Safety Data Sheet

Section 1. Identification

Product Identifier	Aluminum Sulphate Solution NSF® - 60
Other Means of Identification	Liquid alum; aluminum sulfate solution; papermaker's alum; sulphuric acid, aluminum salt; CAS: 10043-01-3
Product Use and Restrictions on Use	Coagulating agent in municipal and industrial water and wastewater treatment, additive in papermaking. This product is certified to NSF / ANSI / CAN standard 60 for use in drinking water, see section 15 and the NSF website for further information.
Initial Supplier Identifier	ClearTech Industries Inc. 1500 Quebec Avenue Saskatoon, SK. Canada S7K 1V7 Phone: 800.387.7503 Fax: 888.281.8109 www.cleartech.ca
24-Hour Emergency Phone	306.664.2522

Section 02 Hazard Identification

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, 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

Section 3. Composition / Information on Ingredients

Hazardous Ingredients:

Chemical name	*Common name(s)*	*CAS number*	*Concentration (w/w%)*
Sulfuric acid, aluminum salt (3:2)	Aluminum sulphate; Alum	10043-01-3	26-30%

Section 4. First-Aid Measures

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 30 minutes. 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.

Section 5. Fire Fighting Measures

Suitable extinguishing media	Extinguish fire using extinguishing agents suitable for the surrounding fire.
Unsuitable extinguishing media	Water jets are not recommended in fires involving chemicals.
Specific hazards arising from the chemical	Reacts with many metals to liberate hydrogen gas that can form explosive mixtures. 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 chemical-protective clothing.

Section 6. Accidental Release Measures

Personal Precautions / Protective Equipment / Emergency Procedures	Wear appropriate personal protective equipment (See Section 08 Exposure Controls and Personal Protection). Stay upwind, ventilate area. Do not use material handling equipment with exposed metal surfaces.
Environmental Precautions	Prevent material from entering waterways, sewers or confined spaces. Notify local health and wildlife officials. Notify operators of nearby water intakes.

Methods and Materials for Containment and Cleaning Up	SMALL SPILLS: Stop or reduce leak if safe to do so. 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 7. Handling and Storage

Precautions for Safe Handling	A soak hose and eyewash station or emergency shower and eyewash station should be available, tested, and be in close proximity to the product being handled in accordance with provincial regulations. Use sensible workplace hygiene and housekeeping practices. Wash thoroughly after handling. Avoid all situations that could lead to harmful exposure. Inspect containers for damage or leaks before handling. If the original label is damaged or missing replace with a workplace label. Have suitable emergency equipment for fires, spills and leaks readily available.
Conditions for Safe Storage	Store in a cool, dry 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. Do not transfer to metal containers.
Incompatibilities	Bases, such as potassium hydroxide, sodium hydroxide, calcium hydroxide (slaked lime), ammonia, carbonates. Metals, such as aluminum, carbon steel, and brass.

Section 8. Exposure Controls and Personal Protection

Exposure limits

Component	Regulation	Type of listing	Value
Aluminum sulphate	OSHA	PEL-TWA	2 mg/m³ as aluminum

Engineering controls

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

Protective equipment

The following are recommendations only. It is the responsibility of the employer / user to conduct a hazard assessment of the process in which this product being used and determine the proper engineering controls and PPE for their process. Additional regulatory and safety information should be sought from local authorities and, if needed, a professional industrial hygienist.

Eye and face protection	Where there is potential eye or face exposure, tightly fitting safety goggles and a face shield or a full face respirator or similar protective equipment which protects the wearer's face and eyes are recommended. Contact lenses are not recommended; they may contribute to severe eye injury.
Hand and body protection	Where handling this product it is recommended that skin contact is avoided.
Respiratory protection	If mists or aerosols are generated during handling, wear approved respiratory protection. Reevaluate any respiratory protection used regularly, as their protective effects tend to degrade over time.

Section 9. Physical and Chemical Properties

Physical state	Liquid
Colour	Clear to pale yellow

Odour	Odourless
Odour threshold	Not available
pH	1.4-2.6
Melting point / freezing point	-1 °C to -16 °C
Initial boiling point and boiling range	101 °C
Flash point	Not applicable
Evaporation rate	Not available
Flammability	Not applicable
Upper flammable limit	Not available
Lower flammable limit	Not available
Vapour pressure	Not available
Vapour density	Not available
Relative density	Not applicable
Solubility	Soluble in water
Partition coefficient: n-octanol/water	Not available
Auto-ignition temperature	Not applicable
Decomposition temperature	650-760 °C
Viscosity	Not available
Specific gravity	~1.3
Particle characteristics	Not applicable

Section 10. Stability and Reactivity

Reactivity	May be corrosive to metals. Reacts with many metals to liberate hydrogen gas that can form explosive mixtures. Reacts violently with bases.
Stability	This product is stable if stored according to the recommendations in Section 07.
Possibility of hazardous reactions	Hazardous polymerization is not known to occur.
Conditions to avoid	Avoid contact with incompatible materials. Do not freeze.
Incompatible materials	Bases, such as potassium hydroxide, sodium hydroxide, calcium hydroxide (slaked lime), ammonia, carbonates. Metals, such as aluminum, carbon steel, and brass.
Hazardous decomposition products	Thermal decomposition may produce oxides of sulphur.

