

### PRODUCT IDENTIFICATION



**Product Name:** Aluminum Sulfate Hydrate ACS Grade

**CAS Number:** 7784-31-8

**Molecular Formula:**  $Al_2H_{36}O_{30}S_3$

**Molecular Weight:** 666.4 g/mol

**Grade:** ACS Grade

**Purity / Concentration:** Not Available

**Synonyms:** Alum, Potassium Aluminum Sulfate

### PRODUCT OVERVIEW

Aluminum Sulfate Hydrate is a chemical compound with the formula  $Al_2(SO_4)_3 \cdot nH_2O$ , commonly used in various industrial applications. This compound is characterized by its high solubility in water and is primarily utilized in water treatment processes and as a coagulating agent.

### CERTIFICATE OF ANALYSIS — TYPICAL VALUES

| PARAMETER              | UNIT | TYPICAL | MIN | MAX    | TEST METHOD        |
|------------------------|------|---------|-----|--------|--------------------|
| Assay $Al_2O_3$ Wt Pct | %    | 17.1    | 17  | —      | Titration          |
| Arsenic (As)           | ppm  | 0.02    | —   | 0.2    | ICP-MS             |
| Heavy Metals (as Pb)   | ppm  | 0.1     | —   | 5      | ICP-MS             |
| Iron (Fe)              | %    | 0.2     | —   | 0.0010 | ICP-MS             |
| Potassium (K)          | %    | 1       | —   | 0.02   | ICP-MS             |
| Sodium (Na)            | %    | 2       | —   | 0.05   | ICP-MS             |
| Ammonium ( $NH_4^+$ )  | ppm  | 1       | —   | 5      | ISE                |
| Chloride ( $Cl^-$ )    | %    | 5       | —   | 0.0010 | ISE                |
| Nitrate ( $NO_3^-$ )   | ppm  | 0.5     | —   | 5      | Ion Chromatography |
| Insoluble Matter       | %    | 0.0020  | —   | 0.0050 | Gravimetric        |

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

### PHYSICAL & CHEMICAL PROPERTIES

|                                 |   |                          |                       |
|---------------------------------|---|--------------------------|-----------------------|
| <b>Appearance</b>               | White crystalline powder, granular texture      | <b>Odor</b>              | Odorless              |
| <b>Form</b>                     | Solid   | <b>Boiling Point</b>     | 187°C (368.6°F)       |
| <b>Melting / Freezing Point</b> | 86°C (186.8°F)                                  | <b>Specific Gravity</b>  | 1.61                  |
| <b>Solubility</b>               | High water solubility, moderate organic solvent | <b>Molecular Formula</b> | $Al_2H_{36}O_{30}S_3$ |
| <b>Molecular Weight</b>         | 666.4 g/mol                                     | <b>Density (25°C)</b>    | 1.67 g/mL             |

## APPLICATIONS

1. **Environmental Engineering** — Used as a coagulant in water purification to remove impurities and clarify water.
2. **Pulp and Paper** — Acts as a sizing agent to improve the quality and durability of paper products.
3. **Textiles** — Utilized in dyeing processes to enhance color retention and fabric quality.
4. **Food Industry** — Serves as a firming agent in food products such as pickles and canned vegetables.
5. **Analytical Chemistry** — Commonly used in various chemical analyses and experiments.

## STORAGE & HANDLING

- 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 (17.2%): May be corrosive to metals [Warning Corrosive to Metals]
- H318 (99.2%): Causes serious eye damage [Danger Serious eye damage/eye irritation]
- H412 (17.2%): Harmful to aquatic life with long lasting effects [Hazardous to the aquatic environment, long-term hazard]

**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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