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## Section 01 Identification

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<b>Product Identifier</b>	Aluminum Sulphate Solution NSF® - 60
<b>Other Means of Identification</b>	Liquid alum; aluminum sulfate solution; papermaker's alum; sulphuric acid, aluminum salt.
<b>Product Use and Restrictions on Use</b>	Coagulating agent in municipal and industrial water and wastewater treatment, additive in papermaking.
<b>Initial Supplier Identifier</b>	ClearTech Industries Inc. 1500 Quebec Avenue Saskatoon, SK. Canada S7K 1V7  Phone: 800.387.7503 Fax: 888.281.8109 <a href="http://www.cleartech.ca">www.cleartech.ca</a>
<b>Prepared By</b>	ClearTech Industries Inc. technical writer
<b>24-Hour Emergency Phone</b>	306.664.2522

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## Section 02 Hazard Identification

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### Physical Hazards

**Corrosive to metals** Category 1

### Health Hazards

**Serious eye damage / eye irritation** Category 1

### Signal Word

**Danger**

### Hazard Statements

H290 May be corrosive to metals.

H318 Causes serious eye damage.

### Pictograms



### Precautionary Statements

#### **Prevention**

P234 Keep only in original packaging.

P280 Wear protective gloves, protective clothing, eye protection, face protection.

## Response

- P305 P351 P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.  
P310  
P390 Absorb spillage to prevent material damage.

## Hazards Not Otherwise Classified

Not available

## Supplemental Information

Not available

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## Section 03 Composition / Information on Ingredients

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### Hazardous Ingredients:

Chemical name	Common name(s)	CAS number	Concentration (w/w%)
Aluminum sulphate	Alum	10043-01-3	30-60%

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## Section 04 First-Aid Measures

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### Description of necessary first-aid measures

- Inhalation** Get medical advice / attention if you feel unwell or are concerned.
- Ingestion** Get medical advice / attention if you feel unwell or are concerned.
- Skin contact** Rinse skin with lukewarm, gently flowing water / shower for 5 minutes or until product is removed. If skin irritation occurs or if you feel unwell: Get medical advice / attention.
- Eye contact** Remove source of exposure or move person to fresh air. Rinse eyes cautiously with lukewarm, gently flowing water for several minutes, while holding the eyelids open. Remove contact lenses, if present and easy to do. Continue rinsing for Take care not to rinse contaminated water into the unaffected eye or onto the face. Immediately call a POISON CENTER or doctor.

### Most important symptoms and effects, both acute and delayed

- Inhalation** May cause respiratory irritation.
- Ingestion** May cause discomfort or nausea.
- Skin contact** Not available
- Eye contact** Causes serious eye damage.
- Further information** For further information see Section 11 Toxicological Information.

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## Section 05 Fire Fighting Measures

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- Suitable extinguishing media** Extinguish fire using extinguishing agents suitable for the surrounding fire.
- Unsuitable extinguishing media** Not available
- Specific hazards arising from the chemical** In the event of a fire oxides of Sulphur may be released.
- Special protective equipment for fire-fighters** Wear NIOSH-approved self-contained breathing apparatus and protective clothing.

## Section 06 Accidental Release Measures

<b>Personal Precautions / Protective Equipment / Emergency Procedures</b>	Wear appropriate personal protective equipment. Ventilate area. Only enter area with PPE. Stop or reduce leak if safe to do so.
<b>Environmental Precautions</b>	Prevent material from entering sewers or confined spaces. Notify local health and wildlife officials. Notify operators of nearby water intakes.
<b>Methods and Materials for Containment and Cleaning Up</b>	SMALL SPILLS: Clean up spill with non-reactive absorbent and place in suitable, covered, labeled containers. Flush area with water. Contaminated absorbent material may pose the same hazards as the spilled product. LARGE SPILLS: Contact fire and emergency services and supplier for advice.

## Section 07 Handling and Storage

<b>Precautions for Safe Handling</b>	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. Avoid generating vapours, fumes, or mists. Prevent the release of vapours, fumes, or mists into the workplace air. Inspect containers for damage or leaks before handling. If the original label is damaged or missing replace with a workplace label.
<b>Conditions for Safe Storage</b>	Store in a cool, dry, well-ventilated area, out of direct sunlight, away from heat sources and incompatible materials. Always store in original labeled container. Keep containers tightly closed when not in use and when empty. Empty containers may contain hazardous residues. Protect label and keep it visible.
<b>Incompatibilities</b>	Strong oxidizing agents, strong bases. Corrosive to aluminum, zinc, carbon steel

## Section 08 Exposure Controls and Personal Protection

### Exposure limits

Component	Regulation	Type of listing	Value
Aluminum sulphate	OSHA	PEL-TWA	2 mg/m <sup>3</sup> as aluminum

### Engineering controls

<b>Ventilation Requirements</b>	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.
<b>Other</b>	A soak hose and eyewash station or emergency shower and eyewash station must be available, tested, and be in close proximity to the product being handled in accordance with provincial regulations.

