

Aluminum Sulphate

SDS Preparation Date (mm/dd/yyyy): 12/14/2018

Page 1 of 10

SAFETY DATA SHEET

SECTION 1. IDENTIFICATION

Product identifier used on the label

: **Aluminum Sulphate**

Product Code(s) : AL300-48

Recommended use of the chemical and restrictions on use

: Waste water treatment
Restriction on use: None known

Chemical family : Solution of water and polynuclear inorganic salt.

Name, address, and telephone number of the supplier:

Anchem Sales

120 Stronach Crescent
London, ON, Canada
N5V 3A1

Supplier's Telephone # : 519-451-1614

24 Hr. Emergency Tel # : Not available.

Name, address, and telephone number of the manufacturer:

Refer to supplier

SECTION 2. HAZARDS IDENTIFICATION

Classification of the chemical

Colourless to slightly amber liquid. Mild odour.

This material is classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015).

Hazard classification:

Corrosive to metals - Category 1

Eye Damage/Irritation - Category 1

Label elements

Hazard pictogram(s)



Signal Word

DANGER!

Hazard statement(s)

H290-May be corrosive to metals.

H318 - Causes serious eye damage.

Aluminum Sulphate

SDS Preparation Date (mm/dd/yyyy): 12/14/2018

Page 2 of 10

SAFETY DATA SHEET

Precautionary statement(s)

P234 - Keep only in original container.
P280 -Wear eye protection/face protection.
P390Absorb spillage to prevent material damage.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310Immediately call a POISON CENTRE or doctor/physician.
P406Store in corrosive resistant container with a resistant inner liner.

Other hazards

Other hazards which do not result in classification: May cause skin and respiratory irritation. Ingestion may cause irritation of the mouth, throat and stomach.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixture

<u>Chemical name</u>	<u>Common name and synonyms</u>	<u>CAS #</u>	<u>Concentration (% by weight)</u>
Aluminum sulfate	Aluminum Sulphate; Sulfuric acid, sodium salt	10043-01-3	45.0 - 70.0

The exact concentrations of the above listed chemicals are being withheld as a trade secret.

SECTION 4. FIRST-AID MEASURES

Description of first aid measures

- Ingestion* : Do not induce vomiting. Never give anything by mouth if victim is unconscious. Seek immediate medical attention/advice.
- Inhalation* : If inhaled, move to fresh air. If breathing is difficult, give oxygen by qualified medical personnel only. If breathing has stopped, give artificial respiration. If irritation or symptoms develop, seek medical attention.
- Skin contact* : For skin contact, flush with water for at least 15 minutes, while removing contaminated clothing. Get medical attention if irritation develops and persists. Wash contaminated clothing before re-use.
- Eye contact* : Flush eyes with water for at least 20 minutes. Immediately call a POISON CENTRE or doctor/physician.

Most important symptoms and effects, both acute and delayed

- : Causes serious eye damage. Symptoms may include redness, pain, tearing and conjunctivitis.
Permanent eye damage including blindness could result.
- May cause respiratory irritation. Symptoms may include sore throat, running nose and shortness of breath.
- May cause skin irritation. Symptoms may include mild redness and swelling.
- Ingestion may cause irritation of the mouth, throat and stomach.

Indication of any immediate medical attention and special treatment needed

- : Immediate medical attention is required. Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media

- : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media

- : Do not use a solid water stream as it may scatter and spread fire.

Special hazards arising from the substance or mixture / Conditions of flammability

- : Burning may produce irritating, toxic and obnoxious fumes.

Aluminum Sulphate

SDS Preparation Date (mm/dd/yyyy): 12/14/2018

Page 3 of 10

SAFETY DATA SHEET

Flammability classification (OSHA 29 CFR 1910.106)

: Not flammable.

Hazardous combustion products

: Sulfur oxides; Hydrogen chloride gas ; aluminum oxide.

