

APPENDIX G. Spill Prevention, Control, and Contingency Plan

Federal Water Pollution Control Act (33 U.S.C. Secs. 1251 et. Seq as amended to date) require implementation of a spill response and prevention plan. Preventing spills of materials is a significant component of complying with these regulations. However, even with the best prevention efforts, spills may still occur. When they do, it is up to contracted personnel to respond quickly and effectively to cleanup the spilled material or notify someone who can. The plan should be kept in a central location that is easily accessible for employees.

Plan Implementation Date: August 1, 2014

Facility's Responsible Person(s) in charge of spill response planning, implementation and maintenance of this Plan:

Name Phone #'s

Tadd Barrow (HAB Aquatic Solutions) 402-430-6813

John Holz (HAB Aquatic Solutions) 402-430-0352

RESPONSIBILITIES

- The **Job Site Responsible Person** has primary responsibility for coordinating the response to emergencies, including chemical spills.
- **Supervisors** should ensure that employees are familiar with these procedures and receive any necessary training.
- **All employees** should follow these procedures in the event of a chemical spill.

EMERGENCY CONTACT NUMBERS

- Outside emergency services (police, fire department, ambulance service): 911
- Hospital: [Eastern Oklahoma Medical Center: 918-647-8635
- Facility Responsible Person: Tadd Barrow Phone #: 402-430-6813
- Project Oversight Consultant (Steve Patterson, Bio x Design): 918-839-7084

CLEAN-UP PROCEDURES

Spilled chemicals should be effectively and quickly contained and cleaned up. Employees should clean up spills themselves *only if properly trained and protected*. Employees who are not trained in spill cleanup procedures should report the spill to the Responsible Person(s) listed above, warn other employees, and leave the area.

The following general guidelines should be followed for evacuation, spill control, notification of proper authorities, and general emergency procedures in the event of a chemical incident in which there is potential for a significant release of hazardous materials.

1. Evacuation

Persons in the immediate vicinity of a spill (including the public) will be *immediately evacuated* from the area by trained HAB employees (except for employees with training in spill response in circumstances described below).

2. Spill Control Techniques

Once a spill has occurred, the employee needs to decide whether the spill is small enough to handle without outside assistance. Only employees with training in spill response should attempt to contain or clean up a spill. These employees will include Tadd Barrow, John Holz and Bernie Ruppert.

NOTE: If you are cleaning up a spill yourself, make sure you are aware of the hazards associated with the materials spilled, have adequate ventilation, and proper personal protective equipment. Treat all residual chemical and cleanup materials as hazardous waste. Spill control equipment should be located wherever significant quantities of hazardous materials are received or stored.

3. Spill Response and Cleanup

Response and cleanup procedures will vary depending on the size of the spill.

Training: Employees will be trained to respond to an incidental spill by use of the personal protective procedures in place. Training will focus on stopping and minimization of the spill to protect the environment.

Safety: Safety procedures vary with the material spilled, the location of the spill and the amount spilled. In general, stay out of the spill zone and avoid contact with all chemicals. People involved in containment and clean up must wear proper safety apparel as required by area safety rules for the material spilled. While it is important to stop and contain spills, it is more important to prevent injuries.

Equipment Available to Contain Spills: Most potential spills would be contained in the 1,750 gallon spill guards. Any spills outside of the spill guards will be hosed down with lake water immediately. HAB Aquatic Solutions will maintain pumps and hoses dedicated to wash down on site at all times. Spills are generally handled by internal personnel and usually do not require an emergency response by police or fire department HAZMAT teams.

- Quickly control the spill by stopping or securing the spill source. This could be as simple as uprighting a container and using water to rinse down area of spill. Wear gloves and protective clothing, if necessary.

REPORTING SPILLS

All chemical spills, regardless of size, should be reported as soon as possible to the Job Site Responsible Person. The Responsible Person will determine whether the spill has the potential to affect the environment outside of the job site and must be reported to 911 or the National Response Center at 800-424-8802. Examples of spills that could affect the outside environment include spills that are accompanied by fire or explosion and spills that could reach nearby water bodies.

