



Safety Data Sheet

Section 01 - Identification

Product Identifier	Aluminum Sulphate, granular
Other Means of Identification	Dry alum, papermaker's alum, dialuminum trisulphate, aluminum sulphate anhydrous, aluminum sulphate octadecahydrate
Product Use and Restrictions on Use	Coagulating agent in water treatment and pulp and paper, production of aluminum chemicals, general purpose food additive, fire extinguisher compounds, soaps, greases, drugs and cosmetics.
Initial Supplier Identifier	ClearTech Industries Inc. 1500 Quebec Avenue Saskatoon, SK. Canada S7K 1V7
Prepared By	ClearTech Industries Inc. Technical Writer Phone: 1 (800) 387-7503
24-Hour Emergency Phone	Phone: 1 (306) 664 – 2522

Section 02 - Hazard Identification

GHS-Classification

Serious Eye Damage/Eye Irritation Category 1

Physical Hazards

No known physical hazards

Danger

Hazard Statements

H318 – Causes serious eye damage.

Pictograms



Precautionary Statements

P280 – Wear eye protection and face protection.

P305 + P351 + P338 – IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310 – Immediately call a POISON CENTER or doctor/physician.

Section 03 - Composition / Information on Ingredients

Chemical Name	CAS Number	Weight %	Unique Identifiers
Aluminum Sulphate Anhydrous	10043-01-3	57-60%	Not Available
Water	7732-18-5	40-43%	

Section 04 - First Aid Measures

Inhalation	If symptoms are experienced, remove victim to fresh air. Give artificial respiration only if breathing has stopped. If breathing is difficult, give oxygen. Seek immediate medical attention.
Skin Contact / Absorption	Remove contaminated clothing. Wash affected area with soap and water. Seek medical attention if irritation occurs or persists.
Eye Contact	Contact lenses should never be worn when working with this product. Flush immediately with water for at least 30 minutes. Forcibly hold eyelids apart to ensure complete irrigation of eye tissue. Seek immediate medical attention.
Ingestion	Do not induce vomiting. If vomiting occurs, lean victim forward to prevent breathing in vomitus. Rinse mouth thoroughly with water. Give 1-2 glasses of water to the victim to drink. If vomiting occurs naturally, rinse the mouth out again and give another 1-2 glasses of water. Do not give anything by mouth to an unconscious or convulsing person. Seek immediate medical attention.
Additional Information	Advice to physician: treat symptomatically.

Section 05 - Fire Fighting Measures

Suitable Extinguishing Media	Product does not burn. Where fire is involved, use any fire fighting agent appropriate for surrounding material; use water spray to cool fire-exposed surfaces.
Unsuitable Extinguishing Media	Not Available
Specific Hazards Arising From the Chemical	At above 760°C or heated in open flame, sulphur oxide (toxic, corrosive, oxidizer), sulphur trioxide (toxic, corrosive, flammable) and aluminum oxide are released. The remaining residue is caustic.
Special Protective Equipment for Fire-Fighters	Wear NIOSH-approved self-contained breathing apparatus and protective clothing.
Further Information	Not Available

Section 06 - Accidental Release Measures

Personal Precautions / Protective Equipment / Emergency Procedures	Wear appropriate personal protective equipment. Ventilate area. Only enter area with PPE. Stop or reduce leak if safe to do so. Spray residue with plenty of water.
Environmental Precautions	Prevent material from entering sewers.
Methods and Materials for Containment and Cleaning Up	Collect liquid and/or residue and dispose of in accordance with applicable regulations.

Section 07 - Handling and Storage

Precautions for Safe Handling	Use proper equipment for lifting and transporting all containers. Use sensible industrial hygiene and housekeeping practices. Wash thoroughly after handling. Avoid all situations that could lead to harmful exposure.
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Conditions for Safe Storage Store in a cool, dry, well-ventilated place. Keep container tightly closed, and away from incompatible materials.

Incompatibilities Avoid moist air and strong bases. Incompatible with alkalis and water reactive materials such as oleum, which causes exothermic reactions.