Special protective equipment and precautions for firefighters

Protective equipment for fire-fighters

: Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

Special fire-fighting procedures

: Move containers from fire area if safe to do so. Water spray may be useful in cooling equipment exposed to heat and flame.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

: Restrict access to area until completion of clean-up. Ensure clean-up is conducted by trained personnel only. All persons dealing with clean-up should wear the appropriate chemically protective equipment. Refer to point 8 on this Safety Data Sheet, EXPOSURE CONTROLS / PERSONAL PROTECTION, for additional information on acceptable personal protective equipment.

Environmental precautions : Ensure spilled product does not enter drains, sewers, waterways, or confined spaces. If necessary, dike well ahead of the spill to prevent runoff into drains, sewers, or any natural waterway or drinking supply.

Methods and material for containment and cleaning up

: Ventilate the contaminated area. Stop spill or leak at source if safely possible. Dike for water control. Contain and absorb spilled liquid with non-combustible, inert absorbent material (e.g. sand), then place absorbent material into a container for later disposal (see Section 13).

Special spill response procedures

: If a spill/release in excess of the EPA reportable quantity is made into the environment, immediately notify the national response center in the United States (phone: 1-800-424-8802).
US CERCLA Reportable quantity (RQ): None reportable.

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling

: Use only in well-ventilated areas. Wear suitable protective equipment during handling. Avoid breathing vapours or mists. Avoid contact with eyes, skin and clothing. Keep away from extreme heat and flame. Keep away from metals and incompatibles. Keep container tightly closed in a dry and well-ventilated place. Wash thoroughly after handling.

Conditions for safe storage : Store in a cool, dry, well ventilated area, away from heat and ignition sources. Store away from incompatible materials. Store in corrosion-resistant containers. Inspect periodically for damage or leaks. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel.

Incompatible materials : Alkalies; mineral acids ;Metals

Aluminum Sulphate

SDS Preparation Date (mm/dd/yyyy): 12/14/2018

Page 4 of 10

SAFETY DATA SHEET

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits:			
<u>Chemical Name</u>	<u>ACGIH TLV</u>		<u>OSHA PEL</u>
	<u>TWA</u>	<u>STEL</u>	<u>PEL</u> <u>STEL</u>
Aluminum sulfate	N/Av	N/Av	N/Av N/Av

Exposure controls

Ventilation and engineering measures

- : Use in a well-ventilated area. Local ventilation is recommended if the product is misted or used in a confined space, or if the TLV is exceeded.

Respiratory protection

- : Use a NIOSH approved respirator if the exposure limits are unknown. Advice should be sought from respiratory protection specialists. Respirators should be selected based on the form and concentration of contaminants in air, and in accordance with OSHA (29 CFR 1910.134) or CSA Z94.4-02.

Skin protection

- : Impervious gloves must be worn when using this product. The suitability for a specific workplace should be discussed with the producers of the protective gloves. Where extensive exposure to product is possible, use resistant coveralls, apron and boots to prevent contact.

Eye / face protection

- : Safety glasses with side-shields or chemical splash goggles, depending on workplace standards.

Other protective equipment

- : An eyewash station and safety shower should be made available in the immediate working area. Other equipment may be required depending on workplace standards.

General hygiene considerations

- : Avoid breathing vapour or mist. Do not ingest. Avoid contact with skin, eyes and clothing. Do not eat, drink, smoke or use cosmetics while working with this product. Upon completion of work, wash hands before eating, drinking, smoking or use of toilet facilities. Remove soiled clothing and wash it thoroughly before reuse.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Colourless to slightly amber liquid.

Odour : Odorless.

Odour threshold : Not available.

pH : 1.4-2.6

Melting/Freezing point : - 15.56°C

Initial boiling point and boiling range

: 102°C

Flash point : Not applicable.

Flashpoint (Method) : Not applicable.

Evaporation rate (BuAe = 1) : Not available.

Flammability (solid, gas) : Not applicable.

Lower flammable limit (% by vol.)

: Not applicable.

Upper flammable limit (% by vol.)

