

# Aluminum Sulfate Solution, 7 % Acid

SDS No. 013  
30 May 2017

## Safety Data Sheet

### IDENTIFICATION

#### Product Identifier

**Product Name** Aluminum Sulfate Solution

#### Manufacturer

USALCO, LLC  
2601 Cannery Ave  
Baltimore, MD 21226

#### Other means of identification

**USALCO SDS #** 013  
**UN/ID No** UN3264  
**Synonyms** Acid Alum

#### Recommended use of the chemical and restrictions on use

**Recommended Use** Water treatment coagulant, flocculent, alumina source for catalyst, pH control in papermaking/water treatment.

#### Emergency Telephone Number

**Company Phone Number** 410-918-2230  
**Emergency Telephone (24 hr)** 800-282-5322

### 2. HAZARDS IDENTIFICATION

**Appearance** Colorless to clear amber or clear light green liquid

**Physical State** Liquid

**Odor** Negligible

#### Signal Word

Danger

#### Hazard Statements

Causes skin severe skin burns and serious eye damage

#### Precautionary Statements - Prevention

Avoid breathing mist. Wash hands and any exposed skin thoroughly after handling. Wear protective gloves and clothing, eye/face protection.

#### Precautionary Statements - Response

If swallowed: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

Wash contaminated clothing 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.

#### Precautionary Statements - Storage

Store in corrosive resistant plastic or FRP container or container with corrosive resistant inner liner.

#### Precautionary Statements - Disposal

Dispose in accordance with all applicable regulations. Subject to disposal regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): D002 (Corrosive) if the pH is <2. May be D002 under §261.22(a)(2) due to the rate of corrosion of metal.



### 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Chemical Family** Inorganic Salt.

Chemical Name	CAS No	Weight-%
Water	7732-18-5	50-55
Aluminum sulfate	10043-01-3	41-45
Sulfuric acid	7664-93-9	7

**4. FIRST-AID MEASURES****First Aid Measures**

<b>Eye Contact</b>	If in eyes: Rinse with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a doctor/physician if irritation continues.
<b>Skin Contact</b>	Flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops or persists. Wash clothing before reuse.
<b>Inhalation</b>	If adverse effects occur, remove to fresh air and observe. If not breathing, give artificial respiration. Seek immediate medical attention/advice.
<b>Ingestion</b>	If swallowed, do not induce vomiting. Rinse mouth. Get immediate medical attention.

**Most important symptoms and effects**

<b>Symptoms</b>	Harmful if swallowed, will cause skin burns, eye burns, mucous membrane burns, respiratory system damage.
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**Indication of any immediate medical attention and special treatment needed**

<b>Notes to Physician</b>	Treat symptomatically.
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**5. FIRE-FIGHTING MEASURES****Suitable Extinguishing Media**

Aluminum Sulfate will not burn. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

<b>Small Fire</b>	Move containers from fire area if you can do it without risk. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas.
<b>Large Fire</b>	Same procedures as for small fires.

**Specific Hazards Arising from the Chemical**

Negligible fire hazard.

<b><u>Hazardous Decomposition Products</u></b>	Oxides of sulfur.
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<b><u>Sensitivity to Mechanical Impact</u></b>	Not sensitive.
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<b><u>Sensitivity to Static Discharge</u></b>	Not sensitive.
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**Protective equipment and precautions for firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Do not release runoff from fire control methods to sewers or waterways.

**6. ACCIDENTAL RELEASE MEASURES****Personal precautions, protective equipment and emergency procedures**

<b>Personal Precautions</b>	Use personal protection recommended in Section 8. Keep unnecessary people away, isolate hazard area and deny entry.
<b>Environmental Precautions</b>	Do not release into sewers or waterways. For spills in excess of allowable limits (RQ) notify the National Response Center (800) 424-8802; refer to SARA Title III, Section 313 40 CFR 372, and CERCLA 40 CFR 302 for detailed instructions concerning reporting requirements. Notify Local Emergency Planning Committee (LEPC) and State Emergency Response Commission (SERC) for

a release greater than or equal to Reportable Quantities (RQ). Refer to U.S. SARA Section 304. See Section 12 for additional Ecological Information.

