

PRODUCT IDENTIFICATION



Product Name: Sulfuric Acid 37% - Battery Acid

CAS Number: 7664-93-9

Molecular Formula: H₂O₄S

Molecular Weight: 98.08 g/mol

Grade: Laboratory Grade

Purity / Concentration: 37%

Synonyms: Battery Acid, Sulfuric Acid Solution

PRODUCT OVERVIEW

Alliance Chemical's Laboratory Grade Sulfuric Acid 37% (Battery Acid) is a clear, colorless liquid with a specific gravity of 1.283 g/mL (20°C). This high-quality solution, characterized by its low residue after ignition (0.0005 %), is primarily used as the electrolyte in lead-acid batteries. Its controlled purity ensures optimal battery performance and longevity.

Grade Significance: Laboratory Grade sulfuric acid indicates a high level of purity and adherence to strict quality control standards. This grade is suitable for applications requiring reliable and consistent results, such as research, analysis, and quality control testing.

CERTIFICATE OF ANALYSIS — TYPICAL VALUES

PARAMETER	UNIT	TYPICAL	MIN	MAX	TEST METHOD
Assay (wt%)	%	37.2	36.5	38.5	Titration with NaOH
Color (APHA)	APHA	10	—	20	ASTM D1209
Specific Gravity (20°C)	g/mL	1.283	—	—	Hydrometer
Residue After Ignition	%	0.0005	—	0.0010	Gravimetric
Heavy Metals (as Pb)	ppm	0.05	—	0.5	ICP-OES
Iron (Fe)	ppm	0.1	—	1	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	Clear, colorless liquid	Odor	Odorless
Form	Liquid	Boiling Point	337°C (639°F)
Melting / Freezing Point	10°C (50°F)	Flash Point	Non-flammable
Specific Gravity	1.284	Solubility	Fully miscible with water, many organic 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
Refractive Index (20°C)	1.406	Density (25°C)	1.2 g/mL

APPLICATIONS

1. **Energy Storage** — Sulfuric acid serves as the primary electrolyte in lead-acid batteries. It facilitates the flow of electrical current between the electrodes, enabling the battery to store and release energy efficiently.
2. **Chemical Manufacturing** — As a key reactant in chemical synthesis, sulfuric acid is used in the production of a wide array of chemicals, including fertilizers, explosives, and various industrial compounds. Its strong acidic properties make it an essential component in many chemical processes.
3. **Wastewater Treatment** — Sulfuric acid is employed to adjust and maintain the pH levels in wastewater treatment facilities. By carefully controlling the pH, it helps to optimize the effectiveness of various treatment processes, ensuring compliance with environmental regulations.
4. **Metal Processing** — In the metalworking industry, sulfuric acid is used in pickling processes to clean and prepare metal surfaces before further processing. It removes rust, scale, and other impurities, ensuring a clean surface for subsequent operations like plating or painting.
5. **Laboratory** — Used in educational and research laboratories as a reagent, titrant, and catalyst. Its known concentration allows for accurate and repeatable results.

STORAGE & HANDLING

Proper storage of sulfuric acid is crucial to maintain its purity and prevent hazardous situations. Because it causes severe skin burns and eye damage, containers should be stored in a cool, dry, and well-ventilated area, away from incompatible materials, to avoid spills and potential exposure. Always ensure containers are tightly sealed to prevent contamination and maintain concentration.

- 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 strong bases, organic materials, and reducing agents.
- Ensure proper PPE is worn, including gloves and eye protection, when handling.
- Use in a fume hood or well-ventilated area to minimize inhalation exposure.

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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