SPILLS (MATERIALS) THAT REQUIRE SPECIAL CLEANUP

Describe any materials used your facility that in require special materials and procedures for cleanup procedures beyond those listed above. Provide details regarding hazards associated with these (See Attachment F for Liquid Aluminum Sulfate MSDS sheet).

<u>Material Amount</u>	<u>(avg/max)</u>	<u>Location(s)</u>
Aluminum Sulfate	<u>10,000 gallons</u>	<u>On shore storage tanks</u>
Liquid Sodium Aluminate	<u>5,000 gallons</u>	<u>On shore storage tanks</u>

<u>Material</u>	<u>Maximum Volume to be cleaned</u>	<u>Disposal Method/Location</u>
Aluminum Sulfate	4,200 gallons (approx. volume of a delivery tanker)	Rinse into lake
Liquid Sodium Aluminate	4,000 gallons	Rinse into lake

EMPLOYEE TRAINING LOG

Identify the spill response training provided to each employee or contractor who is charged with responsibility for spill response:

<u>EMPLOYEE NAME</u>	<u>INSTRUCTORS NAME</u>	<u>DATE OF TRAINING</u>
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Personal Protective Equipment Procedure

The utilization of personal protective equipment (PPE) is essential in providing a safe working environment at HAB Aquatic Solutions. In determining the type and extent of protective equipment required to work safely among chemical hazards associated with job duties, the

management of HAB Aquatic Solutions shall conduct an assessment of the workplace prior to the start of the job.

It is the policy of HAB Aquatic Solutions, that protective equipment, including PPE for eyes, face, head, extremities and protective clothing shall be provided, used and maintained in a sanitary and reliable condition whenever it may be necessary by reasons of potential chemical hazards. Employees required to use PPE (Personal Protective Equipment) must be trained. The topics of PPE training shall include but are not limited to: when and what PPE is necessary, how to properly wear and adjust PPE, the proper care, maintenance and useful disposal of PPE.

Protective clothing and equipment includes chemically protective gloves, boots, aprons, and gauntlets to prevent prolonged or repeated skin contact and chemical protective safety goggles.

Safety Policy

HAB Aquatic Solutions, LLC is committed to providing a safe work environment for all employees and contractors and conducting all operations in a safe and healthful manner. The health and safety of every employee and contractor is a fundamental consideration in every business decision and plan. HAB Aquatic Solutions, LLC is committed to protect the public, company property, and our customers from incidents that could cause harm or economic loss due to our operations.

Our goal is to prevent the occurrence of all work-related injuries, illnesses and property losses. The HAB Aquatic Solutions, LLC health and safety program contains specific requirements which are based on the following principles in providing an effective safety program:

- Managers and Supervisors are responsible for the safety of operations under their control and will be evaluated accordingly.
- HAB Aquatic Solutions, LLC strives to provide a safe work environment by eliminating or controlling hazards with appropriately designed equipment and facilities, safe operating procedures, and necessary personal protective equipment.
- All applicable safety regulations, codes and accepted work practices will be followed. Specific rules and procedures will be established and followed at every location.
- Each employee and contractor will be informed of hazards associated with his or her job and trained in safe work procedures, the use of personal protective equipment, and other means intended to provide personal protection.
- All employees and contractors are responsible for performing their job activities in a safe and reasonable manner and in accordance with safety related instructions given to them, and the training they have received. Failure to comply with these rules will result in disciplinary actions up to, and including termination.
- All unsafe acts, conditions and incidents must be reported to the site manager for investigation and prompt correction.
- All employees and contractors are expected to support and participate in the HAB Aquatic Solutions, LLC Health and Safety Program.

