



MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Product Name	Aluminum Sulphate
CAS #	Mixture
Product use	Paper production. Water Treatment (potable and wastewater).
Manufacturer	United States Aluminate Company 9411 Philadelphia Road, Suite H Baltimore, MD 21237 US Business Phone: 1-800-531-5778
Supplier	SODROX Chemicals Ltd. 7040 Wellington Road 124, R.R. #6 Guelph, ON N1H 6J3 Canada Business Phone: 519-837-2330 Fax: 519-837-3300 Emergency Phone: 1-800-363-6824

2. Hazards Identification

Emergency overview	DANGER CAUSES EYE IRRITATION. CAUSES SKIN IRRITATION. MAY BE FATAL IF SWALLOWED OR INHALED. Corrosive to metals.
Potential short term health effects	
Routes of exposure	Eye, Skin contact, Inhalation, Ingestion.
Eyes	Contact will irritate or burn eyes.
Skin	May cause severe irritation.
Inhalation	Harmful if inhaled. May cause respiratory tract irritation.
Ingestion	Harmful if swallowed. May cause stomach distress, nausea or vomiting.
Target organs	Eyes. Respiratory system. Skin.
Chronic effects	Prolonged or repeated exposure to dilutions can cause drying, defatting and dermatitis.
Signs and symptoms	Symptoms may include redness, edema, drying, defatting and cracking of the skin. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.
OSHA Regulatory Status	This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
Potential environmental effects	See section 12.

3. Composition / Information on Ingredients

Ingredient(s)	CAS #	Percent
Aluminum sulphate	10043-01-3	30 - 60

4. First Aid Measures

First aid procedures	
Eye contact	Immediately flush with cool water. Remove contact lenses, if applicable, and continue flushing for 20 minutes. Obtain medical attention immediately.
Skin contact	Immediately flush with cool water for 20 minutes while removing contaminated clothing and shoes. Discard or wash well before reuse. Obtain medical attention if irritation persists.
Inhalation	If symptoms develop move victim to fresh air. If symptoms persist, obtain medical attention.
Ingestion	Do not induce vomiting. Never give anything by mouth if victim is unconscious, or is convulsing. Obtain medical attention.
Notes to physician	Symptoms may be delayed.

General advice

If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Avoid contact with eyes and skin. Wear impervious gloves and chemical splash goggles. Keep out of reach of children.

5. Fire Fighting Measures

Flammable properties	Not flammable by WHMIS/OSHA criteria.
Extinguishing media	
Suitable extinguishing media	Treat for surrounding material.
Unsuitable extinguishing media	Use water and foam with care - may liberate sulfuric acid
Protection of firefighters	
Specific hazards arising from the chemical	Not available
Protective equipment for firefighters	Firefighters should wear full protective clothing including self contained breathing apparatus.
Hazardous combustion products	May include and are not limited to: Oxides of sulphur. Oxides of aluminum. Sulfuric acid.
Explosion data	
Sensitivity to mechanical impact	Not available
Sensitivity to static discharge	Not available

6. Accidental Release Measures

Personal precautions	Keep unnecessary personnel away. Do not touch or walk through spilled material. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Keep people away from and upwind of spill/leak.
Environmental precautions	Prevent entry into waterways, sewers, basements or confined areas.
Methods for containment	Stop leak if you can do so without risk.
Methods for cleaning up	Should not be released into the environment. Before attempting clean up, refer to hazard data given above. Small spills may be absorbed with non-reactive absorbent and placed in suitable, covered, labelled containers. Prevent large spills from entering sewers or waterways. Contact emergency services and supplier for advice. Never return spills to original containers for re-use.

7. Handling and Storage

Handling	Use good industrial hygiene practices in handling this material. Do not get in eyes, on skin or on clothing. Avoid breathing vapors or mists of this product. Use only with adequate ventilation. Wash thoroughly after handling.
Storage	Keep out of the reach of children. Store in a closed container away from incompatible materials.

8. Exposure Controls / Personal Protection

Exposure limits

Ingredient(s)	Exposure Limits
Aluminum sulphate	ACGIH-TLV TWA: 2 mg/m3 OSHA-PEL TWA: 2 mg/m3

Engineering controls Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

Personal protective equipment

Eye / face protection	Wear chemical goggles and face shield.
Hand protection	Impervious gloves. Confirm with reputable supplier first.

Skin and body protection	As required by employer code.
Respiratory protection	Where exposure guideline levels may be exceeded, use an approved NIOSH respirator.
General hygiene considerations	Use good industrial hygiene practices in handling this material. When using do not eat or drink. Wash hands before breaks and immediately after handling the product.

9. Physical and Chemical Properties

Appearance	Clear
Color	Beige - Amber
Form	Liquid
Odor	Odorless
Odor threshold	Not available
Physical state	Liquid
pH	2.3 - 2.6
Melting point	Not available
Freezing point	32.00 °F (0 °C)
Boiling point	221.00 °F (105 °C)
Pour point	Not available
Evaporation rate	Not available
Flash point	Not applicable
Auto-ignition temperature	Not applicable
Flammability limits in air, lower, % by volume	Not applicable
Flammability limits in air, upper, % by volume	Not applicable
Vapor pressure	Not applicable
Vapor density	Not applicable
Specific gravity	1.32
Octanol/water coefficient	Not available
Solubility (H2O)	Soluble
Viscosity	Not available
Percent volatile	Not applicable

10. Stability and Reactivity

Reactivity	May react with strong bases or oxidizing agents.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Chemical stability	Stable under recommended storage conditions.
Conditions to avoid	Do not mix with other chemicals.
Incompatible materials	Caustics. Oxidizers. Corrosive to aluminum, steel and cast iron.
Hazardous decomposition products	May include and are not limited to: Oxides of sulphur. Oxides of aluminum. Sulfuric acid.