### Protective equipment

<b>Eye and face protection</b>	Chemical goggles, full-face shield, or a full-face respirator is to be worn at all times when product is handled. Contact lenses should never be worn; they may contribute to severe eye injury.
<b>Hand protection</b>	Impervious gloves of chemically resistant material should be worn at all times. Wash contaminated clothing and dry thoroughly before reuse.

<b>Foot protection</b>	No special footwear is required other than what is mandated at place of work.
<b>Skin and body protection</b>	No specific requirement beyond what is mandated at place of work.
<b>Respiratory protection</b>	No specific guidelines are available. Where required, an approved respirator suitable for non-toxic vapours, fumes, or mists may be adequate.
<b>Thermal hazards</b>	Not available

## Section 09 Physical and Chemical Properties

### Appearance

<b>Physical state</b>	Liquid
<b>Colour</b>	Clear to pale yellow
<b>Odour</b>	Odourless
<b>Odour threshold</b>	Not available

### Property

<b>pH</b>	1.8-2.3
<b>Melting point / freezing point</b>	-1 °C to -16 °C
<b>Initial boiling point and boiling range</b>	101 °C
<b>Flash point</b>	Not applicable
<b>Evaporation rate</b>	Not available
<b>Flammability</b>	Not applicable
<b>Upper flammable limit</b>	Not available
<b>Lower flammable limit</b>	Not available
<b>Vapour pressure</b>	Not available
<b>Vapour density</b>	Not available
<b>Relative density</b>	Not applicable
<b>Solubility</b>	Soluble in water
<b>Partition coefficient: n-octanol/water</b>	Not available
<b>Auto-ignition temperature</b>	Not applicable
<b>Decomposition temperature</b>	650-760 °C
<b>Viscosity</b>	Not available
<b>Specific gravity</b>	~1.3 g/ml
<b>Formula</b>	$Al_2(SO_4)_3$
<b>Molecular weight</b>	342.131 g/mol

## Section 10 Stability and Reactivity

<b>Reactivity</b>	Not available
<b>Stability</b>	This product is stable if stored according to the recommendations in Section 07. Not available
<b>Possibility of hazardous reactions</b>	Not available
<b>Conditions to avoid</b>	Contact with incompatible materials. Not available
<b>Incompatible materials</b>	Strong oxidizing agents, strong bases. Corrosive to aluminum, zinc, carbon steel
<b>Hazardous decomposition products</b>	Not available

## Section 11 Toxicological Information

### Acute Toxicity (LD50 values)

Component	Route	Species	Value	Exposure time
Aluminum sulphate	Oral	Rat	1930 mg/kg	

### Toxic Health Effect Summary

<b>Chemical Characteristics</b>	No known effects
<b>Skin</b>	Redness
<b>Ingestion</b>	May cause discomfort or nausea.
<b>Inhalation</b>	May cause respiratory irritation. Long term exposure to high levels of aluminum sulphate have lead to the development of occupational asthma.
<b>Eye contact</b>	Causes serious eye damage.
<b>Delayed and Chronic</b>	No known carcinogenic, mutagenic or sensitization effects.

## Section 12 Ecological Information

### Ecotoxicity

Component	Type	Species	Value	Exposure Time
Aluminum sulphate	LC50	Fathead minnow	33.9 mg/L	96 hours
	LC50	Zebra mussel	130.5 mg/L	24 hours

<b>Biodegradability</b>	This product contains inorganic salts that are already present in the environment.
<b>Bioaccumulation</b>	This product is not expected to bioaccumulate.
<b>Mobility</b>	This product is water soluble, but will adsorb to soil and is not expected to contaminate ground water.
<b>Other adverse effects</b>	Not available

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## Section 13 Disposal Considerations

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<b>Waste From Residues / Unused Products</b>	Dispose in accordance with all federal, provincial, and local regulations including the Canadian Environmental Protection Act.
<b>Contaminated Packaging</b>	Do not remove label, follow label warnings even after the container is empty. Empty containers should be recycled or disposed of at an approved waste handling facility.

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## Section 14 Transport Information

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<b>UN number</b>	UN3264
<b>UN proper shipping name</b>	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (ALUMINUM SULPHATE)
<b>Transport hazard class(es)</b>	8
<b>Packing group</b>	III
<b>Excepted quantities</b>	5 L
<b>Environmental hazards</b>	Not listed as a marine pollutant under Canadian TDG Regulations, schedule III. Not available
<b>Special precautions</b>	Not available
<b>Transport in bulk</b>	Not available
<b>Additional information</b>	Secure containers (full or empty) with suitable hold down devices during shipment and ensure all caps, valves, or closures are secured in the closed position.

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

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## Section 15 Regulatory Information

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

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## Section 16 Other Information

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**Date of latest revision: March 06, 2019**

**Note:** The responsibility to provide a safe workplace remains with the buyer / user. The buyer / 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 buyer / user to comply with all applicable laws and regulations regarding handling, using, reselling and shipping this product.

### **Attention: Receiver of the chemical goods / SDS coordinator**

As part of our commitment to the RDC 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) TOXNET
- 3) eChemPortal
- 4) ECHA
- 5) Transportation of Dangerous Goods Canada
- 6) HSDB
- 7) PAN