THUNDER BAY CHEMICALS LTD

1100 Kam Road, Thunder Bay, Ontario, P7E 6T7
Phone (807) 622-3741 Fax (807) 622-7544

SAFETY DATA SHEET
Expires April 1, 2020

Aluminum Sulphate, Ground
TB004

SECTION 1 IDENTIFICATION

Chemical Name	Aluminum Sulphate, Ground
Synonyms	Alum, Cake Alum, Aluminum Trisulphate, Dry Alum
Trade Name	Aluminum Sulphate, Ground
Formula	$Al_2(SO_4)_3$
CAS Number	10043-01-3 ($Al_2(SO_4)_3$) /16828-12-9 ($Al_2(SO_4)_3 \cdot 14\text{-}16H_2O$
Recommended Use	Industrial water treatment chemical. Use with appropriate personal protective equipment.
Supplier Information	Thunder Bay Chemicals Ltd. 1100 Kam Road, Thunder Bay, ON (807) 622-3741
Emergency Phone No.	(204) 222-3276 – 24 Hours

SECTION 2 HAZARDS IDENTIFICATION

GHS Classification: Acute Toxicity (Oral) 4; Skin Corrosion/Irritation 2; Eye Damage/Irritation 2B; Specific Target Organ Toxicity (Inhalation)(Single Exposure) 3

Pictogram

Signal Word: Warning

Hazard Statements:
Harmful if swallowed
Causes skin irritation
Causes eye irritation
May cause respiratory Irritation

Precautionary Statements:
Wash hands thoroughly after handling.
Do not eat, drink, or smoke when using this product.
Wear protective gloves.
Wear eye protection.
Avoid breathing dust.
Use only outdoors or in a well-ventilated area.
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth.
IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs, get medical advice/attention. Take off contaminated clothing and wash before reuse.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing. If eye irritation persists, get medical advice/attention.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or a doctor/physician if you feel unwell.
Store in a well-ventilated place. Keep container tightly closed. Store locked up.
Dispose of contents in accordance with local regulations.

SECTION 3 COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient	CAS Number	% by WT	Classification
Aluminum sulphate	10043-01-3/16828-12-9	100%	Acute Toxicity (Oral) 4; Skin Corrosion/Irritation 2 Eye Damage/Irritation 2B; Specific Target Organ Toxicity (Inhalation)(Single Exposure) 3

SECTION 4 FIRST AID MEASURES

First Aid Measures

Ingestion	IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth. Do NOT induce vomiting. Do NOT give bicarbonate to neutralize.
Skin Contact	IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs, get medical advice/attention. Take off contaminated clothing and wash before reuse.
Eye Contact	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing. If eye irritation persists, get medical advice/attention.
Inhalation	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or a doctor/physician if you feel unwell.

Symptoms

Ingestion	In small quantity, may cause nausea, vomiting, stomach cramps, diarrhea. In large quantity, may cause ulcerations and necrosis of the mucous membranes in the throat and mouth and esophagi, liver and kidney damage, hemorrhagic gastroenteritis and intense thirst.
Skin Contact	Causes skin irritation, especially on moist skin.
Eye Contact	Causes eye irritation.
Inhalation	May cause respiratory irritation.
Medical conditions aggravated	Kidney disease.

SECTION 5 FIRE FIGHTING METHODS

Fire Extinguishing Media	**USE**: Dry chemical, CO_2, water spray, or regular foam.
(For surrounding fire)	**DO NOT USE**: Heavy water stream. Use of heavy stream of water may spread fire.
Special Hazards	Hazardous reactions will not occur under normal conditions.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal Precautions	Avoid all contact with skin, eyes, or clothing. Avoid breathing dust.
Protective Equipment	Use appropriate personal protective equipment (See Section 8).
Emergency Procedures	Evacuate unnecessary personnel.
Method for Containment and Clean-up	Vacuum and place in an airtight container, keeping airborne dust generation to a minimum. Recycle if possible. Avoid contaminating surface, waterways, or sewers leading to surface water. Do not flush with water. Will give a strong astringent taste to water supply. High concentration may increase lead content of water if lead supply pipes are used. Store in a dry weather-proof area. Store away from bases. Due to risk of corrosion, do not store this product in steel containers. Avoid generating or raising dust.

