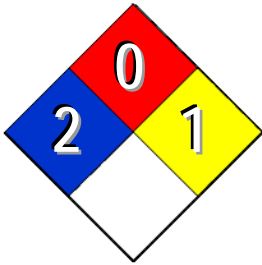



MATERIAL SAFETY DATA SHEET



NFPA	HMIS	PPE	Symbol(s)
		 Regulated	
Current Issue Date: November 30, 2012		Revision Number: 0	
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:	General Chemical, LLC 90 East Halsey Road Parsippany, NJ 07054		
For More Information:	General Chemical Performance Products Ltd. 90 East Halsey Road Parsippany, NJ 07054 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) 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	

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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	
<u>Flammable Properties</u>	
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
<u>Explosion Limits</u>	
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.

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8. EXPOSURE CONTROLS/PERSONAL PROTECTION					
<u>Component</u>	<u>ACGIH TLV</u>	<u>OSHA PEL</u>	<u>Ontario TWAEV</u>	<u>Mexico OEL (TWA)</u>	<u>NIOSH IDLH</u>
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.					
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				


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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.			
11. TOXICOLOGICAL INFORMATION				
<u>Acute Toxicity</u>				
<u>Component Information</u>				
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			
<u>Chronic Toxicity</u>				
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			
Teratogenicity	No information available			
Target Organ Effects	No information available			
Other Adverse Effects	No information available			
Endocrine Disruptor Information	No information available			
12. ECOLOGICAL INFORMATION				
<u>Ecotoxicity</u>				
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	<u>Aluminum sulfate component:</u> 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.			

Liquid Alum

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			
15. REGULATORY INFORMATION				
<u>International Inventories</u>				
TSCA	Yes			
DSL	Yes			
ELINCS	No			
EINECS	Yes			
ENCS	Yes			
CHIINA	Yes			
KECL	Yes			
PICCS	Yes			
AICS	Yes			
<u>U.S. Federal Regulations</u>				
<u>SARA 313</u>				
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				
<u>SARA 311/312 Hazardous Categorization</u>				
Chronic Health Hazard	No			
Acute Health Hazard	Yes			
Fire Hazard	No			
Sudden Release of Pressure Hazard	No			
Reactive Hazard	No			
<u>Clean Water Act</u>				
<u>Component</u>	<u>CWA – Reportable Quantities</u>	<u>CWA – Toxic Pollutants</u>	<u>CWA – Priority Pollutants</u>	<u>CWA – Hazardous Substances</u>
Aluminum sulfate	5000 lb			X
<u>CERCLA</u>				
<u>Component</u>	<u>CERCLA RQ (lb)</u>	<u>SARA TPQ (lb)</u>		
Aluminum sulfate	5000 lb			
<u>U.S. State Regulations</u>				
California Proposition 65				
This product does not contain any Proposition 65 chemicals.				

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State Right-to-Know					
<u>Component</u>	<u>Massachusetts</u>	<u>New Jersey</u>	<u>Pennsylvania</u>	<u>Illinois</u>	<u>Rhode Island</u>
Aluminum sulfate	X	X	X		
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:	November 30, 2012				
Previous Issue Date:	November 1, 2011				
Revision Summary:	Convert to GC Template				
<p>Disclaimer: <i>All information, statements, data, service and/or recommendations, including, without limitation, those relating to storage, loading/unloading, piping and transportation (collectively referred to herein as "information") are believed to be accurate and reliable. However, no representation or warranty, express or implied, is made as to its completeness, accuracy, fitness for a particular purpose or any other matter, including, without limitation, that the practice or application of any such information is free of patent infringement or other intellectual property misappropriation. General Chemical, LLC is not engaged in the business of providing technical, operational, engineering or safety information for a fee, and therefore; any such information provided herein has been furnished as an accommodation and without charge. All information provided herein is intended for use by persons having requisite knowledge, skill, and experience in the chemical industry. General Chemical, LLC shall not be responsible or liable for the use, application or implementation of the information, provided herein, and all such information is to be used at the risk, and in the sole judgment and discretion, of such persons, their employees, advisors and agents.</i></p> <p style="text-align: center;">End of MSDS</p>					