Safety Data Sheet · OSHA HCS 2024

Aluminum Sulfate 50%

Technical · 50% w/w

Standard	Revised	Emergency
OSHA HCS 2024 · GHS Rev. 7	2026-11-12	Chemtel 1-800-255-3924 (24/7)

1 Identification

Product Identifier	Aluminum Sulfate 50%
Grade	Technical
Concentration	50% w/w
CAS Number	10043-01-3
Chemical Formula	`Al2(SO4)3`
Manufacturer	Alliance Chemical 204 South Edmond Street, Taylor, TX 76574
Emergency Phone	Chemtel 1-800-255-3924 (24/7)
Synonyms	Liquid alum; alum solution; aluminum sulfate solution; sulfuric acid, aluminum salt (3:2)
Recommended Use	Coagulant and flocculant for water and wastewater treatment; paper sizing; pH reduction (pools, soil).
Restrictions on Use	For industrial and professional use. Potable-water use only where the specific lot is certified to NSF/ANSI 60.

2 Hazard Identification



Corrosive

Classification

Corrosive to metals, Category 1

Skin corrosion/irritation, Category 1

Serious eye damage/eye irritation, Category 1

Signal Word

Danger

Hazard Statements

H290 May be corrosive to metals

H314 Causes severe skin burns and eye damage

Precautionary Statements

P234 Keep only in original packaging.

P260 Do not breathe dust, fume, gas, mist, vapors or spray.

P261 Avoid breathing dust, fume, gas, mist, vapors or spray.

P264 Wash hands and face thoroughly after handling.

P271 Use only outdoors or in a well-ventilated area.

P280 Wear protective gloves, protective clothing, and eye/face protection.

P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310 Immediately call a POISON CENTER or doctor.

P321 Specific treatment (see first-aid information on this label).

P363 Wash contaminated clothing before reuse.

P390 Absorb spillage to prevent material damage.

P391 Collect spillage.

P405 Store locked up.

P406 Store in a corrosion resistant container with a resistant inner liner.

P501 Dispose of contents and container in accordance with local, regional, national, and international regulations.

Classification, hazard (H) and precautionary (P) statements and pictograms per OSHA HCS 2024 (29 CFR 1910.1200, Appendices A–C), aligned with GHS Rev. 7.

3 Composition / Information on Ingredients

Component	CAS No.	Formula	Concentration
Aluminum sulfate (as Al2(SO4)3·14H2O)	10043-01-3	Al2(SO4)3·14H2O	46-50% (w/w)
Water	7732-18-5	H2O	Balance (w/w)

Concentrations are nominal; lot-specific values appear on the Certificate of Analysis. Components not contributing to classification are omitted.

4 First-Aid Measures

Eyes

Rinse with plenty of water for at least 15 minutes. Remove contact lenses if present and easy to do. Continue rinsing. Seek medical attention immediately.

Skin

Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing. Wash with soap. Get medical attention immediately.

Inhalation

Move person to fresh air and keep comfortable for breathing. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention immediately.

Ingestion

Do Not Induce Vomiting! Never give anything by mouth to an unconscious person. If conscious, wash out mouth with water. Get medical attention immediately.

Most Important Symptoms and Effects

Causes burns to the skin, eyes and mucous membranes; eye contact may cause permanent damage including blindness; ingestion burns the mouth, throat and stomach.

Immediate Medical Attention and Special Treatment

Immediate medical attention is required after eye or skin contact or ingestion; tissue damage may continue after exposure ends.

5 Fire-Fighting Measures

Suitable Extinguishing Media

Dry chemical, CO2, water spray. Use water spray to cool containers.

Unsuitable Extinguishing Media

Do not use a solid water stream as it may scatter and spread fire.

Specific Hazards Arising from the Chemical	Fire may release corrosive and toxic gases. Containers may rupture when heated.
Protective Equipment	Wear self-contained breathing apparatus and full protective clothing.
Hazardous Combustion Products	Sulfur oxides (SO2, SO3) when boiled to dryness or heated above about 600 °C.

6 Accidental Release Measures

Personal Precautions	Use PPE as described in Section 8. Ensure adequate ventilation. Evacuate personnel to safe areas.
Hazard-Specific Precautions	Do not touch spilled material without protective equipment. Neutralize residue only with a method suitable for the material, then collect.
Environmental Precautions	Prevent leakage or spillage from entering drains, sewers, or waterways.
Containment & Cleanup	Absorb with inert material. Collect in appropriate waste container. Dispose per applicable regulations.

7 Handling and Storage

Safe Handling	Use with adequate ventilation. Avoid contact with skin, eyes, and clothing. Wash thoroughly after handling. Keep container closed when not in use.
Safe Storage	Store in a cool, dry, well-ventilated area. Use corrosion-resistant containers. Keep away from incompatible materials (see Section 10). Keep containers tightly closed.
Specific Storage Precautions	Store in closed polyethylene, fiberglass or rubber-lined steel tanks or containers, never bare mild steel, aluminum or galvanized. Protect from freezing.