MATERIAL SAFETY DATA SHEET



NFPA	HMIS	PPE	Symbol(s)
			 Regulated
Current Issue Date: February 18, 2014		Revision Number: 1	
1. PRODUCT AND COMPANY IDENTIFICATION			
Product Name:	Liquid Alum		
Other/Generic Names:	Aluminum Sulfate, Alum, Alun 48, Aluminum Sulphate 48%		
Recommended Use:	Water treatment. Various industrial uses.		
Manufacturer:	Chemtrade Solutions LLC 90 East Halsey Road Parsippany, NJ 07054 Chemtrade Chemicals Canada Ltd. 90 East Halsey Road Parsippany, NJ 07054		
For More Information:	Customer Service US ONLY: 800-631-8050 (Monday – Friday 9:00AM – 4:30PM) Customer Service CANADA ONLY: 866-543-3896 (Monday – Friday 9:00AM – 4:30PM)		
Emergency Telephone Number:	US ONLY - CALL CHEMTREC: 800-424-9300 (24 Hours/Day, 7 Days/Week) OUTSIDE THE US – CALL CHEMTREC: 1-703-527-3887 (24 Hours/Day, 7 Days/Week) CANADA ONLY - CALL CANUTEC: 613-996-6666 (24 Hours/Day, 7 Days/Week)		
2. HAZARDS IDENTIFICATION			
EMERGENCY OVERVIEW: A clear, light green or amber liquid with a negligible odor. Can irritate the skin and eyes. May be harmful if swallowed. Not flammable, but may release toxic vapors if decomposed in a fire.			
OSHA Status:	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)		
Potential Health Affects			
Skin:	May cause skin irritation.		
Eyes:	May strongly irritate or burn the eyes.		
Inhalation:	Product mists may cause irritation to the respiratory tract.		
Ingestion:	May irritate the gastrointestinal tract. Concentrated solutions may cause burns to the digestive tract.		
Delayed Effects:	None known.		
3. COMPOSITION/INFORMATION ON INGREDIENTS			
Component	CAS No	Weight %	
Aluminum sulfate	10043-01-3	~48.5 (dry basis)	
Water	7732-18-5	Balance	

Liquid Alum

4. FIRST AID MEASURES					
Eye Contact	Immediately flush eyes with water for at least 15 minutes. Get medical attention if irritation persists.				
Skin Contact	Flush with plenty of water, removing contaminated clothing. If irritation develops, get medical attention.				
Inhalation	Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get prompt medical attention.				
Ingestion	Do not induce vomiting. Immediately give large quantities of water. Get medical attention immediately.				
Notes to Physician	Treat symptomatically				
5. FIRE-FIGHTING MEASURES					
Flammable Properties					
FLASH POINT:	Not Flammable				
FLASH POINT METHOD:	Not Applicable				
AUTOIGNITION TEMPERATURE:	Not Applicable				
UPPER FLAME LIMIT (VOLUME % IN AIR):	Not Applicable				
LOWER FLAME LIMIT (VOLUME % IN AIR):	Not Applicable				
FLAME PROPAGATION RATE (SOLIDS):	Not Applicable				
OSHA FLAMMABILITY CLASS:	Not Applicable				
SUITABLE EXTINGUISHING MEDIA:	Water spray, foam, carbon dioxide or dry chemical				
UNSUITABLE EXTINGUISHING MEDIA:	No information available				
Explosion Limits					
Hazardous Combustion Products	No information available				
Impact sensitivity	No information available				
Sensitivity to static discharge	No information available				
Specific Hazards Arising from the Chemical	Keep product and empty container away from heat and sources of ignition.				
Protective Equipment and Precautions for Firefighters	Wear self-contained breathing apparatus (SCBA) and full protective equipment. Use water spray to keep containers cool.				
6. ACCIDENTAL RELEASE MEASURES					
IN CASE OF SPILL OR OTHER RELEASE	Dilute small spills or leaks cautiously with plenty of water. Neutralize any further residue with alkali such as soda ash, lime or limestone. Adequate ventilation is required if soda ash or limestone is used, because of the consequent release of carbon dioxide gas. Large spills should be diked up with soda ash and neutralized as above. Collect liquid and/or residue and dispose of in accordance with applicable regulations.				
7. HANDLING AND STORAGE					
Handling	Keep container tightly closed when not in use. Avoid contact with skin, eyes, and clothing. Avoid breathing vapors or mists. Remove contaminated clothing and wash thoroughly after handling.				
Storage	Keep storage container tightly closed. Store in a cool, dry, well-ventilated area or cabinet. Isolate from incompatible substances. Store and ship in plastic or rubber-lined containers.				
8. EXPOSURE CONTROLS/PERSONAL PROTECTION					
Component	ACGIH TLV	OSHA PEL	Ontario TWAEV	Mexico OEL (TWA)	NIOSH IDLH
Aluminum sulfate	2 mg/m ³	2 mg/m ³		TWA: 2 mg/m ³	
Engineering Measures	Use local exhaust to keep airborne concentrations below the permissible exposure limits.				

