

Material Safety Data Sheet

Dry Alum

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Dry Alum

OTHER/GENERIC NAMES: Aluminum Sulfate

PRODUCT USE: Water treatment. Food additive. Various industrial uses.

MANUFACTURER:

FOR MORE INFORMATION CALL:

US ONLY

(Monday-Friday, 9:00am-4:30pm)

CANADA ONLY

(Monday-Friday, 9:00am-4:30pm)

IN CASE OF EMERGENCY CALL:

US ONLY

(24 Hours/Day, 7 Days/Week)

CANADA ONLY

(24 Hours/Day, 7 Days/Week)

800-424-9300

(CHEMTREC)

613-996-6666

(CANUTEC)

2. COMPOSITION/INFORMATION ON HAZARDOUS INGREDIENTS

<u>INGREDIENT NAME</u>	<u>CAS NUMBER</u>	<u>WEIGHT %</u>
Aluminum sulfate	10043-01-3 (anhydrous)	57-60

Trace impurities and additional material names not listed above may also appear in Section 15 towards the end of the MSDS. These materials may be listed for local "Right-To-Know" compliance and for other reasons.

OSHA Hazard Communication Standard: *This product is considered hazardous under the OSHA Hazard Communication Standard.*

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: White or creamy white granules or powder with no odor. Can irritate the skin and eyes. Not flammable, but may release toxic vapors if decomposed in a fire.

POTENTIAL HEALTH HAZARDS

SKIN: May cause skin irritation, especially under repeated or prolonged contact, or when moisture is present.

EYES: May irritate or burn the eyes. Similarly for the aqueous solution.

INHALATION: Dust or mist inhalation at levels above the TLV may cause irritation to the respiratory tract.

INGESTION: May irritate the gastrointestinal tract.

DELAYED EFFECTS: None known.

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Ingredients found on one of the three OSHA designated carcinogen lists are listed below.

<u>INGREDIENT NAME</u>	<u>NTP STATUS</u>	<u>IARC STATUS</u>	<u>OSHA LIST</u>
No ingredients listed in this section.			

4. FIRST AID MEASURES

SKIN: Flush with plenty of soap water, removing contaminated clothing. If irritation develops, get medical attention.

EYES: Immediately flush with water, continuing for at least 15 minutes. If irritation persists, get medical attention.

INHALATION: Promptly remove to fresh air.

INGESTION: If conscious, immediately give large quantity of water or milk. If not already vomiting, induce vomiting by touching finger to back of throat. Get medical assistance.

ADVICE TO PHYSICIAN: Treat symptomatically.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES

FLASH POINT:	Not flammable
FLASH POINT METHOD:	Not applicable
AUTOIGNITION TEMPERATURE:	Not applicable
UPPER FLAME LIMIT (volume % in air):	Not applicable
LOWER FLAME LIMIT (volume % in air):	Not applicable
FLAME PROPAGATION RATE (solids):	Not applicable
OSHA FLAMMABILITY CLASS:	Not applicable

EXTINGUISHING MEDIA:

Foam, dry chemical, carbon dioxide, water spray.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

None.

SPECIAL FIRE FIGHTING PRECAUTIONS/INSTRUCTIONS:

Wear self-contained breathing apparatus (SCBA) and full protective equipment.

6. ACCIDENTAL RELEASE MEASURES

IN CASE OF SPILL OR OTHER RELEASE: (See section 8 for recommended personal protective equipment.)

Shovel up dry chemical and place in empty container and cover. Spray residue with plenty of water. Neutralize any further residue with alkali such as soda ash, lime or limestone. Adequate ventilation is required if soda ash or limestone is used, because of the consequent release of carbon dioxide gas. Collect liquid and/or residue and dispose of in accordance with applicable regulations.

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Spills and releases may have to be reported to Federal and/or local authorities. See Section 15 regarding reporting requirements.

7. HANDLING AND STORAGE

NORMAL HANDLING: (See section 8 for recommended personal protective equipment.)

Keep container tightly closed when not in use. Avoid contact with skin, eyes and on clothing. Do not breathe product dusts or mists.

STORAGE RECOMMENDATIONS:

Keep storage container tightly closed. Store in cool, dry, well-ventilated area or cabinet. Isolate from incompatible substances.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS:

Use local exhaust to keep airborne concentrations below the permissible exposure limits.

PERSONAL PROTECTIVE EQUIPMENT

SKIN PROTECTION: Wear rubber gloves and apron, long sleeved shirts, trousers and boots. If prolonged or repeated contact is anticipated, all clothing should be impervious to liquid.

EYE PROTECTION: Wear chemical safety goggles. Do not wear contact lenses.

RESPIRATORY PROTECTION: A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 or applicable federal/provincial requirements must be followed whenever workplace conditions warrant respirator use. NIOSH's "Respirator Decision Logic" may be useful in determining the suitability of various types of respirators.

ADDITIONAL RECOMMENDATIONS: To identify additional Personal Protective Equipment (PPE) requirements, it is recommended that a hazard assessment in accordance with the OSHA PPE Standard (29CFR1910.132) be conducted before using this product. Eyewash and safety showers are recommended.