#### **Methods and material for containment and clean up**

<b>Methods for Containment</b>	Prevent further leakage or spillage if safe to do so.
<b>Methods for Clean-Up</b>	Small Spills: Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal.

### **7. HANDLING AND STORAGE**

#### **Precautions for safe handling**

<b>Advice on Safe Handling</b>	Avoid contact with skin, eyes or clothing. Handle in accordance with good industrial hygiene and safety practice. Wash face, hands and any exposed skin thoroughly after handling. Store and handle in accordance with all current regulations and standards.
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#### **Conditions for safe storage, including any incompatibilities**

<b>Storage Conditions</b>	Keep container tightly closed and store in a cool, dry and well-ventilated place. Store with acids. See original container for storage recommendations. Store away from incompatible materials.
<b>Incompatible Materials</b>	Alkalis, metals. Alkalis (bases): Violent reaction. Metals: May be corrosive in the presence of moisture.

### **8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

<b>Exposure Guidelines</b>	No exposure limits noted for aluminum sulfate Sulfuric acid, ACGIH: 0.2 mg/m <sup>3</sup> TWA Exposure Limits for aluminum metal NIOSH REL - TWA 10 mg/m <sup>3</sup> (total) TWA 5 mg/m <sup>3</sup> (resp) OSHA PEL - TWA 15 mg/m <sup>3</sup> (total) TWA 5 mg/m <sup>3</sup> (resp)
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#### **Appropriate engineering controls**

<b>Engineering Controls</b>	Apply technical measures to comply with the occupational exposure limits. Ensure adequate ventilation, especially in confined areas. Maintain eye wash fountain and quick-drench facilities in work area.
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#### **Individual protection measures, such as personal protective equipment**

<b>Eye/Face Protection</b>	Wear chemical tight goggles and full face shield.
<b>Skin and Body Protection</b>	Wear appropriate chemical resistant clothing including chemical resistant gloves.
<b>Respiratory Protection</b>	Seek professional advice prior to respirator selection and use. Select respirator based on its suitability to provide adequate worker protection for given working conditions, level of airborne contamination, and presence of sufficient oxygen. WARNING!: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.
<b>General Hygiene Considerations</b>	Handle in accordance with good industrial hygiene and safety practice.

**9. PHYSICAL AND CHEMICAL PROPERTIES****Information on basic physical and chemical properties**

Appearance	Colorless to clear amber or clear light green liquid
Odor	Negligible
Odor threshold	Not determined
pH	1.9±0.4
Relative density; (specific gravity)	1.3± @15.5 °C
Melting point/freezing point	-13° C / 9° F
Initial boiling point and boiling range	Not relevant
Decomposition temperature	1,400° F ±
Viscosity	5-25 centipoise
Auto-ignition temperature	Not flammable
Evaporation rate;	Similar to water
Flammability (solid, gas)	Not flammable
Flash point	Will not burn
Upper/lower flammability or explosive limits	Will not burn
Partition coefficient: n-octanol/water	Not relevant
Solubility	Soluble in water
Vapor density	Similar to water
Vapor pressure	Similar to water

**10. STABILITY AND REACTIVITY****Reactivity**

Not reactive under normal conditions.

**Chemical Stability**

Stable under recommended storage conditions.

**Possibility of Hazardous Reactions**

None under normal processing.

**Hazardous Polymerization**

Hazardous polymerization does not occur.

**Conditions to Avoid**

Protect from freezing. Keep separated from incompatible substances.

**Incompatible Materials**

Alkalis, metals. Alkalis (bases): Violent reaction. Metals: May be corrosive in the presence of moisture.

**Hazardous Decomposition Products**

Thermal oxidative decomposition of Aluminum Sulfate occurs at temperatures greater than 1400°F and can produce sulfur oxides.

## 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

<b>Eye Contact</b>	Causes serious eye damage.
<b>Skin Contact</b>	May cause severe skin burns
<b>Inhalation</b>	Avoid breathing vapors or mists.
<b>Ingestion</b>	Do not taste or swallow. May be harmful if swallowed.

