



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

Emergency Overview: An odorless liquid with a clear to light green or amber appearance. May be harmful if swallowed. Can irritate the eyes and skin. Not flammable, but may release toxic vapors if decomposed in a fire.

OSHA Status: Considered hazardous material by OSHA Hazard Communication Standard (29 CFR 1910.1200)

Potential Health Affects:

- Skin:* May cause skin irritation and/or allergic reaction
- Eyes:* May strongly irritate or burn the eyes
- Inhalation:* Airborne mist may cause irritation to the respiratory tract. Can cause coughing, sore throat, difficulty breathing, and/or wheezing.
- Ingestion:* May irritate the gastrointestinal tract.

There are no delayed/long-term effects known at this time.

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 immediate medical attention.

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

SECTION 5 – FIRE FIGHTING MEASURES

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

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Spill or Other Release:	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

Handling:	Avoid contact with eyes, skin, and clothing. Avoid breathing vapors or mist. Wash thoroughly after handling.
Storage:	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

Component Exposure Limits:	Aluminum Sulfate - 2mg/m ³ (ACGIH TLV and OSHA PEL)
Ventilation:	Provide local exhaust to keep airborne concentrations below exposure limits
Personal Protective Equipment:	
<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>	When workplace conditions warrant respirator use a respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 or federal requirement must be followed.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Colorless, light green or light amber liquid
Physical State:	Liquid
Odor:	Negligible odor
Odor Threshold:	Not Applicable
Chemical Formula:	~48.5% Al ₂ (SO ₄) ₃ 14H ₂ O in water
pH:	1.8 – 2.5

Specific Gravity:	1.31 – 1.34
Viscosity:	25cps @ 68°F / 20°C
Density:	11.1 lb/gal
Flash Point:	Not applicable
Boiling Point:	228°F / 109°C
Melting Point:	9°F / -13°C
Flammability:	Not applicable
Autoignition Temperature:	Not applicable
Decomposition Temperature:	No information available
Explosive Limits:	No information available
Evaporation Rate:	Not determined
Vapor Pressure:	Not applicable
Vapor Density:	Not applicable
%VOC:	0.0
Molecular Weight:	594 for Al ₂ (SO ₄) ₃ 14H ₂ O
Water Solubility:	Complete (100%)

SECTION 10 – STABILITY AND REACTIVITY

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

SECTION 11 – TOXICOLOGICAL INFORMATION

Acute Toxicity:	Aluminum Sulfate, Oral LD50 – 1930 mg/kg (rat) Aluminum Sulfate, Oral LD50 – 6207 mg/kg (mouse) Water, Oral LD50 – >90 mL/kg (rat)
Component Analysis LD50/LC50:	
Inhalation (Acute):	Inhalation may cause irritation of mucous membranes with sore throat and cough due to sulfuric acid which is formed by the hydrolysis of the salt upon contact with moisture.
Ingestion (Acute):	Aluminum salts, particularly concentrated solutions (20%), may produce gingival necrosis and fatal hemorrhagic gastroenteritis, in coordination, colonic contractions, evidence of nephritis and death.
Skin (Acute):	Rarely causes skin sensitization. Material hydrolyzes readily with moisture to form some sulfuric acid which may produce irritation, dermatosis and eczema. Excessive formation of sulfuric acid may produce possible burns.
Eye (Acute):	May cause irritation, redness, and corneal burns due to the reaction of the compound with moisture to form sulfuric acid.

Chronic Toxicity:	
<i>Inhalation (Chronic):</i>	Repeated or prolonged exposure may cause bronchial irritation, leading to nocturnal wheezing, and breathlessness. No data available.
<i>Ingestion (Chronic):</i>	Repeated or prolonged contact with some soluble salts of aluminum results in acid irritation from hydrolysis. A congestive, anesthetic condition of the fingers (acroanesthesia) may occur from prolonged contact.
<i>Skin (Chronic):</i>	
<i>Eye (Chronic):</i>	Repeated or prolonged contact with irritants may cause conjunctivitis or effects similar to those for acute exposure.
Component Carcinogenicity:	None of the material components are known to be carcinogenic.

SECTION 12 – ECOLOGICAL INFORMATION

Ecotoxicity:	None of the material components are known to be hazardous to the environment or not degradable in waste water treatment plants.
Aquatic Toxicity:	
<i>Freshwater Fish:</i>	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.
Persistence and Degradability:	No data available.
Bioaccumulation:	No data available.
Mobility in Environmental Media:	No data available.
Other Adverse Effects:	Aluminum Sulfate, 14ppm, Freshwater Fundulus 36hr Aluminum Sulfate, 240ppm, Mosquito fish 48hr Aluminum Sulfate, 235ppm, Mosquito fish 96hr Aluminum Sulfate, 250ppm, Largemouth Bass 96hr

SECTION 13 – DISPOSAL CONSIDERATIONS

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

SECTION 14 – TRANSPORT INFORMATION

US DOT & TDG:	
<i>Shipping Name:</i>	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 of the following 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.

SARA 311/312:

Acute Health Hazard: Yes
Chronic Health Hazard: No
Fire Hazard: No
Sudden Release of Pressure Hazard: No
Reactive Hazard: No

U.S. State Regulations: Material appears on the following state right-to-know hazardous substance lists: California (*does not contain any Proposition 65 chemicals*), Massachusetts, New Jersey, Pennsylvania, Florida (*related to Aluminum*), and Minnesota (*related to Aluminum, soluble salts*)

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



SECTION 16 – OTHER INFORMATION

Current Issue Date: 1 June 2015
Previous Issue Date: 1 June 2014
Revision Summary: New SDS compliance

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END OF SAFETY DATA SHEET