



# Aluminum Sulfate, Solution (Alum)

## Safety Data Sheet




### SECTION 1 – PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** Aluminum Sulfate, Solution  
**Other Name(s):** Alum  
**Chemical Family:** Inorganic, salt  
**Recommended Use:** Water treatment coagulant/flocculent, papermaking pH control  
**Manufacturer:** Chameleon Industries, Inc., P.O. Box 853027, Mesquite, TX 75185  
**More Information:** *Customer Service:* 972.880.1493 (Monday-Friday, 8:00am-5:00pm)  
*Email:* info@chameleonindustriesinc.com  
*Emergency:* call CHEMTREC, 1.800.424.9300 (24hr/day, 7 days/week)

### SECTION 2 – HAZARDS IDENTIFICATION

**Classification:** Skin Irritant 2, Eye Irritant 2A, Corrosion 1  
**Signal Word:** Warning  
**Hazard Statement:** May cause skin irritation; Causes serious eye irritation; Corrosive to metals  
**Symbol(s):** Exclamation mark, Corrosive



**Precautionary Statements**

*Prevention:* Wash hands, along with any other body parts that may have been exposed, thoroughly after handling. Wear protective gear to prevent contact with skin (Rubber gloves, aprons, slicker suit). Wear eye protection/face protection (clear goggles and face shield). Keep only in original container.

*Response:* If on skin: Wash with plenty of water. If skin irritation occurs: Get medical advice/attention. Refer to first-aid measures (section 4) for any specific treatment. Take off contaminated clothing and wash it before reuse. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: get medical attention. Absorb spillage to prevent material damage.

*Storage:* Store in compatible containers such as polypropylene, polyethylene, PVC, or 316 SS

**Other Hazards:** Ingestion or inhalation not recommended and could present hazards not otherwise classified.

### SECTION 3 – COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS No.	Weight Percent
Water	7732-18-5	50-52%
Aluminum Sulfate	10043-01-3	48-50%

### SECTION 4 – FIRST AID MEASURES

**Eye Contact:** Immediately flush eyes for at least 30 minutes. Remove contact lenses if worn. Get medical attention if irritation persists.

**Skin Contact:** Wash skin with soap and water. Remove contaminated clothing and shoes. If irritation develops, get medical attention.

**Inhalation:** If adverse effects occur, relocate to fresh air. Give artificial respiration if not breathing. If difficulty breathing, give oxygen and get medical attention.

**Ingestion:** Do not induce vomiting. Consume large quantities of water. Get medical attention immediately.

**SECTION 5 – FIRE FIGHTING MEASURES**

<b>Flammable Properties:</b>	Negligible fire hazard. Not flammable.
<b>Extinguishable Media:</b>	No unsuitable extinguishing media known.
<b>Explosion Limits:</b>	
<i>Impact Sensitivity:</i>	Not sensitive
<i>Static Discharge Sensitivity:</i>	Not sensitive
<b>Protective Equip &amp; Precaution:</b>	Wear self-contained breathing apparatus (SCBA) and full protective equipment. Poisonous gases may be produced in fire (aluminum and sulfur oxides). Use water spray to keep containers cool.

**SECTION 6 – ACCIDENTAL RELEASE MEASURES**

<b>Spill or Other Release:</b>	Stop leak if possible without personal risk. Dilute small spills or leaks cautiously with water. Large spills should be absorbed with sand, soda ash, or limestone. Adequate ventilation is required if soda ash or limestone is used, due to consequent release of carbon dioxide gas. Dispose of residue in accordance with applicable regulations.
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**SECTION 7 – HANDLING AND STORAGE**

<b>Handling:</b>	Avoid contact with eyes, skin, and clothing. Avoid breathing vapors or mist. Wash thoroughly after handling.
<b>Storage:</b>	Keep container tightly sealed when not in use. Store in cool, dry, well ventilated areas. Keep separated from incompatible substances.

**SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION**

<b>Component Exposure Limits:</b>	Aluminum Sulfate - 2mg/m <sup>3</sup> (ACGIH TLV and OSHA PEL)
<b>Ventilation:</b>	Provide local exhaust to keep airborne concentrations below exposure limits
<b>Personal Protective Equipment:</b>	
<i>Eyes/Face:</i>	Wear splash resistant safety goggles. Provide an emergency eye wash fountain and quick drench shower in the work area.
<i>Skin:</i>	Wear appropriate chemical resistant clothing and gloves. If prolonged or repeated contact is anticipated, all clothing should be impervious to liquid.
<i>Respiratory:</i>	If workplace conditions warrant respirator use a respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 or federal requirement.

**SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES**

<b>Appearance:</b>	Colorless, light green or light amber liquid
<b>Physical State:</b>	Liquid
<b>Odor:</b>	Negligible odor
<b>Chemical Formula:</b>	~48.5% Al <sub>2</sub> (SO <sub>4</sub> ) <sub>3</sub> 14H <sub>2</sub> O in water
<b>pH:</b>	1.8 – 2.5
<b>Specific Gravity:</b>	1.31 – 1.34
<b>Viscosity:</b>	25cps @ 68°F / 20°C
<b>Density:</b>	11.1 lb/gal
<b>Flash Point:</b>	Not applicable
<b>Boiling Point:</b>	228°F / 109°

**SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES (cont)**

<b>Melting Point:</b>	9°F / -13°C
<b>Flammability:</b>	Not applicable
<b>Autoignition Temperature:</b>	Not applicable
<b>Decomposition Temperature:</b>	1400°F
<b>Explosive Limits:</b>	No information available
<b>Evaporation Rate:</b>	Not determined
<b>Vapor Pressure:</b>	Not applicable
<b>Vapor Density:</b>	Not applicable
<b>%VOC:</b>	0.0
<b>Molecular Weight:</b>	594 for Al <sub>2</sub> (SO <sub>4</sub> ) <sub>3</sub> 14H <sub>2</sub> O
<b>Water Solubility:</b>	Complete (100%)

**SECTION 10 – STABILITY AND REACTIVITY**

<b>Chemical Stability:</b>	Stable at normal temperatures and pressure.
<b>Incompatible Products:</b>	Alkalis and water reactive materials cause violent exothermic reactions. Metals may be corrosive in the presence of moisture.
<b>Hazardous Decomposition Products:</b>	Thermal oxidative decomposition occurs at temperatures greater than 1400°F and can produce sulfur oxides. These are toxic, corrosive, and act as oxidizers.
<b>Possibility of Hazardous Reactions:</b>	Will not occur.

**SECTION 11 – TOXICOLOGICAL INFORMATION**

<b>Acute Toxicity:</b>	The acute oral LD50 is greater than 5,000 mg/kg.
<b>Chronic Toxicity:</b>	The acute oral LD50 is greater than 5,000 mg/kg.
<b>Symptoms of Overexposure:</b>	May cause skin and eye irritation. If inhaled, may cause headaches, nausea, and respiratory irritations.
<b>Carcinogenicity:</b>	Not listed as a carcinogen by NTP, IARC, or OSHA.
<b>Other Possible Health Hazards:</b>	The common recognized injury from Aluminum Sulfate is local tissue irritation. The irritating action is often from hydrolysis to form sulfuric acid and may occur from ingestion, skin or eye contact, or inhalation of dusts and mists. Remove victim from contaminated area.
<i>Eye &amp; Skin:</i>	May cause corneal burns or severe irritation in eyes. Fumes or mists may cause irritation or burns to skin.
<i>Ingestion:</i>	Oral and gastrointestinal irritation. Local tissue damage. Nausea, vomiting, diarrhea, and gastrointestinal bleeding may follow. Can be fatal if swallowed in sufficient quantities.
<i>Inhalation</i>	Irritation of the respiratory system. Long term exposure may cause bronchial irritation, coughing, and bronchial pneumonia. Medical conditions generally aggravated are acute and chronic respiratory diseases.
<b>Routes of Entry:</b>	Ingestion, skin or eye contact, or inhalation of dusts and mists.

## SECTION 12 – ECOLOGICAL INFORMATION

<b>Ecotoxicity:</b>	None of the material components are known to be hazardous to the environment or not degradable in waste water treatment plants.
<b>Aquatic Toxicity - Freshwater Fish:</b>	Aluminum Sulfate, LC50 – 100mg/L, Carassius auratus 96hr Aluminum Sulfate, LC50 – 37mg/L, Gambusia affinis 96hr
<i>Invertebrate:</i>	Aluminum Sulfate, EC50 – 136mg/L, Daphnia magna 15min
<i>Freshwater Algae:</i>	No data available.
<b>Persistence and Degradability:</b>	Can be eliminated from water by precipitation or flocculation
<b>Bioaccumulation:</b>	No data available.
<b>Mobility in Environmental Media:</b>	No data available.
<b>Other Adverse Effects:</b>	Aluminum Sulfate, 14ppm, Freshwater Fundulus 36hr Aluminum Sulfate, 235ppm, Mosquito fish 96hr Aluminum Sulfate, 250ppm, Largemouth Bass 96

## SECTION 13 – DISPOSAL CONSIDERATIONS

<b>Waste Disposal Methods:</b>	Dispose of waste in accordance with all federal, state, and local regulations.
<b>Component Waste Numbers:</b>	The U.S. EPA has not published waste numbers for this product's components.
<b>Contaminated Packaging:</b>	Empty containers should be taken for local recycling, recovery or waste disposal

## SECTION 14 – TRANSPORT INFORMATION

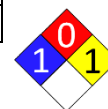
<b>US DOT &amp; TDG - Shipping Name:</b>	Environmentally Hazardous Substance, liquid, n.o.s. (contains Aluminum Sulfate)
<i>Hazard Class:</i>	9
<i>UN No.:</i>	UN3082
<i>Packing Group</i>	PGIII

## SECTION 15 – REGULATORY INFORMATION

**U.S. Federal Regulations:** Material (10043-01-3) contains one or more chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 311/312 (40 CFR 370.21), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), and/or require an OSHA process safety plan.

<b>SARA 311/312:</b>	Immediate	Delayed	Fire	Pressure	Reactivity
	Yes	No	No	No	No

**NFPA:** Health: 1 - Flammability: 0 - Instability: 1



## SECTION 16 – OTHER INFORMATION

<b>Current Issue Date:</b>	1 April 2016
<b>Previous Issue Date:</b>	1 June 2015
<b>Revision Summary:</b>	This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.

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**END OF SAFETY DATA SHEET**