

# Aluminum Chloride, Solution

SDS No. 500  
3-Mar-2015

## Safety Data Sheet

### 1. IDENTIFICATION

**Product Identifier**

**Product Name** Aluminum Chloride, Solution

**Manufacturer**

USALCO, LLC  
2601 Cannery Ave  
Baltimore, MD 21226

**Other means of identification**

**SDS #** 500

**UN/ID No** UN2581

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

**Recommended Use** Water treatment chemical.

**Emergency Telephone Number**

**Company Phone Number** 410-918-2230

**Emergency Telephone (24 hr)** 800-282-5322

### 2. HAZARDS IDENTIFICATION

**Appearance** Viscous colorless to yellow liquid  
Normally clear but may be hazy

**Physical State** Liquid

**Odor** Negligible to hydrogen chloride

**Classification**

Acute toxicity - Oral	Category 4
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2B

**Signal Word**

**Danger**

**Hazard Statements**

Causes skin irritation and serious eye damage  
May be corrosive to metals

**Precautionary Statements - Prevention**

Do not breathe dusts or mists.  
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 a secure area.  
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): May be D002 under §261.22(a)(2) due to the rate of corrosion of metal.



**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Chemical Name	CAS No	Weight-%
Water	7732-18-5	70-85
Aluminum chloride	7446-70-0	15-30
Hydrochloric acid	7647-01-0	0-1

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

<b>General Advice</b>	After first aid, get appropriate in-plant, paramedic, or community medical support.
<b>Eye Contact</b>	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Seek immediate medical attention/advice.
<b>Skin Contact</b>	Wash off immediately with plenty of water. Take off contaminated clothing. Wash contaminated clothing before reuse. Seek medical attention if there is any indication of a chemical burn.
<b>Inhalation</b>	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention immediately.
<b>Ingestion</b>	Do not induce vomiting. Rinse mouth. Drink large amounts of water. Seek medical attention immediately.

**Most important symptoms and effects**

<b>Symptoms</b>	May cause eye burns and permanent eye damage. Prolonged contact may even cause severe skin irritation or mild burn. May cause blurred vision, redness, watering and burning of the eyes. Skin exposure is characterized by itching, scaling, reddening, or, occasionally, blistering. Inhalation may cause coughing, wheezing, or shortness of breath. May cause irritation to the mucous membranes and upper respiratory tract.
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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**

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Unsuitable Extinguishing Media** Not determined.

**Specific Hazards Arising from the Chemical**

Combustion products may be toxic.

**Hazardous Combustion Products** Hydrogen chloride. Chlorine gas.

**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. Use water spray to keep fire-exposed containers cool. Do not release runoff from fire control methods to sewers or waterways.

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

**Personal Precautions** Use personal protective equipment as required.

**Environmental Precautions** Do not release into sewers or waterways.

**Methods and material for containment and cleaning up**

**Methods for Containment** Prevent further leakage or spillage if safe to do so.

**Methods for Clean-Up**

Small Spills: If directed to an industrial sewer, wash down with large volumes of water. Spills can be neutralized and absorbed with soda ash or lime, but neutralization will release carbon dioxide, which can generate a breathing hazard. Dike far ahead of liquid spill for later disposal. Contain large spills and pump into a suitable tank for disposal. Neutralize with a lime or soda ash and flush area with large amounts of water. Adequate ventilation is required due to release of Carbon Dioxide.

## 7. HANDLING AND STORAGE

**Precautions for safe handling****Advice on Safe Handling**

Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Do not breathe dust/fume/gas/mist/vapors/spray. Use personal protection recommended in Section 8. Ensure that all containers are labeled in accordance with OSHA regulations. Avoid contact with metal, as product will slowly corrode iron, brass, copper, aluminum and mild steel. Avoid contact with skin and eyes. Hydrochloric acid vapor may accumulate in storage containers.

**Conditions for safe storage, including any incompatibilities****Storage Conditions**

Keep containers tightly closed in a dry, cool and well-ventilated place. Store locked up. Store away from incompatible materials.

**Packaging Materials**

Store in rubber-lined, plastic or FRP vessels.

**Incompatible Materials**

Strong bases. Alcohols. Organic materials. Ammonia. Will react with most metals (aluminum, iron, zinc, tin, etc.) to release flammable hydrogen gas.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Exposure Guidelines**

No exposure limits noted for product.  
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)

**Appropriate engineering controls****Engineering Controls**

Local exhaust ventilation recommended. Eyewash stations. Showers.

**Individual protection measures, such as personal protective equipment****Eye/Face Protection**

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133. Contact lenses are not eye protective devices. Appropriate eye protection must be worn instead of, or in conjunction with, contact lenses.

**Skin and Body Protection**

Wear appropriate clothing to prevent repeated or prolonged skin contact.

**Respiratory Protection**

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.