Liquid Alum

Personal Protective Equipment	
Eye/Face Protection	Wear hard hat (or other head covering) and chemical safety goggles. Do not wear contact lenses.
Skin Protection	Wear appropriate personal protective clothing to prevent skin contact. If prolonged or repeated contact is anticipated, all clothing should be impervious to liquid.
Respiratory Protection	A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 or applicable federal/provincial requirements must be followed whenever workplace conditions warrant respirator use. NIOSH's "Respirator Decision Logic" may be useful in determining the suitability of various types of respirators.
General Hygiene Considerations	To identify additional Personal Protective Equipment (PPE) requirements, it is recommended that a hazard assessment in accordance with the OSHA PPE Standard (29CFR 1910.132) be conducted before using this product. Eyewash and safety showers are recommended.
9. PHYSICAL AND CHEMICAL PROPERTIES	
Appearance	Clear, light green or amber liquid
Color	Clear, light green or amber
Chemical Formula	~48.5% Al ₂ (SO ₄) ₃ · 14H ₂ O in water
Odor	None
Odor Threshold	No information available
Physical State	Liquid
pH	2.0-2.4
Flash Point	Not flammable
Autoignition Temperature	Not applicable
Boiling Point/Range	101 °C / 214 °F
Melting Point/Range	-16°C / 4°F
Flammability Limits in Air	No information available
Explosive Properties	No information available
Oxidizing Properties	No information available
Evaporation Rate	Not determined
Vapor Pressure	Not applicable
Vapor Density	Not applicable
Specific Gravity	1.335
Partition Coefficient (n-octano/water)	No information available
Viscosity	No information available
Molecular Weight	594 for Al ₂ (SO ₄) ₃ · 14H ₂ O
Water Solubility	100%
VOC Content (%)	0
10. STABILITY AND REACTIVITY	
Chemical Stability	Normally stable. If evaporated to dryness, residue should not be exposed to elevated temperatures (above 760°C), as this will yield toxic and corrosive gases.
Incompatible Products	Alkalis and water reactive materials such as oleum: causes exothermic reactions.
Hazardous Decomposition Products	At elevated temperatures, sulfur oxides may be formed. These are toxic and corrosive and are oxidizers. Sulfur trioxide is also a fire hazard. The loss of these gases leaves a caustic residue.
Possibility of Hazardous Reactions	Will not occur.

Liquid Alum

11. TOXICOLOGICAL INFORMATION				
Acute Toxicity				
Component Information				
Component	LD50 Oral	LD50 Dermal	LC50 Inhalation	
Aluminum sulfate	1930 mg/kg (rat) 6207 mg/kg (mouse)			
Irritation	No information available			
Corrosivity	No information available			
Sensitization	No information available			
Chronic Toxicity				
Carcinogenicity	There are no known carcinogenic chemicals in this product.			
Mutagenic Effects	No information available			
Reproductive Effects	No information available			
Developmental Effects	No information available			
Teratogenicty	No information available			
Target Organ Effects	No information available			
Other Adverse Effects	No information available			
Endocrine Disruptor Information	No information available			
12. ECOLOGICAL INFORMATION				
Ecotoxicity				
Contains no substances known to be hazardous to the environment or not degradable in waste water treatment plants.				
Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Aluminum sulfate		LC50 = 100 mg/L Carassius auratus 96 h LC50 = 37 mg/L Gambusia affinis 96 h		EC50 = 136 mg/L 15 min
Persistence and Degradability	No information available			
Bioaccumulation	No information available			
Mobility in Environmental Media	No information available			
Other adverse affects	Aluminum sulfate component: 14 ppm/36 hr/fundulus/fatal/fresh water; 240 ppm/48 hr/mosquito fish/TLm/water type not specified; TLm Mosquito fish, 235 ppm, 96 hours; LC50 Largemouth bass, 250 ppm, 96 hours			
13. DISPOSAL CONSIDERATIONS				
Waste Disposal Methods	Dispose of waste in accordance with all federal, state, and local regulations.			
Contaminated Packaging	Empty containers should be taken for local recycling, recovery or waste disposal.			
14. TRANSPORT INFORMATION				
DOT	Regulated			
Proper Shipping Name	Corrosive liquid, acidic, inorganic, n.o.s. (contains aluminum sulfate)			
Hazard Class	8			
UN-No	UN3264			
Packing Group	PGIII			
TDG	Regulated			
Hazard Class	8			
UN-No	UN3264			
Packing Group	PGIII			