Section 11. Toxicological Information

Acute Toxicity (LD50 / LC50 values)

Component	*Route*	*Species*	*Value*	*Exposure time*
Aluminum sulphate, hydrate	Oral	Rat	>2000 mg/kg bw	
	Dermal	Rabbit	>5000 mg/kg bw	24 hours

Toxic Health Effect Summary

Chemical characteristics	No known effects

Skin	Not available
Ingestion	May cause discomfort or nausea.
Inhalation	May cause respiratory irritation.
Eye contact	Causes serious eye damage.
Sensitization	This product and its components at their listed concentration have no known sensitizing effects.
Mutagenicity	This product and its components at their listed concentration have no known mutagenic effects.
Carcinogenicity	This product and its components at their listed concentration have no known carcinogenic effects.
Reproductive toxicity	This product and its components at their listed concentration have no known reproductive effects.
Specific organ toxicity	This product and its components at their listed concentration have no known effects on specific organs.
Aspiration hazard	Not available
Synergistic materials	Not available

Section 12. Ecological Information

Ecotoxicity

Component	*Type*	*Species*	*Value*	*Exposure Time*
Aluminum	LC50	Fish	9.4 mg/L (pH 5)	96 hours
			>85.9 mg/L (pH 7.5)	
	EC50	Algea	0.12-3.2 mg/L (pH dependant)	72 hours

Biodegradability	The domestic substance list categorizes aluminum sulphate as persistent.
Bioaccumulation	The domestic substance list categorizes all of the components of this product as non-bioaccumulative.
Mobility	This product is water soluble, but is expected to adsorb to soil and is not expected to contaminate ground water.
Other adverse effects	The domestic substance list categorizes aluminum sulphate as inherently toxic to aquatic organisms.

Section 13. Disposal Considerations

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

Section 14. Transport Information

UN number	UN3264
UN proper shipping name and description	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Aluminum Sulphate)
Transport hazard class(es)	8
Packing group	III
Excepted quantities	5 L
Environmental hazards	Not listed as a marine pollutant under Canadian TDG Regulations, schedule III.
Special precautions	

Transport in bulk	ERAP index: not available MARPOL 73/78 and IBC Code: This product is not listed in Chapter 17 of the IBC Code.
Additional information	Secure containers (full or empty) during shipment and ensure all caps, valves, or closures are secured in the closed position. Special Provisions: 16 (1) The technical name of at least one of the most dangerous substances that predominantly contributes to the hazard or hazards posed by the dangerous goods must be shown, in parentheses, on the shipping document following the shipping name in accordance with clause 3.5(1)(c)(ii)(A) of Part 3 (Documentation). The technical name must also be shown, in parentheses, on a small means of containment or on a tag following the shipping name in accordance with subsections 4.11(2) and (3) of Part 4 (Dangerous Goods Safety Marks).

Section 15. Regulatory Information.

All components of this product appear on the domestic substance list.

NSF Certification: Aluminum Sulphate Solution is certified to NSF / ANSI / CAN Standard 60 for coagulation & flocculation at a maximum dosage of: 330 mg/L. NSF product use restrictions based on requirements obtained from the NSF website; consult NSF website for current requirements.

Section 16. Other Information

Date of latest revision: September 22, 2025

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) *NIOSH Pocket Guide to Chemical Hazards;* U.S. Department of Health and Human Services, https://www.cdc.gov/niosh/npg/default.html
2) *WorkSafe BC E-Limit;* Workers' Compensation Foard of British Columbia, https://elimit.online.worksafebc.com/
3) *ECHA - Registered Substance Dossier;* European Chemicals Agency, https://echa.europa.eu/registration-dossier/-/registered-dossier/16061
4) *Transportation of Dangerous Goods Regulations;* Transport Canada, https://laws-lois.justice.gc.ca/eng/regulations/SOR-2001-286/index.html
5) Globally Harmonized System of Classification and Labeling of Chemicals (GHS) *Seventh revised edition*
6) International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code) 2007 Edition
7) The ACS Style Guide