applications like battery manufacturing and pH regulation.

Grade Significance: Technical Grade ensures that the product meets specific industrial standards for purity and concentration, providing a reliable and cost-effective solution for large-scale manufacturing processes.

CERTIFICATE OF ANALYSIS — TYPICAL VALUES

PARAMETER	UNIT	TYPICAL	MIN	MAX	TEST METHOD
Assay (wt%)	%	93.2	92.5	94	Titration with NaOH
Color (APHA)	APHA	10	—	20	ASTM D1209
Specific Gravity (20°C)	g/mL	1.834	1.83	1.84	ASTM D891
Residue After Ignition	%	0.0020	—	0.0050	Gravimetric
Heavy Metals (as Pb)	ppm	0.1	—	1	ICP-OES
Iron (Fe)	ppm	1	—	5	ICP-OES
Chloride (Cl^-)	ppm	0.2	—	1	Ion Chromatography

ND = Not Detected. Values are typical and may vary by lot.

PHYSICAL & CHEMICAL PROPERTIES

Appearance	Oily, clear liquid	**Odor**	Odorless
Form	Liquid	**Boiling Point**	337°C (639°F)
Melting / Freezing Point	10°C (50°F)	**Flash Point**	null
Specific Gravity	1.835	**Solubility**	High water solubility, miscible with polar solvents
Molecular Formula	H_2O_4S	**Molecular Weight**	98.08 g/mol
Vapor Pressure (20°C)	0.3 mmHg	**Viscosity (25°C)**	1.0 cP (liquid); note: highly concentrated acids ma show apparent higher viscosity due to coning
Refractive Index (20°C)	1.406	**Density (25°C)**	1.84 g/mL

APPLICATIONS

1. **Energy Storage** — Functions as the critical electrolyte in lead-acid batteries, facilitating the chemical reactions necessary for reliable energy storage.
2. **Agriculture** — Acts as a primary reactant in the manufacturing of fertilizers, ensuring the efficient production of essential crop nutrients.
3. **Water Treatment** — Used effectively for pH adjustment in wastewater treatment facilities to neutralize alkaline streams and maintain environmental compliance.
4. **Chemical Synthesis** — Employed as a powerful dehydrating agent in organic synthesis, helping to drive complex chemical reactions forward.
5. **Mining and Metallurgy** — Utilized in mineral processing and metal pickling to remove impurities and prepare surfaces for further refinement.

STORAGE & HANDLING

Due to its status as a highly corrosive substance that causes severe skin burns and eye damage, sulfuric acid must be stored in a cool, well-ventilated area using compatible materials. Proper containment is essential to prevent accidental release and to minimize the risk of dangerous reactions with incompatible materials.

- Store in a cool, dry, well-ventilated area away from incompatible materials.
- Use corrosion-resistant containers (e.g., HDPE, glass) for storage.
- Avoid contact with metals and organic materials to prevent violent reactions.
- Always wear appropriate personal protective equipment (PPE) including gloves and goggles.
- Ensure proper ventilation when handling to minimize inhalation risks.

AVAILABLE PACKAGING

- 1 Quart
- 1 Gallon
- 5 Gallon
- 15 Gallon
- 55 Gallon
- 275 Gallon
- 330 Gallon

SAFETY SUMMARY (CROSS-REFERENCE TO SDS)

Signal Word: Danger

Hazard Statements:

- H314: Causes severe skin burns and eye damage [Danger Skin corrosion/irritation]

Emergency Contact: CHEMTEL - 800-255-3924 (24 Hours/Day, 7 Days/Week)

For complete safety information, refer to the Safety Data Sheet (SDS) for this product.

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