Liquid Alum

15. REGULATORY INFORMATION					
International Inventories					
TSCA	Yes				
DSL	Yes				
ELINCS	No				
EINECS	Yes				
ENCS	Yes				
CHIINA	Yes				
KECL	Yes				
PICCS	Yes				
AICS	Yes				
U.S. Federal Regulations					
SARA 313					
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains the following chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372: None					
SARA 311/312 Hazardous Categorization					
Chronic Health Hazard	No				
Acute Health Hazard	Yes				
Fire Hazard	No				
Sudden Release of Pressure Hazard	No				
Reactive Hazard	No				
Clean Water Act					
Component	CWA – Reportable Quantities	CWA – Toxic Pollutants	CWA – Priority Pollutants	CWA – Hazardous Substances	
Aluminum sulfate	5000 lb			X	
CERCLA					
Component	CERCLA RQ (lb)	SARA TPQ (lb)			
Aluminum sulfate	5000 lb				
U.S. State Regulations					
California Proposition 65					
This product does not contain any Proposition 65 chemicals.					
State Right-to-Know					
Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Aluminum sulfate	X	X	X		

Liquid Alum

Other International Regulations	
Mexico	No information available
Canada	This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.
WHMIS Hazard Class	
E Corrosive material	
D2B Toxic materials	
16. OTHER INFORMATION	
Current Issue Date:	February 18, 2014
Previous Issue Date:	November 30, 2012
Revision Summary:	New Chemtrade Template
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End of MSDS	



Sodium aluminate

MSDS No. 132
4/30/2013

Safety Data Sheet

Section 1 - Chemical Product and Company Identification

Product/Chemical Name:	Sodium aluminate, solution	Manufacturer:	<table border="1"> <tr><td>HMIS</td></tr> <tr><td>H 3</td></tr> <tr><td>F 0</td></tr> <tr><td>R 0</td></tr> <tr><td>PPE†</td></tr> <tr><td>†Sec. 11</td></tr> </table>	HMIS	H 3	F 0	R 0	PPE†	†Sec. 11
HMIS									
H 3									
F 0									
R 0									
PPE†									
†Sec. 11									
Chemical Family:	Inorganic salt	USALCO, LLC							
General Use:	Water Treatment Chemical	2601 Cannery Ave Baltimore, MD 21226							
Emergency Contact:	800-282-5322	Phone 410-354-0100 (7:00am 5:00pm) FAX 410-354-1021							

Section 2 - Composition / Information on Ingredients

Ingredient Name	CAS Number	% wt
Sodium aluminate	1302-42-7	31-45
Sodium hydroxide	1310-73-2	3-9
Water	7732-18-5	52-66

Ingredient	OSHA PEL		ACGIH TLV		NIOSH REL		NIOSH
	TWA	STEL	TWA	STEL	TWA	STEL	IDLH
Sodium aluminate	none estab.	2 mg/m ³ as aluminum	none estab.	2 mg/m ³ as aluminum	none estab.	2 mg/m ³ as aluminum	none estab.

Section 3 - Emergency Overview

Description: Viscous colorless to amber liquid with no or very mild odor. Not flammable. Not volatile
 Hazards: Corrosive; pH 14. Causes burns. Harmful by 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

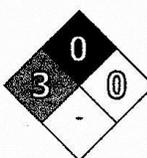
Overview:	Direct contact can cause corrosive burns and permanent injury.
Inhalation:	(mist or spray) Remove from exposure; seek medical treatment if any symptoms occur.
Eye Contact:	Immediately flush with large amounts of water for at least 15 minutes, occasionally lifting upper and lower lids. Seek medical attention.
Skin Contact:	Remove contaminated clothing and flush contact area with large amounts of water for at least 15 minutes. Seek medical attention if any symptoms are present.
Ingestion:	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

