

PRODUCT IDENTIFICATION



Product Name: Aluminum Sulfate Hydrate ACS Grade

CAS Number: 7784-31-8

Molecular Formula: $\text{Al}_2\text{H}_{36}\text{O}_{30}\text{S}_3$

Molecular Weight: 666.4 g/mol

Grade: ACS Grade

Purity / Concentration: Not Available

Synonyms: Alum, Potassium Aluminum Sulfate

PRODUCT OVERVIEW

Aluminum Sulfate Hydrate ACS Grade is a high-purity crystalline powder essential for industrial and laboratory applications requiring strict quality control. With an assay of 100.0% and tightly controlled heavy metal limits, such as mercury below 1 ppm, this product ensures consistent performance in sensitive processes like water purification and chemical synthesis.

Grade Significance: The ACS Grade designation indicates that this product meets the rigorous specifications set by the American Chemical Society, guaranteeing a level of purity suitable for analytical chemistry and critical research applications.

CERTIFICATE OF ANALYSIS — TYPICAL VALUES

PARAMETER	UNIT	TYPICAL	MIN	MAX	TEST METHOD
Assay	%	100.0	99.5	100.5	Titration/Gravimetric
pH	—	3.63	2	3.8	pH Meter
Specific Gravity (20°C)	g/mL	1.3375	1.33	1.345	Hydrometer @ 20°C
Arsenic As	ppm	≤ 5 ppm	—	—	ICP-MS
Chromium Cr	ppm	≤ 5 ppm	—	—	ICP-OES
Heavy Metals As Pb	ppm	0.8	0	40	ICP-MS (as Pb)
Lead Pb	ppm	≤ 5 ppm	—	—	ICP-MS
Nickel Ni	ppm	1.5	0	20	ICP-OES
Cadmium Cd	ppm	≤ 5 ppm	—	—	ICP-MS
Insolubles	%	0.3	0	0.5	Filtration
Loss On Drying	%	22 – 25 %	—	—	Loss on Drying
Mercury Hg	ppm	≤ 1 ppm	—	—	ICP-MS
Particle Size	μm	10 – 100 μm	—	—	Sieve Analysis
Selenium Se	ppm	0.57	0	30	ICP-MS
Tin Sn	ppm	0.82	0	20	ICP-MS

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

PHYSICAL & CHEMICAL PROPERTIES

Appearance	White crystalline powder, granular texture	Odor	Odorless
Form	Solid	Boiling Point	187°C (368.6°F)
Melting / Freezing Point	86°C (186.8°F)	Specific Gravity	1.61
Solubility	High water solubility, moderate organic solvent	Molecular Formula	Al ₂ H ₃₆ O ₃₀ S ₃
Molecular Weight	666.4 g/mol	Density (25°C)	1.67 g/mL

APPLICATIONS

- 1. Water Treatment** — Functions as a highly effective coagulant to neutralize charges and remove suspended impurities from municipal and industrial water supplies.
- 2. Paper Manufacturing** — Used as a sizing agent to control ink penetration and enhance the overall durability and surface quality of paper products.
- 3. Textiles** — Acts as a mordant in dyeing processes to improve color fastness, ensuring vibrant and long-lasting results on various fabrics.
- 4. Food Processing** — Utilized as a firming agent to maintain the texture and crispness of pickled goods and canned vegetables during processing.

STORAGE & HANDLING

Aluminum Sulfate Hydrate must be stored in a cool, dry, and well-ventilated area to prevent moisture absorption and caking. Because the substance is corrosive to metals, it should be kept in original, corrosion-resistant containers to maintain structural integrity and ensure laboratory safety.

- Store in a cool, dry place away from moisture.
- Use appropriate personal protective equipment (PPE) such as gloves and goggles.
- Avoid contact with strong acids and bases to prevent reactions.
- Keep containers tightly closed when not in use to prevent contamination.
- Compatible with HDPE and glass containers.

AVAILABLE PACKAGING

- 2 lbs.
- 5 Lbs.
- 50 Lbs.

SAFETY SUMMARY (CROSS-REFERENCE TO SDS)

Signal Word: Danger



Hazard Statements:

- H290: May be corrosive to metals
- H318: Causes serious eye damage
- H412: Harmful to aquatic life with long lasting effects

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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