Section 08 - Exposure Controls and Personal Protection

Exposure Limit(s)

Component	Regulation	Type of Listing	Value
Aluminum Sulphate	OSHA	PEL-TWA	2mg/m ³

Engineering Control(s)

Ventilation Requirements Mechanical ventilation (dilution or local exhaust), process or personnel enclosure and control of process conditions must be provided in accordance with all fire codes and regulatory requirements. Supply sufficient replacement air to make up for air removed by exhaust systems.

Other Emergency shower and eyewash must be available and tested in accordance with regulations and be in close proximity.

Protective Equipment

Eyes/Face Chemical goggles, full-face shield, or a full-face respirator is to be worn at all times when product is handled. Contact lenses should not be worn; they may contribute to severe eye injury.

Hand Protection Impervious gloves of chemically resistant material (rubber or PVC) should be worn at all times. Wash contaminated clothing and dry thoroughly before reuse.

Skin and Body Protection Body suite, aprons, and/or coveralls of chemical resistant material should be worn at all times. Wash contaminated clothing and dry thoroughly before reuse.

Impervious boots of chemically resistant material should be worn at all times. No special footwear is required other than what is mandated at place of work.

Respiratory Protection For dusty conditions wear a NIOSH/MSHA-approved dust or mist respirator. 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.

Thermal Hazards Not Available

Section 09 - Physical and Chemical Properties

Appearance

Physical State	Solid
Colour	White to creamy white
Odour	Odourless
Odour Threshold	Not Applicable

Property

pH	3.5
Melting Point/Freezing Point	Not Applicable
Initial Boiling Point and Boiling Range	Not Applicable

Flash Point	Not Applicable
Evaporation Rate	Not Applicable
Flammability	Non-Flammable
Upper Flammable Limit	Not Applicable
Lower Flammable Limit	Not Applicable
Vapour Pressure (mm Hg, 20°C)	Not Applicable
Vapour Density (Air=1)	Not Applicable
Relative Density	Not Available
Solubility(ies)	Soluble in water. Soluble in dilute acid; slightly soluble in ethanol; almost insoluble in anhydrous alcohol.
Partition Coefficient: n-octanol/water	Not Applicable
Auto-ignition Temperature	Not Applicable
Decomposition Temperature	650-760°C
Viscosity	Not Applicable
Explosive Properties	None
Specific Gravity (Water=1)	2.71
% Volatiles by Volume	Not Available
Formula	$\text{Al}_2(\text{SO}_4)_3 \cdot 14\text{H}_2\text{O}$
Molecular Weight	342.5

Section 10 - Stability and Reactivity

Reactivity	Not Available
Stability	Stable under normal conditions. Avoid temperatures above 760°C as this can yield toxic and corrosive gases.
Possibility of Hazardous Reactions	Polymerization will not occur.
Conditions to Avoid	Generation of airborne dusts, moisture, high temperatures.
Incompatible Materials	Avoid moist air and strong bases. Incompatible with alkalies and water reactive materials such as oleum, which causes exothermic reactions.
Hazardous Decomposition Products	In contact with moist air and strong bases, this product hydrolyzes readily to form acidic salts. Contact with alkalis and water-reactive materials causes exothermic reactions. May corrode ferrous metals and mild steel in presence of moisture.

Section 11 - Toxicological Information

Acute Toxicity Estimate

Component	Oral LD₅₀	Dermal LD₅₀	LC₅₀
Aluminum Sulphate (60%)	3216 mg/kg	Not Available	Not Available

