

### PRODUCT IDENTIFICATION



**Product Name:** Aluminum Sulfate 50%  
**CAS Number:** 10043-01-3  
**Molecular Formula:**  $\text{Al}_2\text{O}_3 \cdot 12\text{S}_3$   
**Molecular Weight:** 342.2 g/mol  
**Grade:** Technical Grade  
**Purity / Concentration:** 50%  
**Synonyms:** Alum, Potassium Aluminum Sulfate

### PRODUCT OVERVIEW

Aluminum Sulfate 50% is a high-performance Technical Grade coagulant widely utilized for its exceptional purity and effectiveness in water treatment. With an assay of 8.1%  $\text{Al}_2\text{O}_3$  and extremely low levels of heavy metals, it provides reliable performance for industrial applications requiring consistent chemical stability.

**Grade Significance:** Technical Grade indicates that this product is manufactured for industrial use, offering a balance of high purity and cost-effectiveness suitable for large-scale operations.

### CERTIFICATE OF ANALYSIS — TYPICAL VALUES

| PARAMETER                         | UNIT | TYPICAL | MIN | MAX | TEST METHOD |
|-----------------------------------|------|---------|-----|-----|-------------|
| Assay $\text{Al}_2\text{O}_3$ Pct | %    | 8.1     | 8   | —   | Titration   |
| Ph 1 Pct Solution                 | %    | 3.2     | 2.5 | 3.5 | pH Meter    |
| Water Insoluble Matter            | %    | 0.02    | —   | 0.1 | Gravimetric |
| Arsenic (As)                      | ppm  | 0.1     | —   | 1   | ICP-OES     |
| Heavy Metals (as Pb)              | ppm  | 5       | —   | 10  | ICP-OES     |
| Iron (Fe)                         | ppm  | 20      | —   | 50  | ICP-OES     |

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

### PHYSICAL & CHEMICAL PROPERTIES

|                                 |                          |                                |  |
|---------------------------------|--------------------------|--------------------------------|--|
| <b>Appearance</b>               | White crystalline powder | <b>Odor</b>                    | Odorless                                   |
| <b>Form</b>                     | Solid                    | <b>Boiling Point</b>           | 150°C (302°F)                              |
| <b>Melting / Freezing Point</b> | 770°C (1418°F)           | <b>Specific Gravity</b>        | 1.33                                       |
| <b>Solubility</b>               | Highly water soluble     | <b>Molecular Formula</b>       | $\text{Al}_2\text{O}_3 \cdot 12\text{S}_3$ |
| <b>Molecular Weight</b>         | 342.2 g/mol              | <b>Vapor Pressure (20°C)</b>   | 0.001 mmHg (approx.)                       |
| <b>Viscosity (25°C)</b>         | 1.5 cP (typical)         | <b>Refractive Index (20°C)</b> | 1.335 (typical)                            |
| <b>Density (25°C)</b>           | 1.20 g/mL                |                                |  |

## APPLICATIONS

1. **Water Treatment** — Acts as a primary coagulant to effectively neutralize charges and remove suspended impurities from both drinking water and wastewater.
2. **Pulp and Paper** — Functions as a critical sizing agent that improves paper strength and enhances the overall quality of finished paper products.
3. **Textiles** — Utilized in dyeing processes to serve as a mordant, significantly improving color retention and fabric quality.
4. **Food Processing** — Serves as a specialized food additive used for the clarification of liquids in various food manufacturing processes.

## STORAGE & HANDLING

Proper storage is essential because this product is corrosive to certain metals and poses a risk of serious eye damage. It must be kept in a cool, dry area within appropriate containers to prevent container degradation and ensure the safety of personnel handling the material.

- Store in a cool, dry place away from direct sunlight.
- Use materials compatible with aluminum sulfate, such as HDPE or glass containers.
- Avoid contact with strong acids and bases to prevent hazardous reactions.
- Ensure proper ventilation when handling to avoid inhalation of vapors.

## 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:

- H290 (41.1%): May be corrosive to metals [Warning Corrosive to Metals]
- H318 (91.5%): Causes serious eye damage [Danger Serious eye damage/eye 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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