

Aluminum chloride, liquid

Material Safety Data Sheet

Section 1 - Chemical Product and Company Identification

Product/Chemical Name:	Aluminum chloride, solution	Manufacturer:	HMIS <table border="1"> <tr> <td>H</td> <td>2</td> </tr> <tr> <td>F</td> <td>0</td> </tr> <tr> <td>R</td> <td>0</td> </tr> <tr> <td colspan="2">PPE†</td> </tr> <tr> <td colspan="2">†Sec. 11</td> </tr> </table>	H	2	F	0	R	0	PPE†		†Sec. 11	
H	2												
F	0												
R	0												
PPE†													
†Sec. 11													
Chemical Family:	Inorganic metal salt	Delta Chemical Corporation											
General Use:	Water Treatment Chemical	2601 Cannery Avenue Baltimore, MD 21226-1595											
Emergency Contact:	800-424-9300 Chemtrec	Phone 410-354-0100 (7:00am 5:00pm) FAX 410-354-1021											

Section 2 - Composition / Information on Ingredients

Ingredient Name	CAS Number	% wt
Aluminum chloride	7446-70-0	15-30
Water	7732-18-5	70-85
Hydrogen chloride	7647-01-0	0-1

Ingredient	OSHA PEL		ACGIH TLV		NIOSH REL		NIOSH
	TWA	STEL	TWA	STEL	TWA	STEL	IDLH
Aluminum chloride	2 mg/m ³ <i>as aluminum</i>	none estab.	2 mg/m ³ <i>as aluminum</i>	none estab.	2 mg/m ³ <i>as aluminum</i>	none estab.	none estab.

Section 3 - Emergency Overview

Description: Viscous colorless to yellow liquid with no or very mild odor. Not flammable.

Hazards: Corrosive; pH <1. Causes burns. May generate HCl vapors. Harmful by inhalation, in contact with skin and if swallowed. Risk of serious damage to eyes. Not flammable, but may release toxic vapors if decomposed in a fire.

Section 4 - First Aid Procedures

Inhalation:	Remove from exposure; seek medical treatment if any symptoms occur.
Eye Contact:	Immediately flush with tepid water for at least 15 minutes, occasionally lifting upper and lower lids. Seek medical attention immediately.
Skin Contact:	Immediately rinse the affected area with tepid water, removing contaminated clothing. Rinse with water for a minimum of 15 minutes. Seek medical attention if there is any indication of a chemical burn.
Ingestion:	Do not induce vomiting. If conscious, have the victim rinse mouth then drink large amounts of water. Seek medical attention immediately.

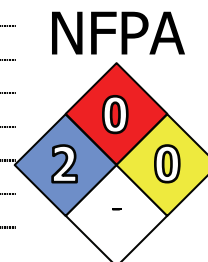
After first aid, get appropriate in-plant, paramedic, or community medical support.

Section 5 - Physical and Chemical Properties

Physical State:	Liquid	Water Solubility:	Complete
Appearance:	Viscous colorless to yellow liquid. Normally clear but may be hazy	Specific Gravity (H₂O=1, at 4 °C):	1.13 - 1.29
Odor Threshold:	negligible to hydrogen chloride odor	Freezing/Melting Point:	-34°C/-30°F
Density:	9.4 - 10.8 lb/gal	Boiling Point:	>110°C/230°F
% VOC:	0.0	Viscosity:	10 centistokes
pH:	<1.0	Vapor Pressure:	NA
		Vapor Density (Air=1):	NA

Section 6 - Fire Fighting Measures

Flash Point:	NA
Burning Rate:	NA
Auto ignition Temperature:	NA
LEL:	NA
UEL:	NA
Flammability Classification:	Not flammable
Extinguishing Media:	NA
Unusual Fire or Explosion Hazards:	May decompose to Hydrogen chloride (Hydrochloric acid) and Chlorine in a fire. If fumes are present wear an OSHA/NIOSH approved full-face respirator with an acid gas cartridge or SCBA.
Hazardous Combustion Products:	See Section 7.
Fire-Fighting Instructions:	Use water to keep fire-exposed containers cool. Do not release runoff to sewers or waterways.



Section 7 - Stability and Reactivity

Stability:	Stable.
Polymerization:	Hazardous polymerization does not occur.
Chemical Incompatibilities:	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.
Conditions to Avoid:	Will react with most metals (aluminum, iron, zinc, tin, etc.) to release flammable hydrogen gas.
Hazardous Decomposition Products:	May decompose to Hydrogen chloride (Hydrochloric acid) and Chlorine at elevated temperatures.

Section 8 - Health Hazard Information

Primary Entry Routes:	Inhalation, skin, ingestion.
Target Organs:	N/A
Acute Effects:	
Eye:	Risk of serious damage to eyes. Redness, watering, and itching characterize inflammation of the eye.
Skin:	Skin contact may cause chemical burns. Skin exposure is characterized by itching, scaling, reddening, or, occasionally, blistering.
Ingestion:	Harmful if swallowed.
Inhalation:	Inhalation of spray or mist may produce irritation of respiratory tract, characterized by coughing, choking, or shortness of breath. Liquid or spray mist may produce tissue damage particularly on mucous membranes of eyes, mouth and respiratory tract.
Carcinogenicity:	IARC, NTP, and OSHA do not list any of the ingredients as a carcinogen.
Medical Conditions Aggravated by Long-Term Exposure:	None reported.
Chronic Effects:	IARC, NTP, and OSHA list no evidence showing that any of the ingredients cause cancer or affect reproduction.

Section 9 - Spill, Leak, and Disposal Procedures

Spill /Leak Procedures:	Spill procedures are dictated by site wastewater flow controls and will vary from site to site. General procedures are provided in this document, but authorization for any wastewater discharge must be obtained prior to the discharge.
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.
Large Spills:	For large spills, dike far ahead of liquid spill for later disposal. Do not release into sewers or waterways. Pump residue into storage containers or neutralize with lime or soda ash. Neutralization will release carbon dioxide, which can generate a breathing hazard.
Cleanup:	Wash or neutralize impacted areas after liquid removal to remove residues.
Regulatory Requirements:	Aluminum chloride does not have a reportable quantity under CERCLA.
Disposal:	Contact your supplier or a licensed contractor for detailed recommendations. Follow applicable Federal, state, and local regulations.
Container Cleaning and Disposal:	Rinse with water, dispose of containers in accordance with State and local regulations.

Section 10 - Regulatory Information

EPA Regulations:	
RCRA Hazardous Waste Number:	D002 (Corrosive) if the pH is <2 Not a hazardous waste if the pH >2
CERCLA Hazardous Substance (40 CFR 302.4):	Not listed CWA, Sec. 311 (b)(4)
CERCLA Reportable Quantity (RQ)	NA
SARA 311/312 Category:	acute (immediate) health hazard
SARA Toxic Chemical (40 CFR 372.65):	Not listed
SARA EHS (Extremely Hazardous Substance) (40 CFR 355):	Not listed
OSHA Regulations:	
Air Contaminant (29 CFR 1910.1000, Table Z-1, Z-1-A):	Not listed
OSHA Specifically Regulated Substance (29CFR 1910.):	Not listed
State Regulations:	State specific regulatory requirements have not been determined by Delta Chemical Corporation

Section 11 - Exposure Controls / Personal Protection

Ventilation:	Under normal conditions, Aluminum chloride solution may generate hydrochloric acid fumes. Provide local exhaust ventilation.
Respiratory Protection:	Seek professional advice prior to respirator selection and use. Follow OSHA respirator regulations (29 CFR 1910.134) and, if necessary, wear a MSHA/NIOSH-approved respirator. Select respirator based on its suitability to provide adequate worker protection for given working conditions, level of airborne contamination, and presence of sufficient oxygen. For emergency or non-routine operations (cleaning spills, reactor vessels, or storage tanks), wear an SCBA. <i>Warning! Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.</i> If respirators are used, OSHA requires a written respiratory protection program that includes at least: medical certification, training, fit-testing, periodic environmental monitoring, maintenance, inspection, cleaning, and convenient, sanitary storage areas.
Protective Clothing/Equipment:	Wear chemically protective gloves, boots, aprons, and gauntlets to prevent prolonged or repeated skin contact. Wear protective chemical safety goggles, per OSHA eye- and face-protection regulations (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.

Safety Stations:	Make emergency eyewash stations, safety/quick-drench showers, and washing facilities available in work area.
Contaminated Equipment:	Separate contaminated work clothes from street clothes. Launder before reuse. Remove this material from your shoes and clean personal protective equipment.
Comments:	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.

Section 12 - Special Precautions and Comments

Handling Precautions:	Ensure that all containers are labeled in accordance with OSHA regulations. Treat as an acid. Avoid contact with metal, as product will corrode stainless steel, iron, brass, copper, aluminum and mild steel. Avoid skin and eye contact. Wear appropriate protective clothing. Hydrochloric acid vapor may accumulate in storage containers.
Storage Requirements:	Store in rubber-lined, plastic or FRP vessels. Store away from incompatible materials. Keep containers tightly closed when not in use.

Section 13 - DOT Transportation Data (49 CFR 172.101)

Shipping Name:	UN2581, Aluminum chloride, solution, 8, PG III	Packaging Authorizations	
Hazard Class:	8	a) Exceptions:	§173.154
DOT No.:	UN2581	b) Non-bulk Packaging:	§173.203
Packing Group:	III	c) Bulk Packaging:	§173.241
Special Provisions (172.102):	IB3, T4, TP1	Quantity Limitations	
2004 Emergency Response Guidebook:	154	a) Passenger, Aircraft, or Railcar:	5L
		b) Cargo Aircraft Only:	60L
		Vessel Stowage Requirements	
		a) Location:	A
		b) Other:	

Prepared By: Craig Owen

Effective Date: 12/16/2002 **Supersedes:** None

Revision Notes: 8/09 – Section 4 and 8 revised. 4/22/08 – Section 13; Shipping name updated. 12/18/06 – Section 2; description, Section 12; storage requirements revised. 6/2/06 – Section 10 updated. 9/16/04 Format modified. 04/12/04 – risk/safety phrase update; 12/16/2002 – All sections revised and reformatted.

Disclaimer: The information presented herein is believed to be accurate and reliable, but is given without guaranty or warranty, expressed or implied. The user should not assume that all safety measures are indicated so that other measures may not be required. The user is responsible for assuring that the product and equipment are used in a safe manner that complies with all appropriate legal standards and regulations.