TECHNICAL DATA SHEET

Sulfuric Acid 93% Technical Grade

Revised: 02/20/2026

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 versatile chemical with a wide range of applications. This technical grade sulfuric acid boasts an assay of 93.2% and a low APHA color of 10, indicating high purity. It is commonly used as an electrolyte in lead-acid batteries and as a key reactant in chemical production.

Grade Significance: Technical Grade Sulfuric Acid 93% is suitable for industrial applications where high purity is required but not to the stringent levels of reagent or pharmaceutical grades. It offers a cost-effective solution for processes where trace impurities will not negatively impact the final product or process efficiency.

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 may show apparent higher viscosity due to coning
Refractive Index (20°C)	1.406	**Density (25°C)**	1.84 g/mL

APPLICATIONS

1. **Battery Manufacturing** — Serves as the electrolyte in lead-acid batteries, providing the necessary chemical environment for energy storage and discharge. Its controlled specific gravity ensures optimal battery performance.
2. **Chemical Synthesis** — Functions as a key reactant in the production of various chemicals, including fertilizers, explosives, and other industrial compounds. The high purity ensures efficient and predictable reaction outcomes.
3. **Wastewater Treatment** — Utilized to adjust pH levels in wastewater treatment processes, ensuring compliance with environmental regulations. Its consistent concentration allows for precise pH control.
4. **Metal Processing** — Used in metal pickling and cleaning processes to remove oxides and scale from metal surfaces. The controlled impurity levels, such as Iron (Fe) at 1 ppm, prevent unwanted side reactions.
5. **Laboratory Reagent** — Acts as a dehydrating agent in organic synthesis and various laboratory applications. The low residue after ignition (0.0020%) is critical for sensitive experiments.
6. **Textile Industry** — Employed in various stages of textile processing, including dyeing and finishing. Consistent quality and controlled impurity levels are important for achieving desired fabric properties.

STORAGE & HANDLING

Proper storage of Sulfuric Acid 93% is crucial due to its corrosive nature. It should be stored in tightly sealed, acid-resistant containers in a cool, dry, and well-ventilated area, away from incompatible materials. Exposure to moisture can generate heat and potentially release corrosive fumes, while contact with incompatible substances may lead to hazardous reactions.

- 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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