Chronic Toxicity – Carcinogenicity

Component	IARC
Aluminum Sulphate	Not carcinogenic
Skin Corrosion/Irritation	May become acidic following contact with moisture on the skin. Can cause mild irritation.
Ingestion	May irritate the gastrointestinal tract and cause nausea, vomiting, and purging. Acute exposure can cause loss of coordination, muscle spasms, and kidney effects.
Inhalation	Dust or mist inhalation may irritate nose, throat, and lungs. Product hydrolyzes in lungs to form sulphuric acid.
Serious Eye Damage/Irritation	Can cause severe irritation and inflammation. Concentrated solutions may cause permanent damage or blindness.
Respiratory or Skin Sensitization	Not a skin or respiratory sensitizer.
Germ Cell Mutagenicity	A solution of Aluminum Sulfate in water produced positive results in cultured human cells (leukocytes), via sister chromatid exchanges, micronuclei and chromosomal aberrations). Negative results have been obtained in bacteria and cultured mammalian cells.
Reproductive Toxicity	In 88 women exposed during pregnancy to excessive Aluminum Sulfate levels in drinking water, the outcome of pregnancy, fetal viability and birth weight parameters were normal compared to unexposed controls. The only significant difference found in the infants of exposed mothers was an increase in skeletal malformations of the foot.
STOT-Single Exposure	Dusts of aluminum sulfate form sulfuric acid when in contact with moisture. Inhalation of dust or mist is irritating to respiratory tract.
STOT-Repeated Exposure	Repeated ingestion may cause phosphate deficiency, which can weaken bones.
Aspiration Hazard	Inhalation of high airborne concentrations may cause constriction of airways and can result in potentially fatal pulmonary edema.
Synergistic Materials	Not Available

Section 12 - Ecological Information

Ecotoxicity

Component	Toxicity to Algae	Toxicity to Fish	Toxicity to Daphnia and Other Aquatic Invertebrates
Aluminum sulphate anhydrous	Not Available	LC ₅₀ (Pimephales promelas, 96hr): 26.7-49.4mg/L	EC ₅₀ (Daphnia magna, 15min): 136mg/L
Biodegradability	Not Available		
Bioaccumulation	Not Available		
Mobility	Not Available		
Other Adverse Effects	May be harmful to aquatic life. Toxicity is primarily associated with acidic pH.		

Section 13 - Disposal Considerations

Waste From Residues/Unused Products	Dispose in accordance with all federal, provincial, and/or local regulations including the Canadian Environmental Protection Act.
Contaminated Packaging	Dispose in accordance with all federal, provincial, and/or local regulations including the Canadian Environmental Protection Act.

Section 14 - Transport Information

UN Number	Not Regulated
UN Proper Shipping Name	Not Regulated

Transport Hazard Class(es)	Not Regulated
Packaging Group	Not Regulated
Environmental Hazards	Not listed as a marine pollutant under Canadian TDG Regulations, schedule III.
Special Precautions	Not Available
Transport in Bulk	Not Available

TDG

Other Secure containers (full and/or empty) with suitable hold down devices during shipment and ensure all caps, valves, or closures are secured in the closed position.

TDG PRODUCT CLASSIFICATION: This product has been classified on the preparation date specified at section 14 of this MSDS / SDS, for transportation in accordance with the requirements of part 2 of the Transportation of Dangerous Goods Regulations. If applicable, testing and/or published test data regarding the classification of this product are listed in the references at section 16 of this MSDS / SDS.

Section 15 - Regulatory Information

NOTE: THE PRODUCT LISTED ON THIS SDS HAS BEEN CLASSIFIED IN ACCORDANCE WITH THE HAZARD CRITERIA OF THE CANADIAN CONTROLLED PRODUCTS REGULATIONS. THIS SDS CONTAINS ALL INFORMATION REQUIRED BY THOSE REGULATIONS.

Section 16 - Other Information

Preparation Date August 5, 2015

Note: The responsibility to provide a safe workplace remains with the user. The user should consider the health hazards and safety information contained herein as a guide and should take those precautions required in an individual operation to instruct employees and develop work practice procedures for a safe work environment. The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by the use of this material. It is the responsibility of the user to comply with all applicable laws and regulations.

Attention: Receiver of the chemical goods / SDS coordinator

As part of our commitment to the Canadian Association of Chemical Distributors (CACD) Responsible Distribution[®] initiative, ClearTech Industries Inc. and its associated companies require, as a condition of sale, that you forward the attached Safety Data Sheet(s) to all affected employees, customers, and end-users. ClearTech will send any available supplementary handling, health, and safety information to you at your request.

If you have any questions or concerns please call our customer service center.

References:

- 1) CHEMINFO
- 2) eChemPortal
- 3) TOXNET
- 4) Transportation of Dangerous Goods Canada
- 5) HSDB
- 6) ECHA

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