

# Aluminum sulfate, liquid

MSDS No. 011  
1/18/2010

## Material Safety Data Sheet

### Section 1 - Chemical Product and Company Identification

<b>Product/Chemical Name:</b>	Aluminum sulfate, solution	<b>Manufacturer:</b>	<b>HMIS</b> <b>H 1</b> <b>F 0</b> <b>R 0</b> <b>PPET†</b> †Sec. 11
<b>Chemical Formula:</b>	Al <sub>2</sub> (SO <sub>4</sub> ) <sub>3</sub> •14(H <sub>2</sub> O)	Delta Chemical Corporation	
<b>CAS Number:</b>	10043-01-3	2601 Cannery Avenue	
<b>General Use:</b>	Water Treatment Chemical	Baltimore, MD 21226-1595	
<b>Emergency Contact:</b>	<b>800-424-9300</b> 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 sulfate	10043-01-3	27.8
Water	7732-18-5	72.2

Ingredient	OSHA PEL		ACGIH TLV		NIOSH REL		NIOSH
	TWA	STEL	TWA	STEL	TWA	STEL	IDLH
Aluminum 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, amber or light green liquid. pH ±2.1. 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, drink milk or water and immediately seek medical attention.

**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, clear amber or light green	<b>Boiling Point:</b>	109° C/228° F
<b>Odor:</b>	Negligible odor	<b>Freezing/Melting Point:</b>	-13° C/9° F
<b>Vapor Pressure:</b>	NA	<b>Viscosity:</b>	25 cps @ 20°C/68° F
<b>Specific Gravity (H<sub>2</sub>O=1, at 15.5°C/60 °F):</b>	1.33	<b>Vapor Density (Air=1):</b>	NA
<b>pH:</b>	2.1 ± 0.5	<b>% VOC:</b>	0.0

**Section 6 - Fire-Fighting Measures**

<b>Flash Point:</b>	NA	<p>NFPA 1 0 0 -</p>
<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>	If evaporated to dryness and exposed to temperatures greater than 1400°F, aluminum sulfate will decompose generating toxic and corrosive gas.	
<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>	Stable at room temperature in closed containers under normal storage and handling conditions.
<b>Polymerization:</b>	Hazardous polymerization cannot occur.
<b>Chemical Incompatibilities:</b>	Alkalies and water-reactive materials.
<b>Conditions to Avoid:</b>	N/A
<b>Hazardous Decomposition Products:</b>	Thermal oxidative decomposition of Aluminum Sulfate occurs at temperatures greater than 1400°F and can produce sulfur oxides.

**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>	Irritating to eyes.
<b>Skin:</b>	Irritating to skin.
<b>Ingestion:</b>	Harmful if swallowed.
<b>Carcinogenicity:</b>	IARC, NTP, and OSHA do not list Aluminum Sulfate, Liquid as a carcinogen.
<b>Medical Conditions Aggravated by Long-Term Exposure:</b>	None reported.
<b>Chronic Effects:</b>	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**

<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>	Follow applicable OSHA regulations (29 CFR 1910.120). Aluminum sulfate has a reportable quantity under CERCLA.
<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 - Exposure Controls / Personal Protection

<b>Ventilation:</b>	Under normal conditions, liquid alum 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 11 - Special Precautions and Comments

<b>Handling Precautions:</b>	Ensure that all containers are labeled in accordance with OSHA regulations. Avoid skin and eye contact. Wear appropriate protective clothing. Aluminum sulfate delivered in tank trucks may exceed 45° C (113° F).
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### Section 12 - Regulatory Data

RCRA Hazardous Waste Number:	Not a characteristic waste (40 CFR §261.20-.24) Not listed waste (40 CFR §261.30-.38)
CERCLA Hazardous Substance (40 CFR 302.4):	listed CWA, Sec. 311 (b)(4)
CERCLA Reportable Quantity (RQ):	5,000 lbs (2,270 kg) as Al <sub>2</sub> (SO <sub>4</sub> ) <sub>3</sub> 17,900 lbs (8,120 kg) as a 27.8% solution
SARA 311/312 Codes:	immediate (acute) health hazard
SARA Toxic Chemical (40 CFR 372.65):	Not listed
SARA EHS (Extremely Hazardous Substance) (40 CFR 355):	Not listed
<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>	Delta Chemical Corporation has not investigated state specific requirements.

**Section 13 - DOT Transportation Data (49 CFR 172.101)**

<b>Proper Shipping Name:</b>	UN3264, Corrosive, liquid, acidic, inorganic, n.o.s., (Aluminum sulfate) 8, III, RQ		
<b>Shipping Symbols:</b>	G	<b>Packaging Authorizations</b>	
<b>Hazard Class:</b>	8	<b>a) Exceptions:</b>	173.154
<b>DOT No.:</b>	UN3264	<b>b) Non-bulk Packaging:</b>	173.203
<b>Packing Group:</b>	III	<b>c) Bulk Packaging:</b>	173.241
<b>Label:</b>	Class 8	<b>Quantity Limitations</b>	
<b>Special Provisions (172.102):</b>	IB3 , T7 , TP1 , TP28	<b>a) Passenger, Aircraft, or Railcar:</b>	5 L
		<b>b) Cargo Aircraft Only:</b>	60 L
<b>2004 Emergency Response Guidebook:</b>	Guide 154	<b>Vessel Stowage Requirements</b>	
		<b>a) Vessel Stowage:</b>	A
		<b>b) Other:</b>	40

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**Revision Notes:** 1/18/10 Proper shipping name revised. 10/26/07 – Temperature statement added to Section 12. 10/1/04, 6/2/06, – Format revised. 3/9/04 – PEL updated, proper shipping name added. 10/16/03 – Transportation data updated.

**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.