: Not applicable.

Oxidizing properties : None known.

Explosive properties : Not explosive

Vapour pressure : Not available.

Vapour density : Not available.

Aluminum Sulphate

SDS Preparation Date (mm/dd/yyyy): 12/14/2018

Page 5 of 10

SAFETY DATA SHEET

Relative density / Specific gravity

: 1.30-1.35

Solubility in water

: Complete

Other solubility(ies)

: Not available.

Partition coefficient: n-octanol/water or Coefficient of water/oil distribution

: Not available.

Auto-ignition temperature

: Not applicable.

Decomposition temperature

: Not available.

Viscosity

: Not available.

Volatiles (% by weight)

: Not available.

Volatile organic Compounds (VOC's)

: None.

Absolute pressure of container

: Not applicable.

Flame projection length

: Not applicable.

Other physical/chemical comments

: None known or reported by the manufacturer.

SECTION 10. STABILITY AND REACTIVITY

Reactivity

: Not normally reactive. May be corrosive to metals. Contact with metals may release small amounts of flammable hydrogen gas. Contact with water will generate considerable heat.

Chemical stability

: Stable under normal conditions.

Possibility of hazardous reactions

: No dangerous reaction known under conditions of normal use.

Conditions to avoid

: Avoid heat and open flame. Avoid contact with incompatible materials. Do not use in areas without adequate ventilation. Extremes of temperature and direct sunlight.

Incompatible materials

: Metals; mineral acids; Alkalies

Hazardous decomposition products

: None known. Refer to Section 5 for additional 'Hazardous combustion products'.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure:

Routes of entry inhalation

: YES

Routes of entry skin & eye

: YES

Routes of entry Ingestion

: YES

Routes of exposure skin absorption

: NO

Potential Health Effects:

Signs and symptoms of short-term (acute) exposure

Sign and symptoms Inhalation

: Inhalation of mist causes irritation of respiratory system.

Sign and symptoms ingestion

: May cause irritation to the mouth, throat and stomach. May cause nausea, stomach pain and vomiting.

Sign and symptoms skin

: May cause skin irritation. Symptoms include: Redness, swelling, itching and dryness.

Aluminum Sulphate

SDS Preparation Date (mm/dd/yyyy): 12/14/2018

Page 6 of 10

SAFETY DATA SHEET

Sign and symptoms eyes : Causes serious eye damage. Symptoms may include a burning sensation, pain, watering, and/or changes in vision (blurred vision). Permanent eye damage including blindness could result.

Potential Chronic Health Effects

: Prolonged or repeated contact may cause drying, cracking and defatting of the skin. Prolonged overexposure may cause liver and kidney effects.

Mutagenicity : Not expected to be mutagenic in humans.

Carcinogenicity : No components are listed as carcinogens by ACGIH, IARC, OSHA or NTP.

Reproductive effects & Teratogenicity

: Not expected to cause reproductive effects.

Sensitization to material : Not expected to be a skin or respiratory sensitizer.

Specific target organ effects : Eyes, skin, respiratory system, digestive system.

This material is not classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015).

Medical conditions aggravated by overexposure

: Pre-existing skin, eye and respiratory disorders.

Synergistic materials : No information available.

Toxicological data : There is no available data for the product itself, only for the ingredients. See below for individual ingredient acute toxicity data. The calculated ATE values for this mixture are:
ATE oral = 2757.15 mg/kg

<u>Chemical name</u>	<u>LC₅₀(4hr)</u>	<u>LD₅₀</u>	
	<u>inh, rat</u>	<u>(Oral, rat)</u>	<u>(Rabbit, dermal)</u>
Aluminum sulfate	5mg/L	1930mg/kg	>5000mg/kg

Other important toxicological hazards

: None known or reported by the manufacturer.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity : Not expected to be harmful to aquatic organisms. However, these ingredients are present at such low levels, they are not expected to affect environmental toxicity. The product should not be allowed to enter drains or water courses, or be deposited where it can affect ground or surface waters. See the following tables for the substance's ecotoxicity data.