Physical State:	Liquid	Water Solubility:	Complete
Characteristics	Clear to amber liquid	Melting/Freezing Point:	0 to 12 F (-18 to -11 C)
Odor:	Odorless	Boiling Point:	220-240 F (104-116 C)
Vapor Pressure:	Not applicable	% Volatile:	0.0
Specific Gravity (H ₂ O=1, at 4 °C):	1.44-1.56	Viscosity:	>2000 cps. @ 20 F 200-800 cps. @ 68 F
Vapor Density (Air=1):	Not applicable	pH:	14.0

Section 6 - Fire-Fighting Measures

Flash Point:	NA	NFPA 
Burning Rate:	NA	
Autoignition Temperature:	NA	
LEL:	NA	
UEL:	NA	
Flammability:	Not flammable	
Extinguishing Media:	NA	
Unusual Fire or Explosion Hazards:	None	
Hazardous Combustion Products:	None	
Fire-Fighting Instructions:	Do not release runoff from fire control methods to sewers or waterways.	

Section 7 - Stability and Reactivity

Stability:	Will generate heat on contact with water and will hydrolyze to sodium hydroxide and aluminum hydroxide.
Polymerization:	Hazardous polymerization does not occur.
Chemical Incompatibilities:	Incompatible with acids.
Hazardous Decomposition Products:	None.

Section 8 - Health Hazard Information

Primary Entry Routes:	Ingestion, contact
Target Organs:	N/A
Acute Effects:	Chemical (caustic) burns
Eye:	Chemical burn
Skin:	Chemical burn
Ingestion:	Burns, nausea, vomiting, diarrhea, stomach pain
Carcinogenicity:	IARC, NTP, and OSHA do not list Sodium aluminate as a carcinogen
Medical Conditions Aggravated by Long-Term Exposure:	Skin rashes
Chronic Effects:	IARC, NTP, and OSHA do not list

Section 9 - Spill, Leak, and Disposal Procedures

Spill /Leak Procedures:	Wear appropriate personal protective equipment. Do not come in contact with spilled material.
Small Spills:	Neutralize with sodium bicarbonate or weak acid solution.
Large Spills:	Dike and transfer spill to container for reuse and reprocessing. Can flush contaminated areas with large amounts of water and direct rinsing to chemical sewer or collect for treatment.
Cleanup:	Recover liquid when possible. Wash impacted areas with water to remove residues.
Regulatory Requirements:	Waste Sodium aluminate is not a RCRA listed hazardous waste. Waste material can be a RCRA Characteristic Waste (D002) if not neutralized.
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 Classification:	D002 (Corrosive) if the pH of the waste is ≥ 12.5
CERCLA Hazardous Substance (40 CFR 302.4):	Not listed CWA, Sec. 311 (b)(4)
CERCLA Reportable Quantity (RQ):	Not listed
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
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:	USALCO, LLC has not determined regulatory requirements for individual states.

Section 11 - Exposure Controls / Personal Protection

Ventilation:	Under normal conditions, Sodium aluminate solution will not generate mists or vapors. No special ventilation is recommended.
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. 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.
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. Avoid skin and eye contact. Wear appropriate protective clothing. Material is slippery; use caution if walking on spilled material.
Storage Requirements:	Keep containers tightly closed when not in use.

Sodium aluminate

MSDS No. 132

Section 13 - DOT Transportation Data (49 CFR 172.101)

Proper Shipping Name:	UN1819, Sodium aluminate, solution, 8, II	Packaging Authorizations	
		a) Exceptions:	173.154
Shipping Symbols:	-	b) Non-bulk Packaging:	173.203
		c) Bulk Packaging:	173.241
Hazard Class:	8	Quantity Limitations	
DOT No.:	UN1819	a) Passenger, Aircraft, or Railcar:	1 L
Packing Group:	II	b) Cargo Aircraft Only:	30 L
Label:	Corrosive	Vessel Stowage Requirements	
Special Provisions (172.102):	IB3, T4, TP1	a) Location:	A
2008 Emergency Response Guidebook:	Guide 154	b) Other:	52

Prepared By: Craig T. Owen
 Effective Date: 2/1/2012 Supercedes: NA

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.