

PRODUCT IDENTIFICATION

**Product Name:** Sulfuric Acid 93% Technical Grade**CAS Number:** 7664-93-9**Molecular Formula:** $\text{H}_2\text{O}_4\text{S}$ **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 (Titration)	%	93.57	93	94.2	Titration
Color (APHA/Hazen)	APHA	3	—	100.0	Spectrophotometry
Specific Gravity (20°C)	g/mL	1.83	1.825	1.835	Hydrometer @ 25°C
Non-Volatile Residue	%	0.0030	—	0.01	Residue on Ignition
Arsenic Antimony As As	ppm	0.0048	—	0.0097	ICP-MS
Heavy Metals As Pb	ppm	0.097	0	0.97	ICP-MS (as Pb)
Iron (Fe)	ppm	1.37	—	50	ICP-MS
Chloride Cl	ppm	0.048	0	0.19	ICP
Nitrate No3	ppm	0.097	0	0.48	ICP
Mercury Hg	ppm	0.48	—	4.84	ICP-MS
Sulfite So3	ppm	6.81	0	9.7	ICP
Turbidity	NTU	1	—	50	EPA 180.1

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

PHYSICAL & CHEMICAL PROPERTIES

Appearance	Oily, clear liquid	Odor	Odorless
Form	Liquid	Boiling Point	276 °C (529 °F) (93% solution)
Melting / Freezing Point	−29.5 °C (−21 °F) freezing point (93% solution)	Flash Point	Not applicable (non-flammable)
Specific Gravity	1.835	Solubility	High water solubility, miscible with polar solvents
Molecular Formula	H ₂ O ₄ S	Molecular Weight	98.08 g/mol
Vapor Pressure (20°C)	0.3 mmHg	Viscosity (25°C)	1.0 cP (liquid); note: highly concentrated acids may show apparent higher viscosity due to coning
Refractive Index (20°C)	1.406	Density (25°C)	1.84 g/mL

APPLICATIONS

- Energy Storage** — Functions as the critical electrolyte in lead-acid batteries, facilitating the chemical reactions necessary for reliable energy storage.
- Agriculture** — Acts as a primary reactant in the manufacturing of fertilizers, ensuring the efficient production of essential crop nutrients.
- Water Treatment** — Used effectively for pH adjustment in wastewater treatment facilities to neutralize alkaline streams and maintain environmental compliance.
- Chemical Synthesis** — Employed as a powerful dehydrating agent in organic synthesis, helping to drive complex chemical reactions forward.
- 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.

Alliance Chemical | 204 South Edmond St, Taylor, Texas 76574 | 512-365-6838 | www.alliancechemical.com

Disclaimer: The information contained herein is believed to be accurate and represents the best information currently available to us. However, Alliance Chemical makes no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes.