

## Material Safety Data Sheet

### Section 1 - Chemical Product and Company Identification

<b>Product/Chemical Name:</b>	Aluminum chloride hydroxide sulfate	<b>Manufacturer:</b>	<b>HMIS</b> <table border="1"> <tr><td><b>H</b></td><td><b>1</b></td></tr> <tr><td><b>F</b></td><td><b>0</b></td></tr> <tr><td><b>R</b></td><td><b>0</b></td></tr> </table> <b>PPE<sup>†</sup></b> <sup>†</sup> Sec. 11	<b>H</b>	<b>1</b>	<b>F</b>	<b>0</b>	<b>R</b>	<b>0</b>
<b>H</b>	<b>1</b>								
<b>F</b>	<b>0</b>								
<b>R</b>	<b>0</b>								
<b>Chemical Formula:</b>	Al <sub>a</sub> (OH) <sub>b</sub> Cl <sub>c</sub> where b/a varies around 2.5								
<b>CAS Number:</b>	39290-78-3								
<b>General Use:</b>	Water Treatment Chemical								
<b>Emergency Contact:</b>	<b>800-424-9300</b> Chemtrec								

### Section 2 - Composition / Information on Ingredients

Ingredient Name	CAS Number	% wt
Aluminum chloride hydroxide sulfate (Polyaluminum chloride, Polyaluminum hydroxychlorosulfate)	39290-78-3	15-45
Water	7732-18-5	55-85

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

### Section 3 - Emergency Overview

**Description:** Clear or amber liquid. pH 2-3.5. Not volatile. Not flammable.

**Hazards:** Harmful by ingestion and in contact with skin. Irritating to eyes, respiratory system and skin. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

### Section 4 - First Aid Procedures

<b>Inhalation:</b>	(mist or spray) Remove from exposure; seek medical treatment if any symptoms occur.
<b>Eye Contact:</b>	Immediately flush with large amounts of water for at least 15 minutes, occasionally lifting upper and lower lids. Seek medical attention.
<b>Skin Contact:</b>	Remove contaminated clothing and wash contaminated skin with water.
<b>Ingestion:</b>	Do not induce vomiting. If conscious have the victim rinse mouth then drink large amounts of water. Seek medical attention immediately.

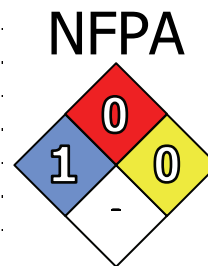
**After first aid, get appropriate in-plant, paramedic, or community medical support.**

### Section 5 - Physical and Chemical Properties

<b>Physical State:</b>	liquid	<b>Water Solubility:</b>	Complete
<b>Appearance:</b>	colorless to clear amber	<b>Boiling Point:</b>	>110° C/230° F
<b>Odor Threshold:</b>	negligible odor	<b>Freezing/Melting Point:</b>	<-32° C/-26° F
<b>Vapor Pressure:</b>	NA	<b>Viscosity:</b>	5-250 Centistokes at 25°C
<b>Vapor Density (Air=1):</b>	NA	<b>Density:</b>	NA
<b>pH:</b>	2 - 3.5	<b>% Volatile:</b>	NA
<b>Specific Gravity (H<sub>2</sub>O=1, at 4 °C):</b>	>1.2		

**Section 6 - Fire Fighting Measures**

<b>Flash Point:</b>	NA
<b>Burning Rate:</b>	NA
<b>Autoignition Temperature:</b>	NA
<b>LEL:</b>	NA
<b>UEL:</b>	NA
<b>Flammability Classification:</b>	Not flammable.
<b>Extinguishing Media:</b>	NA
<b>Unusual Fire or Explosion Hazards:</b>	May decompose to Hydrogen chloride and SO <sub>2</sub> in a fire. If fumes are present, wear an OSHA/NIOSH approved full-face respirator with an acid gas cartridge or SCBA.
<b>Hazardous Combustion Products:</b>	See Section 7.
<b>Fire-Fighting Instructions:</b>	Do not release runoff from fire control methods to sewers or waterways.



**Section 7 - Stability and Reactivity**

<b>Stability:</b>	Product degrades at elevated temperatures. Avoid temperatures above 45° C (113°F)
<b>Polymerization:</b>	Hazardous polymerization does not occur.
<b>Chemical Incompatibilities:</b>	Reacts with Zinc and Aluminum to form Hydrogen gas. Contact with strong alkalis (e.g. Ammonia and its' solutions, Sodium hydroxide (caustic), Potassium hydroxide, chlorites) may generate heat, splattering or boiling and toxic vapors.
<b>Conditions to Avoid:</b>	N/A
<b>Hazardous Decomposition Products:</b>	May decompose to HCl and SO <sub>2</sub> at high temperatures.