11. Toxicological Information

Component analysis - LC50

Ingredient(s)	LC50
Aluminum sulphate	Not available

Component analysis - Oral LD50

Ingredient(s)	LD50
Aluminum sulphate	1930 mg/kg rat

Effects of acute exposure

Eye	Contact will irritate or burn eyes.
Skin	May cause severe irritation.
Inhalation	Harmful if inhaled. May cause respiratory tract irritation.

Ingestion	Harmful if swallowed. May cause stomach distress, nausea or vomiting.
Sensitization	Non-hazardous by WHMIS/OSHA criteria.
Chronic effects	Non-hazardous by WHMIS/OSHA criteria.
Carcinogenicity	Non-hazardous by WHMIS/OSHA criteria.
Mutagenicity	Non-hazardous by WHMIS/OSHA criteria.
Reproductive effects	Non-hazardous by WHMIS/OSHA criteria.
Teratogenicity	Non-hazardous by WHMIS/OSHA criteria.
Name of Toxicologically Synergistic Products	Not available

12. Ecological Information

Ecotoxicity	Components of this product have been identified as having potential environmental concerns.	
Ecotoxicity - Freshwater Fish - Acute Toxicity Data		
Aluminum sulphate	10043-01-3	96 Hr LC50 Carassius auratus: 100 mg/L; 96 Hr LC50 Gambusia affinis: 37 mg/L [static]
Ecotoxicity - Water Flea - Acute Toxicity Data		
Aluminum sulphate	10043-01-3	15 Min EC50 Daphnia magna: 136 mg/L
Persistence / degradability	Not available	
Bioaccumulation / accumulation	Not available	
Mobility in environmental media	Not available	
Environmental effects	Harmful to aquatic life.	
Aquatic toxicity	Not available	
Partition coefficient	Not available	
Chemical fate information	Not available	
Other adverse effects	Not available	

13. Disposal Considerations

Disposal instructions	Review federal, state/provincial, and local government requirements prior to disposal.
Waste from residues / unused products	Not available
Contaminated packaging	Not available

14. Transport Information

U.S. Department of Transportation (DOT)

Basic shipping requirements:

Proper shipping name	Corrosive liquid, acidic, inorganic, n.o.s. (ALUMINUM SULPHATE RQ = 10417 lbs)
Hazard class	8
UN number	3264
Packing group	III
Additional information:	
Special provisions	IB3, T7, TP1, TP28



Transportation of Dangerous Goods (TDG - Canada)

Basic shipping requirements:

Proper shipping name	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (ALUMINUM SULPHATE)
Hazard class	8
UN number	3264
Packing group	III
Additional information:	
Special provisions	16



15. Regulatory Information

Canadian federal regulations	This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.
WHMIS status	Controlled
WHMIS classification	Class D - Division 2B, Class E - Corrosive Material
WHMIS labeling	



Occupational Safety and Health Administration (OSHA)

29 CFR 1910.1200 hazardous chemical Yes

US Federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

U.S. - CERCLA/SARA - Hazardous Substances and their Reportable Quantities

Aluminum sulphate 10043-01-3 5000 Lb final RQ; 2270 kg final RQ

CERCLA (Superfund) reportable quantity

Aluminum sulphate: 5000.0000

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

Section 302 extremely hazardous substance No

Section 311 hazardous chemical Yes

Clean Air Act (CAA) Not available

Clean Water Act (CWA) Hazardous substance

State regulations

This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

U.S. - California - 8 CCR Section 339 - Director's List of Hazardous Substances

Aluminum sulphate 10043-01-3 Present

U.S. - Louisiana - Reportable Quantity List for Pollutants

Aluminum sulphate 10043-01-3 5000 Lb final RQ; 2270 kg final RQ

U.S. - Massachusetts - Right To Know List

Aluminum sulphate 10043-01-3 Present

U.S. - New Jersey - Right to Know Hazardous Substance List

Aluminum sulphate 10043-01-3 sn 0068

U.S. - New York - Reporting of Releases Part 597 - List of Hazardous Substances

Aluminum sulphate 10043-01-3 5000 Lb RQ (air); 100 lb RQ (land/water)

U.S. - Pennsylvania - RTK (Right to Know) List

Aluminum sulphate 10043-01-3 Environmental hazard

Inventory name

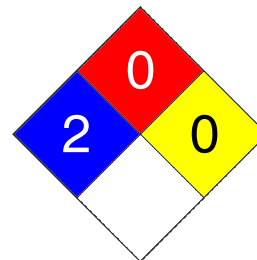
Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

16. Other Information

LEGEND HMIS/NFPA	
Severe	4
Serious	3
Moderate	2
Slight	1
Minimal	0

Health	/ 2
Flammability	0
Physical Hazard	0
Personal Protection	X

**Disclaimer**

Information contained herein was obtained from sources considered technically accurate and reliable. While every effort has been made to ensure full disclosure of product hazards, in some cases data is not available and is so stated. Since conditions of actual product use are beyond control of the supplier, it is assumed that users of this material have been fully trained according to the requirements of all applicable legislation and regulatory instruments. No warranty, expressed or implied, is made and supplier will not be liable for any losses, injuries or consequential damages which may result from the use of or reliance on any information contained in this document.

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Expiry date

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Prepared by

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Other information

For an updated MSDS, please contact the supplier/manufacturer listed on the first page of the document.

This MSDS conforms to the ANSI Z400.1/Z129.1-2010 Standard.

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.

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