Ecotoxicity data:

<u>Ingredients</u>	<u>CAS No</u>	<u>Toxicity to Fish</u>		
		<u>LC₅₀ / 96h</u>	<u>NOEC / 21 day</u>	<u>M Factor</u>
Aluminum sulfate	10043-01-3	33.9 mg/L (Fathead minnow)	N/Av	None.

<u>Ingredients</u>	<u>CAS No</u>	<u>Toxicity to Daphnia</u>		
		<u>EC₅₀ / 48h</u>	<u>NOEC / 21 day</u>	<u>M Factor</u>
Aluminum sulfate	10043-01-3	77-126mg/L	N/Av	None.

Aluminum Sulphate

SDS Preparation Date (mm/dd/yyyy): 12/14/2018

Page 7 of 10

SAFETY DATA SHEET

<u>Ingredients</u>	CAS No	Toxicity to Algae		
		EC50 / 96h or 72h	NOEC / 96h or 72h	M Factor
Aluminum sulfate	10043-01-3	N/Av	N/Av	None.

Persistence and degradability

: Biodegradation is not applicable to inorganic substances.

Bioaccumulation potential

: No information available.

<u>Components</u>	<u>Partition coefficient n-octanol/water (log Kow)</u>	<u>Bioconcentration factor (BCF)</u>
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Mobility in soil : No information available.

Other Adverse Environmental effects

: No information available.

SECTION 13. DISPOSAL CONSIDERATIONS

Handling for Disposal

: Handle waste according to recommendations in Section 7. Empty containers retain residue (liquid and/or vapour) and can be dangerous.

Methods of Disposal

: Dispose in accordance with all applicable federal, state, provincial and local regulations.

RCRA

: If this product, as supplied, becomes a waste in the United States, it may meet the criteria of a hazardous waste as defined under RCRA, Title 40 CFR 261. It is the responsibility of the waste generator to determine the proper waste identification and disposal method. For disposal of unused or waste material, check with local, state and federal environmental agencies.

Aluminum Sulphate

SDS Preparation Date (mm/dd/yyyy): 12/14/2018

Page 8 of 10

SAFETY DATA SHEET

SECTION 14. TRANSPORT INFORMATION

Regulatory Information	UN Number	UN proper shipping name	Transport hazard class(es)	Packing Group	Label
49CFR/DOT	UN3264	Corrosive, liquid, acidic, inorganic, n.o.s. (Contains: Aluminum chloride hydroxide sulfate)	8	III	
49CFR/DOT Additional information	May be shipped as Limited Quantity when transported in containers no larger than 5.0 Litres; in packages not exceeding 30 kg gross mass. Refer to 49 CFR Section 173.154.				
TDG	UN3264	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Aluminum chloride hydroxide sulfate)	8	III	
TDG Additional information	May be shipped as Limited Quantity when transported in containers no larger than 5.0 Litres; in packages not exceeding 30 kg gross mass. Under the TDGR, refer to Section 1.17 for additional exemption information, if shipping under this exemption.				
IMDG	UN3264	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Aluminum chloride hydroxide sulfate)	8	III	
IMDG Additional information	Consult the IMDG regulations for exceptions.				
ICAO/IATA	UN3264	Corrosive liquid, acidic, inorganic, n.o.s. (Aluminum chloride hydroxide sulfate)	8	III	
ICAO/IATA Additional information	Refer to ICAO/IATA Packing Instruction				

Special precautions for user : None known or reported by the manufacturer.

Environmental hazards : This substance does not meet the criteria for an environmentally hazardous substance according to the IMDG Code. See ECOLOGICAL INFORMATION, Section 12.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

: Not available.