**Section 8 - Health Hazard Information**

<b>Primary Entry Routes:</b>	Ingestion.
<b>Target Organs:</b>	N/A
<b>Acute Effects:</b>	No unusual.
<b>Eye:</b>	May cause a burning feeling.
<b>Skin:</b>	May cause a skin rash or burning feeling.
<b>Ingestion:</b>	Abdominal pain. Burning sensation. Nausea. Vomiting.
<b>Carcinogenicity:</b>	IARC, NTP, and OSHA do not list Aluminum chloride hydroxide sulfate as a carcinogen.
<b>Medical Conditions Aggravated by Long-Term Exposure:</b>	None reported.
<b>Chronic Effects:</b>	There is no evidence that Aluminum chloride hydroxide sulfate causes cancer or affects reproduction.

**Section 9 - Spill, Leak, and Disposal Procedures**

<b>Spill /Leak Procedures:</b>	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.
<b>Small Spills:</b>	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.
<b>Large Spills:</b>	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.

<b>Cleanup:</b>	Wash or neutralize impacted areas after liquid removal to remove residues.
<b>Regulatory Requirements:</b>	Aluminum chloride hydroxide sulfate does not have a reportable quantity under CERLCA. Follow applicable Federal, state, and local regulations.
<b>Disposal:</b>	Contact your supplier or a licensed contractor for detailed recommendations. Follow applicable Federal, state, and local regulations.
<b>Container Cleaning and Disposal:</b>	Rinse with water, dispose of containers in accordance with State and local regulations.

### Section 10 - Regulatory Information

<b>EPA Regulations:</b>	
RCRA Hazardous Waste Number:	Not listed (40 CFR 261.33)
RCRA Hazardous Waste Classification:	(40 CFR 261.): Not classified
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
<b>TSCA Section 8(b) – Inventory Status</b>	All chemicals in this product are either exempt or listed on the TSCA inventory.
<b>OSHA Regulations:</b>	
Air Contaminant (29 CFR 1910.1000, Table Z-1, Z-1-A):	Not listed
OSHA Specifically Regulated Substance (29CFR 1910.):	Not listed
<b>State Regulations:</b>	State specific regulations have not been determined by Delta Chemical Corporation

### Section 11 - Exposure Controls / Personal Protection

<b>Ventilation:</b>	Under normal conditions, Aluminum chloride hydroxide sulfate will not generate mists or vapors. No special ventilation is recommended.
<b>Respiratory Protection:</b>	Seek professional advice prior to respirator selection and use. Follow OSHA respirator regulations (29 CFR 1910.134) and, if necessary, wear an 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. Warning! Air-purifying respirators do not protect workers in oxygen-deficient atmospheres. 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.
<b>Protective Clothing/Equipment:</b>	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.
<b>Safety Stations:</b>	Make emergency eyewash stations, safety/quick-drench showers, and washing facilities available in work area.
<b>Contaminated Equipment:</b>	Separate contaminated work clothes from street clothes. Launder before reuse. Remove this material from your shoes and clean personal protective equipment.
<b>Comments:</b>	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

<b>Handling Precautions:</b>	Ensure that all containers are labeled in accordance with OSHA regulations. Treat as a dilute acid. Avoid contact with metal, as product will slowly corrode iron, brass, copper, aluminum and mild steel. Avoid skin and eye contact. Wear appropriate protective clothing.
<b>Storage Requirements:</b>	Store in rubber-lined, plastic or FRP vessels. Keep storage temperature below 30°C/86° F. Store away from incompatible materials. Keep containers tightly closed when not in use.

### Section 13 - DOT Transportation Data (49 CFR 172.101):

<b>Shipping Name:</b>	UN1760, Corrosive liquids, n.o.s. (Aluminum chloride hydroxide sulfate), 8, PG III	<b>Packaging Authorizations</b>	
		<b>a) Exceptions:</b>	§173.154
		<b>b) Non-bulk Packaging:</b>	§173.203
		<b>c) Bulk Packaging:</b>	§173.241
<b>Shipping Symbols:</b>	G	<b>Quantity Limitations</b>	
<b>Hazard Class:</b>	8	<b>a) Passenger, Aircraft, or Railcar:</b>	5L
<b>DOT No.:</b>	UN1760	<b>b) Cargo Aircraft Only:</b>	60L
<b>Packing Group:</b>	III	<b>Vessel Stowage Requirements</b>	
<b>Label:</b>	Corrosive	<b>a) Vessel Stowage:</b>	A
<b>Special Provisions (172.102):</b>	IB3,T7,TP1,TP28	<b>b) Other:</b>	40
<b>2004 Emergency Response Guidebook:</b>	Page 154		

**Prepared By:** Craig T. Owen

**Effective Date:** 3/18/02 **Supersedes:** 7/2000

**Revision Notes:** 2/29/08: Section 10. TSCA inventory status added; Section 13 Shipping name updated. -  
9/17/04: Formatting revised. - 4/9/04: Shipping name, storage temperature, risk phrases, format updates.  
3/18/02: All sections reformatted/revised.

**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.