



# MATERIAL SAFETY DATA SHEET

## Aluminium Sulfate, Solid

### Section 01 - Chemical And Product And Company Information

**Product Identifier** ..... Aluminium Sulfate, Solid

**Product 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.

**Supplier Name** ..... ClearTech Industries Inc.  
2302 Hanselman Avenue  
Saskatoon, SK. Canada  
S7L 5Z3

**Prepared By** ..... ClearTech Industries Inc. Technical Department  
Phone: (306)664-2522

**Preparation Date** ..... December 21, 2007

**24-Hour Emergency Phone** ..... 306-664-2522

### Section 02 - Composition / Information on Ingredients

**Hazardous Ingredients** ..... Aluminium Sulfate 100%(w/w)

**CAS Number** ..... Aluminium Sulfate 10043-01-3

**Synonym (s)** ..... Dry alum, papermaker's alum, dialuminum trisulphate

### Section 03 - Hazard Identification

**Inhalation** ..... Dust or mist inhalation may irritate nose, throat, and lungs. Product hydrolyzes in lungs to form sulphuric acid.

**Skin Contact / Absorption** ..... May cause skin irritation, especially under repeated or prolonged contact, or when moisture is present. May cause pain and severe burns to skin and brownish or yellow stains. May cause redness, drying, and cracking of skin.

**Eye Contact** ..... May irritate or burn eyes. Possible corneal damage.



**Ingestion**..... May irritate the gastrointestinal tract and cause nausea, vomiting, and purging. Acute exposure can cause loss of coordination, muscle spasms, and kidney effects.

**Exposure Limits**..... TWA= 2mg/m<sup>3</sup> from the Ontario Ministry of Labour for water soluble compounds of aluminum.

**Section 04 - First Aid Measures**

**Inhalation**..... 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**..... Flush immediately with water for at least 20 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**

**Conditions of Flammability**..... Non-flammable

**Means of Extinction**..... 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.

**Flash Point**..... Not applicable

**Auto-ignition Temperature**..... Not applicable

**Upper Flammable Limit** ..... Not applicable

**Lower Flammable Limit**..... Not applicable



**Hazardous Combustible Products...** 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 Fire Fighting Procedures.....** Wear NIOSH-approved self-contained breathing apparatus and protective clothing.

**Explosion Hazards.....** None

**Section 06 - Accidental Release Measures**

**Leak / Spill.....** Wear appropriate personal protective equipment. Ventilate area. Stop or reduce leak if safe to do so. Spray residue with plenty of water. Prevent material from entering sewers.

**Deactivating Materials.....** Soda ash, sodium bicarbonate, and sodium hydroxide. Note that adequate ventilation is required if soda ash or limestone is used because of possible carbon dioxide gas formation.

**Section 07 - Handling and Storage**

**Handling Procedures.....** 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.

**Storage Requirements.....** Store in a cool, dry, well-ventilated place. Keep container tightly closed, and away from incompatible materials.

**Section 08 - Personal Protection and Exposure Controls**

**Protective Equipment**

**Eyes.....** 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.

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

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

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



**Footwear**..... Impervious boots of chemically resistant material should be worn.

### Engineering Controls

**Ventilation Requirements**..... Mechanical ventilation (dilution or local exhaust), process or personnel enclosure and control of process conditions should be provided. Supply sufficient replacement air to make up for air removed by exhaust systems.