8 Exposure Controls / Personal Protection

Occupational Exposure Limits

Limit	Value
OSHA PEL	2 mg/m^3 TWA (Al)
NIOSH REL	2 mg/m^3 TWA (Al)

Engineering Controls	Use adequate ventilation. Provide eyewash stations and quick-drench showers accessible to areas of use.
Eye/Face Protection	Wear chemical safety goggles or face shield.
Skin Protection	Wear chemical-resistant gloves and protective clothing.
Respiratory Protection	Where mist, spray or dust is generated (e.g., spraying, atomization, pressure washing), use a NIOSH-approved half-face air-purifying respirator with combination acid gas / P100 cartridges. Ensure local exhaust ventilation.

Exposure limits sourced from NIOSH Pocket Guide, OSHA 29 CFR 1910.1000 and ACGIH TLVs.

9 Physical & Chemical Properties

Appearance	Clear, colorless to slightly amber liquid
Odor	Odorless

Odor Threshold	No data available
pH	1.4–2.6
Melting Point / Freezing Point	-16 to -15 °C (3 to 5 °F), freezing point (aqueous solution)
Boiling Point	101 °C (214 °F) (aqueous solution)
Flash Point	Not applicable
Evaporation Rate	No data available
Flammability (solid, gas)	No data available
Upper/Lower Flammability or Explosive Limits	No data available
Vapor Pressure	Similar to water (about 17 mmHg at 20 °C)
Vapor Density	No data available
Relative Density	No data available
Solubility	Completely miscible with water
Partition Coefficient (n-octanol/water)	No data available
Auto-ignition Temperature	No data available
Decomposition Temperature	No data available
Viscosity	No data available
Particle Characteristics	Not applicable
Form	Liquid
Density	1.33 g/cm^3 (50% w/w aqueous solution, 20 °C)

Values shown reflect product-specific canonical data. Lot-specific ranges may vary; see the Certificate of Analysis for the shipped lot.

10 Stability and Reactivity

Reactivity	May be corrosive to metals.
Chemical Stability	Stable under recommended storage conditions.
Possibility of Hazardous Reactions	None under normal processing conditions.
Conditions to Avoid	Freezing (freezes near -15 °C / 5 °F); contact with incompatible metals and bases.
Incompatible Materials	Bases and alkalis (heat, aluminum hydroxide precipitate); non-acid-proof metals such as aluminum, copper, iron, mild steel and galvanized surfaces (corrosion, hydrogen); strong reducing agents.
Hazardous Decomposition Products	Sulfur oxides (SO2, SO3) when boiled to dryness or heated above about 600 °C.

11 Toxicological Information

See below for route-specific acute toxicity data.

Likely Routes of Exposure	Inhalation, skin contact, eye contact, ingestion.
Symptoms	Causes burns to the skin, eyes and mucous membranes; eye contact may cause permanent damage including blindness; ingestion burns the mouth, throat and stomach.
Delayed and Chronic Effects	No delayed or chronic effects identified beyond the classification in Section 2.

Route	Value

Route	Value
LD50 Oral (rat)	1,930 to > 5,000 mg/kg (aluminum sulfate); product ATE about 3,900 mg/kg

Carcinogen Classification

Agency	Status
IARC	Not listed as carcinogen.
NTP	Not listed as carcinogen.
OSHA	Not listed as carcinogen.

12 Ecological Information

Ecotoxicity
Algae ErC50: > 25 mg/L (22 h, Aphanizomenon flos-aquae (cyanobacteria; static)); Aquatic invertebrates EC50: 6.57 mg/L (48 h, Asellus aquaticus (isopod crustacean; renewal); 72-h 4.37 mg/L)

Persistence & Degradability
Aquatic toxicity strongly pH-dependent via aluminum speciation (free/hydrolyzed Al^{3+} most toxic); endpoints vary with test pH

Bioaccumulative Potential
Not Available

Mobility in Soil
Not Available

13 Disposal Considerations

Dispose of contents/container in accordance with applicable federal, state, and local regulations. Do not dispose of into drains or waterways.

EPA RCRA Waste Codes
D002 (corrosive) when the waste has a pH of 2 or less (40 CFR 261.22). Not a P- or U-listed waste.

If discarded, this material may be a corrosive hazardous waste (EPA RCRA D002, 40 CFR 261.22): aqueous with pH ≤ 2 or ≥ 12.5, or a liquid that corrodes steel at more than 6.35 mm per year. The waste generator must make the final hazardous-waste determination.

14 Transport Information

US DOT (49 CFR)

UN Number
UN3264

Proper Shipping Name
Corrosive liquid, acidic, inorganic, n.o.s. (Aluminum sulfate solution)

Hazard Class
8

Packing Group
III

Additional US DOT Requirements
UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Aluminum sulfate), 8, III. Not a marine pollutant.

IMDG / IATA classifications may differ from US DOT. Verify current regulations before international shipment.

15 Regulatory Information

Inventory / List	Status

Inventory / List	Status
California Proposition 65	Not listed
US EPA TSCA Active Inventory	Listed
EPCRA SARA 313 (TRI)	Not listed
CERCLA Reportable Quantity (RQ)	Aluminum sulfate (CAS 10043-01-3) 5,000 lb (2,270 kg). No single Alliance package reaches it.

SARA 311/312 hazard categories correspond to the GHS classification in Section 2. Data retrieved as of: California Proposition 65 2026-11-02; US EPA TSCA Active Inventory 2026-11-02; EPCRA SARA 313 (TRI) 2026-11-02.

16 Other Information

Revision Date	2026-11-12
Format	16-section format per OSHA HCS 2024 (29 CFR 1910.1200, Appendix D), aligned with GHS Rev. 7.

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