**General Hygiene Considerations**

Contaminated Equipment: Separate contaminated work clothes from street clothes. Launder before reuse. Remove this material from your shoes and clean personal protective equipment. Never eat, drink, or smoke in work areas. Practice good personal hygiene after using this material, especially before eating, drinking, smoking, using the toilet, or applying cosmetics.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Information on basic physical and chemical properties**

Appearance	Viscous colorless to yellow liquid. Normally clear but may be hazy
Odor	Negligible
Odor threshold	Not determined
pH	<1.0
Relative density; (specific gravity)	±1.2 (1=Water) @4° C

Melting point/freezing point	-34° C / -30° F
Initial boiling point and boiling range	> 110° C / >230° F
Decomposition temperature	±120° C / 250° F
Viscosity	10 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

Not compatible with strong bases (such as sodium hydroxide and potassium hydroxide); alcohols, organic materials (such as wood, paper, leather) and ammonia. Mixing may generate heat, spattering or boiling and toxic vapors.

**Hazardous Polymerization** Hazardous polymerization does not occur.

### Conditions to Avoid

Contact with incompatible materials.

### Incompatible Materials

Strong bases. Alcohols. Organic materials. Ammonia. Will react with most metals (aluminum, iron, zinc, tin, etc.) to release flammable hydrogen gas.

### Hazardous Decomposition Products

Hydrogen chloride. Chlorine gas.

## 11. TOXICOLOGICAL INFORMATION

### Information on likely routes of exposure

#### Product Information

<b>Eye Contact</b>	Causes severe eye damage.
<b>Skin Contact</b>	Causes severe skin burns.
<b>Inhalation</b>	Avoid breathing vapors or mists.
<b>Ingestion</b>	Harmful if swallowed.

### Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Aluminum chloride 7446-70-0	= 380 mg/kg ( Rat )	> 2 g/kg ( Rabbit )	-
Hydrochloric acid 7647-01-0	= 700 mg/kg ( Rat )	> 5010 mg/kg ( Rabbit )	= 3124 ppm ( Rat ) 1 h

### 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**

**Carcinogenicity** Not classifiable as a human carcinogen.

Chemical Name	ACGIH	IARC	NTP	OSHA
Hydrochloric acid 7647-01-0		Group 3		

**Legend****IARC (International Agency for Research on Cancer)**

Group 3 IARC components are "not classifiable as human carcinogens"

**STOT - repeated exposure** Causes damage to organs through prolonged or repeated exposure.**Numerical measures of toxicity**

Not determined

**12. ECOLOGICAL INFORMATION****Ecotoxicity**

Harmful to aquatic life. Harmful to aquatic life with long lasting effects.

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Aluminum chloride 7446-70-0		27.1: 96 h <i>Gambusia affinis</i> mg/L LC50 5.31 - 7.2: 96 h <i>Oncorhynchus mykiss</i> mg/L LC50 flow-through 6.2 - 11.9: 96 h <i>Oncorhynchus mykiss</i> mg/L LC50		3.9: 48 h <i>Daphnia magna</i> mg/L EC50 Static
Hydrochloric acid 7647-01-0		282: 96 h <i>Gambusia affinis</i> mg/L LC50 static		

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

Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances.

**DOT**

UN/ID No	UN2581
Proper Shipping Name	Aluminum Chloride, solution
Hazard Class	8
Packing Group	III

**IATA**

UN/ID No	UN2581
Proper Shipping Name	Aluminum Chloride, solution
Hazard Class	8

Packing Group III

**IMDG**

UN/ID No UN2581  
 Proper Shipping Name Aluminum Chloride, solution  
 Hazard Class 8  
 Packing Group III  
 Marine Pollutant This material may meet the definition of a marine pollutant

**15. REGULATORY INFORMATION****International Inventories**

Not determined

**US Federal Regulations****CERCLA**

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Hydrochloric acid 7647-01-0	5000 lb	5000 lb	RQ 5000 lb final RQ RQ 2270 kg final RQ

**SARA 311/312 Hazard Categories**

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

**SARA 313**

Chemical Name	CAS No	Weight-%	SARA 313 - Threshold Values %
Hydrochloric acid - 7647-01-0	7647-01-0	0-1	1.0

**CWA (Clean Water Act)**

Component	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Hydrochloric acid 7647-01-0 ( 0-1 )	5000 lb			X

**US State Regulations****U.S. State Right-to-Know Regulations**

<b>Chemical Name</b>	<b>New Jersey</b>	<b>Massachusetts</b>	<b>Pennsylvania</b>
Aluminum chloride 7446-70-0	X	X	X
Hydrochloric acid 7647-01-0	X	X	X

**16. OTHER INFORMATION**

<b><u>NFPA</u></b>	<b>Health Hazards</b>	<b>Flammability</b>	<b>Instability</b>	<b>Special Hazards</b>
	2	0	0	Not determined
<b><u>HMIS</u></b>	<b>Health Hazards</b>	<b>Flammability</b>	<b>Physical Hazards</b>	<b>Personal Protection</b>
	2	0	0	Not determined

**Issue Date** 30-Apr-2013  
**Revision Date:** 3-Mar-2015  
**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.

**End of Safety Data Sheet**