**Other**..... Emergency shower and eyewash should be in close proximity.

## Section 09 - Physical and Chemical Properties

**Physical State**..... Solid

**Odor and Appearance**..... White to creamy white odourless granules or powder

**Odor Threshold**..... Non applicable

**Specific Gravity (Water=1)**..... 1.61

**Vapor Pressure (mm Hg, 20C)**..... Not applicable

**Vapor Density (Air=1)**..... Not applicable

**Evaporation Rate**..... Not applicable

**Boiling Point**..... Not applicable

**Freeze/Melting Point**..... Not applicable

**pH**..... 1% solution= 3.5; 10% solution= 3.0

**Water/Oil Distribution Coefficient**.... Not applicable

**Bulk Density**..... Variable (~ 68lbs/ft<sup>3</sup>)

**% Volatiles by Volume**..... Not available

**Solubility in Water**..... 50% w/w at 0°C

**Molecular Formula**..... Al<sub>2</sub>(SO<sub>4</sub>)<sub>3</sub>·14H<sub>2</sub>O (approx.)

**Molecular Weight**..... 594 (approx.)



## Section 10 - Stability and Reactivity

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

## Section 11 - Toxicological Information

- Irritancy**..... Moderate irritant
- Sensitization**..... Not available
- Chronic/Acute Effects**..... This product has been shown to cause liver, kidney, and nervous system toxicity when tested with laboratory animals. Repeated ingestion may cause phosphate deficiency, which can weaken bones.
- Synergistic Materials**..... Not available
- Animal Toxicity Data**..... Low toxicity via oral and inhalation routes.  
LD<sub>50</sub>(oral,mouse)= 6207mg Al/kg  
LD<sub>50</sub>(oral, rat)= 1930mg Al/kg  
Human fatal dose recorded at 30 g.
- Carcinogenicity**..... Not considered to be carcinogenic (NTP, OSHA, IARC, ACGIH)
- Reproductive Toxicity**..... Not available
- Teratogenicity**..... Not available
- Mutagenicity**..... Not available

## Section 12 - Ecological Information

- Fish Toxicity**..... TL<sub>m</sub>(Mosquito fish,freshwater,48 hour)= 240mg/L  
LC<sub>50</sub>(96 hrs, largemouth bass)= 250ppm



**Biodegradability**..... Not available

**Environmental Effects**..... May be harmful to aquatic life. Toxicity is primarily associated with acidic pH.

**Section 13 - Disposal Consideration**

**Waste Disposal**.....Dispose in accordance with all federal, provincial, and/or local regulations including the Canadian Environmental Protection Act.

**Section 14 - Transportation Information**

**TDG Classification**

**Class**..... 9(only regulated if package is greater that 3954 kg)

**Group**..... III(only regulated if package is greater that 3954 kg)

**PIN Number**..... UN 3077(only regulated if package is greater that 3954 kg)

**Other**..... Secure containers (full and/or empty) with suitable hold down devises during shipment.

**Section 15 - Regulatory Information**

**WHMIS Classification**.....D2

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

**Section 16 - Other Information**

**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 / MSDS 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 Material 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 or technical service department.

### ClearTech Industries Inc. - Locations

**Corporate Head Office: 2302 Hanselman Avenue, Saskatoon, SK, S7L 5Z3**

**Phone: 306-664-2522**

**Fax: 306-665-6216**

**[www.ClearTech.ca](http://www.ClearTech.ca)**

| <b>Location</b>  | <b>Address</b>                    | <b>Postal Code</b> | <b>Phone Number</b> | <b>Fax Number</b> |
|------------------|-----------------------------------|--------------------|---------------------|-------------------|
| Richmond, B.C.   | 12431 Horseshoe Way               | V7A 4X6            | 604-272-4000        | 604-272-4596      |
| Calgary, AB.     | 5516E - 40 <sup>th</sup> St. S.E. | T2C 2A1            | 403-279-1096        | 403-236-0989      |
| Edmonton, AB.    | 11750 - 180 <sup>th</sup> Street  | T5S 1N7            | 780-452-6000        | 780-452-4600      |
| Saskatoon, SK.   | 2302 Hanselman Avenue             | S7L 5Z3            | 306-933-0177        | 306-933-3282      |
| Regina, SK.      | 555 Henderson Drive               | S42 5X2            | 306-721-7737        | 306-721-8611      |
| Winnipeg, MB.    | 340 Saulteaux Crescent            | R3J 3T2            | 204-987-9777        | 204-987-9770      |
| Mississauga, ON. | 7480 Bath Road                    | L4T 1L2            | 905-612-0566        | 905-612-0575      |

**24 Hour Emergency Number - All Locations - 306-664-2522**