SECTION 15 - REGULATORY INFORMATION

US Federal Information:

Components listed below are present on the following U.S. Federal chemical lists:

<u>Ingredients</u>	CAS #	TSCA Inventory	CERCLA Reportable Quantity(RQ) (40 CFR 117.302):	SARA TITLE III: Sec. 302, Extremely Hazardous Substance, 40 CFR 355:	SARA TITLE III: Sec. 313, 40 CFR 372, Specific Toxic Chemical	de minimus Concentration
Aluminum sulfate	10043-01-3	Yes	5000 lb/ 2270 kg	N/Av	Toxic Chemical No	N/Ap

SARA TITLE III: Sec. 311 and 312, SDS Requirements, 40 CFR 370 Hazard Classes: Corrosive to metals; Eye Damage .

Under SARA Sections 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are 500 pounds or the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.

Aluminum Sulphate

SDS Preparation Date (mm/dd/yyyy): 12/14/2018

Page 9 of 10

SAFETY DATA SHEET

US State Right to Know Laws:

The following chemicals are specifically listed by individual States:

<u>Ingredients</u>	CAS #	California Proposition 65		State "Right to Know" Lists					
		Listed	Type of Toxicity	CA	MA	MN	NJ	PA	RI
Aluminum sulfate	10043-01-3	No	N/Ap	Yes	Yes	No	Yes	Yes	No

Canadian Information:

WHMIS information: Refer to Section 2 for a WHMIS Classification for this product.

Canadian Environmental Protection Act (CEPA) information: All ingredients listed appear on the Domestic Substances List (DSL).

International Information:

Components listed below are present on the following International Inventory list:

<u>Ingredients</u>	CAS #	European EINECS	Australia AICS	Philippines PICCS	Japan ENCS	Korea KECI/KECL	China IECSC	NewZealand IOC
Aluminum sulfate	10043-01-3	233-135-0	Present	Present	(1)-25	KE-01042	Present	HSR003958

SECTION 16. OTHER INFORMATION

Legend

: ACGIH: American Conference of Governmental Industrial Hygienists
CA: California
CAS: Chemical Abstract Services
CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CFR: Code of Federal Regulations
CNS: Central Nervous System
DOT: Department of Transportation
EPA: Environmental Protection Agency
HMIS: Hazardous Materials Identification System
HSDB: Hazardous Substances Data Bank
IARC: International Agency for Research on Cancer
Inh: Inhalation
LC: Lethal Concentration
LD: Lethal Dose
MA: Massachusetts
MN: Minnesota
MSHA: Mine Safety and Health Administration
N/Ap: Not Applicable
N/Av: Not Available
NFPA: National Fire Protection Association
NIOSH: National Institute of Occupational Safety and Health
NJ: New Jersey
NTP: National Toxicology Program
OSHA: Occupational Safety and Health Administration
PA: Pennsylvania
PEL: Permissible exposure limit
RCRA: Resource Conservation and Recovery Act

Aluminum Sulphate

SDS Preparation Date (mm/dd/yyyy): 12/14/2018

Page 10 of 10

SAFETY DATA SHEET

RI: Rhode Island
RTECS: Registry of Toxic Effects of Chemical Substances
SARA: Superfund Amendments and Reauthorization Act
STEL: Short Term Exposure Limit
TDG: Canadian Transportation of Dangerous Goods Act & Regulations
TLV: Threshold Limit Values
TWA: Time Weighted Average
WHMIS: Workplace Hazardous Materials Identification System

References

- : 1. ACGIH, Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices for 2018.
- 2. International Agency for Research on Cancer Monographs, searched 2018.
- 3. Canadian Centre for Occupational Health and Safety, CCInfoWeb databases, 2018 (Chempendium, HSDB and RTECs).
- 4. Material Safety Data Sheets from manufacturer.
- 5. US EPA Title III List of Lists - March 2015 version.
- 6. California Proposition 65 List - November 23, 2018 version.
- 7. OECD - The Global Portal to Information on Chemical Substances - eChemPortal, 2018.

Preparation Date (mm/dd/yyyy)

: 12/14/2018

Other special considerations for handling

: Provide adequate information, instruction and training for operators.

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