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Aluminum Sulfate 10043-01-3	1930 mg/kg (Rat)	-	-
Sulfuric acid 7664-93-9	2140 mg/kg; (Rat)		510 mg/m <sup>3</sup> (Rat)
Water 7732-18-5	> 90 mL/kg (Rat)	-	-

Information on physical, chemical and toxicological effects

**Symptoms** Please see section 4 of this SDS for symptoms.

Delayed and immediate effects as well as chronic effects from short and long-term exposure**Component Carcinogenicity****Sulfuric acid (7664-93-9)**

**ACGIH:** A2 - Suspected Human Carcinogen (contained in strong inorganic acid mists)

**IARC:** Monograph 54 [1992] (Occupational exposure to mists and vapours from sulfuric acid and other strong inorganic acids) (Group 1 (carcinogenic to humans))

**DFG:** Category 4 (no significant contribution to human cancer)

Numerical measures of toxicity

Not determined

## 12. ECOLOGICAL INFORMATION

EcotoxicityComponent Information

Chemical Name	Algae/aquatic plants	Fish	Invertebrate	Crustacea
Aluminum Sulfate 10043-01-		100: 96 h Carassius auratus mg/L LC50 37: 96 h Gambusia affinis mg/L LC50 static		136: 15 min Daphnia magna mg/L EC50
Sulfuric acid (7664-93-9)		96 Hr LC50 Brachydanio rerio: >500 mg/L [static]	24 Hr EC50 Daphnia magna: 29 mg/L	

Persistence/Degradability

Not determined

Bioaccumulation

Not determined

Mobility

Not determined

**Other Adverse Effects**

Not determined

**13. DISPOSAL CONSIDERATIONS****Waste Treatment Methods**

**Disposal of Wastes** Disposal should be in accordance with applicable regional, national and local laws and regulations.

**Contaminated Packaging** Disposal should be in accordance with applicable regional, national and local laws and regulations.

**US EPA Waste Number**

EPA Hazardous Waste Code: D002 (Corrosive) if the pH is <2. May be D002 per 40CFR261.22(a)(2) due to the rate of corrosion of steel. The U.S. EPA has not published waste codes for this products components.

**14. TRANSPORT INFORMATION****Note**

Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances. Information also applies to TDG, ADR and RID.

**DOT**

**UN/ID No** UN3264  
**Proper Shipping Name** Corrosive liquid, acidic, inorganic, n.o.s., (Aluminum Sulfate)  
**Hazard Class** 8  
**Packing Group** III  
**Reportable Quantity (RQ)** 5000 lb

**IATA**

**UN/ID No** UN3264  
**Proper Shipping Name** Corrosive liquid, acidic, inorganic, n.o.s., (Aluminum Sulfate)  
**Hazard Class** 8  
**Packing Group** III

**IMDG**

**UN/ID No** UN3264  
**Proper Shipping Name** Corrosive liquid, acidic, inorganic, n.o.s., (Aluminum Sulfate)  
**Hazard Class** 8  
**Packing Group** III

## 15. REGULATORY INFORMATION

International Inventories

Not determined

**Component Analysis****U.S. Federal Regulations**

This material contains one or more of the following chemicals required to be identified under SARA Sections 302/304 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), and/or require an OSHA process safety plan.

**ALUMINUM SULFATE (10043-01-3)**

**CERCLA:** 5000 lb RQ; 2270 kg RQ

**SULFURIC ACID (7664-93-9)**

**SARA 302:** 1000 lb TPQ

**SARA 313:** 1.0 % de minimis concentration (acid aerosols including mists, vapors, gas, fog, and other airborne forms of any particle size)

**CERCLA:** 1000 lb RQ; 454 kg RQ

**SARA 311/312 Hazardous Categories**

**Acute Health:** Yes **Chronic Health:** Yes **Fire:** No **Pressure:** No **Reactive:** No

## 16. OTHER INFORMATION

	Health Hazards	Flammability	Instability	Special Hazards
NFPA	1	0	0	Not determined

**Issue Date** 20-Sep-2011  
**Revision Date:** 30 May 2017  
**Revision Note** New format

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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