SECTION 7 HANDLING AND STORAGE

Handling	Avoid generating dust during handling. Avoid prolonged or repeated skin contact. Use good industrial hygiene and safety procedures. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.
Storage	Store in a dry weather-proof area. Store away from bases. Due to risk of corrosion, do not store this product in steel containers.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits	OSHA – PEL: 2 mg/m^3 (TWA) ACGIH – TLV: 2 mg/m^3 (TWA)
Engineering Controls	Provide general and/or local exhaust ventilation to keep concentrations below ACGIH TLV. Emergency eye wash stations and safety showers should be available in the immediate vicinity of any potential exposure.
Respiratory Protection	Mask or full-face respirator should be provided if excessive dust concentrations occur.
Skin Protection	Normal body-covering work clothing and gloves recommended.
Eye Protection	Tight fitting goggles should be worn when dust concentration exceeds recommended exposure limits.
Other information	Do not eat, drink or smoke when using this product.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance	White to off-white powder or granules	Flash Point	Not flammable
Odour	Odourless	Autoignition Temperature	Not combustible
pH (1% Solution)	3.7	Lower Flammable Limit	Not available
Boiling Point	Not available	Upper Flammable Limit	Not available
Melting Point	770°C (1418°F) (Anhydrous)	Explosive Properties	Not available
Vapour Pressure	Not available	Odour Threshold	Not available
Vapour Density	Not available	Oxidizing Properties	Not available
Relative Density	2.71 g/mL @ 25°C (77°F)	Water Solubility	310 g/L
Partition Coefficient	Not available		

SECTION 10 STABILITY AND REACTIVITY

Reactivity	Hazardous reactions will not occur under normal conditions.
Chemical Stability	Stable under normal conditions.
Hazardous Reactions	Hazardous polymerization will not occur.
Conditions to Avoid	Direct sunlight. Extremely high or low temperatures. Ignition sources. Incompatible materials. Moisture.
Incompatible Materials	Strong bases.
Hazardous Decomposition Products	Oxides of aluminum. Decomposes to sulphur oxides (SO_2 and SO_3) at high temperatures (above 770°C (1418°F)). The decomposition products are corrosive and hazardous to health. Hydrolysis of aluminum sulphate to sulphuric acid will occur under conditions of high humidity. In addition, high humidity will cause a decrease in pH of aqueous solutions (a 1% solution has a pH of 3.7).

SECTION 11 TOXICOLOGICAL INFORMATION

Acute Toxicity	Classified as Acute Toxicity (Oral) Category 4
LD_{50}	1930 mg/kg (Rat, Oral) 490 mg/kg (Guinea Pig, Oral) 980 mg/kg (Mouse, Oral)
Carcinogenicity	None of the ingredients present at concentrations equal to or greater than 0.1% is listed as a carcinogen or potential carcinogen by IARC, NTP, or OSHA.

SECTION 12 ECOLOGICAL INFORMATION

Toxicity	May be harmful to aquatic life.
Persistence and degradability	Not available
Bioaccumulative potential	Not available
Mobility in soil	Not available
Other adverse effects	Avoid release to the environment

LC_{50} – Pimephales promelas (Fathead minnow) – 33.9 mg/L – 96 hr
LC_{50} – Daphnia magna (Water flea) – 38.2 mg/L – 48 hr

SECTION 13 DISPOSAL CONSIDERATIONS

Waste Disposal Procedure: Wear appropriate personal protective equipment. Collect and reprocess where possible. Dispose of waste material in accordance with all local regulations.

SECTION 14 TRANSPORT INFORMATION

Transport Canada (TC)
Shipping Name Aluminum Sulphate, solid
Placards are not required for this product. It is not regulated for transport.

DOT (United States)
When shipped as a single bulk package of 5,000 lbs. or more, this material is regulated as a US DOT hazardous material as follows: Reportable Quantity, UN 3077, Environmentally Hazardous Substance, solid, n.o.s. (Aluminum Sulphate), Hazard Class 9, Packing Group III.

SECTION 15 REGULATORY INFORMATION

Section 313 Supplier Notification	This product contains no chemical concentration subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 (Title III of SARA) and of 40 CFR 372.
TSCA – DSL (USA & Canada)	This substance or all the ingredients of this product are on the Domestic Substances List, Canadian Environmental Protection Agency (Canada), as well as on the Chemical Substances Inventory (USA). The presence on these lists does not require any legal reporting.

SECTION 16 OTHER INFORMATION

ACGIH	American Conference of Governmental Industrial Hygienists
CAS#	Chemical Abstracts Service Registry Number
DOT	Department of Transportation (United States)
DSL	Domestic Substances List
GHS	Global Harmonized System
IARC	International Agency for Research on Cancer
NSF	National Sanitation Foundation (United States)
NTP	National Toxicology Program
OSHA	Occupational Safety and Health Administration (United States)
PEL	Permissible Exposure Limit
RQ	Reportable Quantity
TLV	Threshold Limit Value
TSCA	Toxic Substances Control Act (United States)
TWA	Time Weighted Average
WHMIS	Workplace Hazardous Material Information System

NSF Certifiée à NSF/ANSI 60

Thunder Bay Chemicals, Ltd. received NSF Certification in 1997. The maximum dosage in drinking water is 150 mg/L, according to NSF Standard 60.

Prepared by	Thunder Bay Chemicals, Ltd. - (807) 622-3741
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Emergency Phone Number	(204) 222-3276 - 24 hours