EXPOSURE GUIDELINES

<u>INGREDIENT NAME</u>	<u>ACGIH TLV</u>	<u>OSHA PEL</u>	<u>OTHER LIMIT</u>
Aluminum sulfate (as Aluminum)	2 mg/m ³	2 mg/m ³	None

OTHER EXPOSURE LIMITS FOR POTENTIAL DECOMPOSITION PRODUCTS:

None

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9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: White or creamy white granules or powder.
PHYSICAL STATE: Solid
MOLECULAR WEIGHT: ~594 for $\text{Al}_2(\text{SO}_4)_3 \cdot 14\text{H}_2\text{O}$

CHEMICAL FORMULA: $\text{Al}_2(\text{SO}_4)_3 \cdot 14\text{H}_2\text{O}$

ODOR: Odorless
SPECIFIC GRAVITY (water = 1.0): 1.61
SOLUBILITY IN WATER (weight %): 50% at 0°C
pH: ~3.5 (1% solution)
BOILING POINT: Not applicable
MELTING POINT: Not applicable
VAPOR PRESSURE: Negligible
VAPOR DENSITY (air = 1.0): Not applicable
EVAPORATION RATE: Not applicable COMPARED TO: Not applicable.
% VOLATILES: Negligible
FLASH POINT: Not flammable
(Flash point method and additional flammability data are found in Section 5.)

10. STABILITY AND REACTIVITY

NORMALLY STABLE (CONDITIONS TO AVOID):
Normally stable. Avoid temperatures above 760°C, as this will yield toxic and corrosive gases.

INCOMPATIBILITIES:
Alkalis and water reactive materials such as oleum: causes exothermic reactions.

HAZARDOUS DECOMPOSITION PRODUCTS:
At elevated temperatures, sulfur oxides may be formed. These are toxic and corrosive and are oxidizers. Sulfur trioxide is also a fire hazard. The loss of these gases leaves a caustic residue.

HAZARDOUS POLYMERIZATION:
Will not occur

11. TOXICOLOGICAL INFORMATION

IMMEDIATE (ACUTE) EFFECTS:
Aluminum sulfate:
LD₅₀ (oral, mouse): 6207 mg/kg
LD₅₀ (oral, rat): 1930 mg/kg

DELAYED (SUBCHRONIC AND CHRONIC) EFFECTS:
Data not available

OTHER DATA:
None

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12. ECOLOGICAL INFORMATION

Aluminum sulfate:
14 ppm/36 hr/ fundulus/fatal/fresh water.
240 ppm/48 hr/mosquito fish/TL_m/water type not specified.
TL_m Mosquito fish, 235 ppm, 96 hours
LC₅₀ Largemouth bass, 250 ppm, 96 hours

13. DISPOSAL CONSIDERATIONS

RCRA

Is the unused product a RCRA hazardous waste if discarded? No

If yes, the RCRA ID number is: Not applicable

OTHER DISPOSAL CONSIDERATIONS:

If permitted by regulations, material may be dissolved in water and neutralized with alkali. Neutralized waste may have to be disposed of by an approved contractor.

The information offered in section 13 is for the product as shipped. Use and/or alterations to the product such as mixing with other materials may significantly change the characteristics of the material and alter the RCRA classification and the proper disposal method.

14. TRANSPORT INFORMATION

US DOT HAZARD CLASS/PACKING GROUP: 9 (only if greater than 5000 lbs. in one package), PGIII
US DOT ID NUMBER: UN3077
PROPER SHIPPING NAME: Environmentally hazardous substances, solid, n.o.s. (contains aluminum sulfate)

TDG HAZARD CLASS/PACKING GROUP: 9 (only if intended for disposal and 100 mg/kg or more), PGIII
TDG ID NUMBER: UN3077
PROPER SHIPPING NAME: Environmentally hazardous substances, solid, n.o.s. (contains aluminum sulfate)

For additional information on shipping regulations affecting this material, contact the information number found in Section 1.

15. REGULATORY INFORMATION

TOXIC SUBSTANCES CONTROL ACT (TSCA)

TSCA INVENTORY STATUS: All ingredients listed on the TSCA Inventory

OTHER TSCA ISSUES: None

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SARA TITLE III/CERCLA

"Reportable Quantities" (RQs) and/or "Threshold Planning Quantities" (TPQs) exist for the following ingredients.

<u>INGREDIENT NAME</u>	<u>SARA/CERCLA RQ (lb)</u>	<u>SARA EHS TPQ (lb)</u>
Aluminum sulfate (anhydrous)	5000	None

Spills or releases resulting in the loss of any ingredient at or above its RQ requires immediate notification to the National Response Center [(800) 424-8802] and to your Local Emergency Planning Committee.

SECTION 311 HAZARD CLASS: Immediate

SARA 313 TOXIC CHEMICALS:

The following ingredients are SARA 313 "Toxic Chemicals" and may be subject to annual reporting requirements. CAS numbers and weight percents are found in Section 2.

<u>INGREDIENT NAME</u>	<u>COMMENT</u>
No ingredients listed in this section.	

STATE RIGHT-TO-KNOW

In addition to the ingredients found in Section 2, the following are listed for state right-to-know purposes.

<u>INGREDIENT NAME</u>	<u>WEIGHT %</u>	<u>COMMENT</u>
No ingredients listed in this section.		

ADDITIONAL REGULATORY INFORMATION:

None listed

WHMIS CLASSIFICATION (CANADA):

Class D2B.

Classified in accordance with WHMIS Controlled Product regulations.



FOREIGN CHEMICAL CONTROL INVENTORY STATUS:

All ingredients listed on European (EINECS), Canadian (DSL), Australian (AICS), Japan (MITI), Korean (ENCS), Philippines (PICCS) and China (IECSC).

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16. OTHER INFORMATION

CURRENT ISSUE DATE: January 27, 2006

PREVIOUS ISSUE DATE: April 11, 2005

CHANGES TO MSDS FROM PREVIOUS ISSUE DATE ARE DUE TO THE FOLLOWING:

Changes to section 1, 2, 5, 7, 8, 14, 15, and 16.

OTHER INFORMATION: HMIS: 2-0-1

NFPA: 2-0-1

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