



Material Safety Data Sheet

1. IDENTIFICATION

PRODUCT NAME: H2-Alum Ground
CHEMICAL NAME/SYNONYMS: Dry Aluminum Sulfate
CHEMICAL FAMILY:
CHEMICAL FORMULA:
For emergencies call Chemtrec at 1-800-424-9300

2. HAZARD(S) 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.

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

INGREDIENT NAME	NTP STATUS	IARC STATUS	OSHA LIST
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No ingredients listed in this section.

3. COMPOSITION / INFORMATION ON INGREDIENTS

INGREDIENT NAME	CAS NUMBER
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Aluminum sulfate (anhydrous)	10043-01-3
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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.

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.

H2-Alum Ground

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: Product is not flammable. Use any extinguishing agent suitable for surrounding fire.

UNUSUAL FIRE AND EXPLOSION HAZARDS: NONE.

SPECIAL FIRE FIGHTING PRECAUTIONS/INSTRUCTIONS: Use self-contained breathing apparatus.

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.

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.) Avoid contact with skin, eyes and clothing. Do not breathe product dusts or mists.

STORAGE RECOMMENDATIONS: Store in a cool, dry area.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS: Use local exhaust if dusty or misty conditions prevail.

PERSONAL PROTECTIVE EQUIPMENT

SKIN PROTECTION: Wear gloves and appropriate industrial work clothing including long sleeved shirts and trousers for routine product handling. Full, impervious clothing is recommended if handling solutions and there is repeated or prolonged contact.

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

RESPIRATORY PROTECTION: A NIOSH approved dust or mist respirator should be worn in areas where product dusts or mists are present.

ADDITIONAL RECOMMENDATIONS: The presence of an eyewash and safety shower is recommended.

EXPOSURE GUIDELINES

INGREDIENT NAME

ACGIH TLV

OSHA PEL

OTHER LIMIT

Aluminum sulfate (as Aluminum)

2 mg/m

2 mg/mom

None

1 = Limit established by General Chemical Corporation.

2 = Workplace Environmental Exposure Level (AIHA).

3 = Biological Exposure Index (ACGIH).

OTHER EXPOSURE LIMITS FOR POTENTIAL DECOMPOSITION PRODUCTS: None

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: White or creamy white granules or powder.

PHYSICAL STATE: Solid

MSDS

H2-Alum Ground

MOLECULAR WEIGHT: approx 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: 50% at 0 C

PH: approx 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: Not applicable

FLASH POINT: Not flammable

(Flash point method and additional flammability data are found in Section 5.)

10. STABILITY AND REACTIVITY

HAZARDOUS POLYMERIZATION: Hazardous Polymerization will not occur

CHEMICAL STABILITY: Normally stable.

CONDITIONS TO AVOID: If evaporated to dryness, residue should not be exposed to elevated 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

12. ECOLOGICAL INFORMATION

ALUMINUM SULFATE:

14 ppm/36 hr/ fundulus/fatal/fresh water.

240 ppm/48 hr/mosquito fish/TLm/water type not specified.

TL, 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

This material is regulated as a DOT Hazardous Material (only if greater than 8700 lbs. in one package).

US DOT INFORMATION:

UN/NA #	Shipping Name Hazard	Class	Packing Group	ERG	RQ
UN3077,	Environmentally hazardous, substances, solid, n.o.s. (contains aluminum sulfate)	9,	,	171	5000lbs

15. REGULATORY INFORMATION**TOXIC SUBSTANCES CONTROL ACT (TSCA)**

TSCA INVENTORY STATUS: All ingredients listed on the TSCA Inventory

OTHER TSCA ISSUES: None

SARA TITLE III/CERCLA

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

INGREDIENT NAME	SARA/CERCLA RQ (lb)	SARA EHS TPQ (lb)
Aluminum sulfate (anhydrous)	5000 (*as is 8700 lbs.)	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.

INGREDIENT NAME	COMMENT
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.

INGREDIENT NAME	WEIGHT %	COMMENT
No ingredients listed in this section.		

ADDITIONAL REGULATORY INFORMATION:

None listed

WHMIS CLASSIFICATION (CANADA):

Class D213.

Classified in accordance with WHMIS Controlled Product regulations.

FOREIGN CHEMICAL CONTROL INVENTORY STATUS:

All ingredients listed on Canadian DSL

OTHER INFORMATION: Not for Food or Drug use, unless specifically marked and labeled as such.

16. OTHER INFORMATION

Do not use ingredient information and/ or ingredient percentages in this MSDS as a product specification. For product specification information refer to a product specification sheet and/or a certificate of analysis. These can be obtained from H2O Technical Services.

DISCLAIMER:

We believe that the information in this MSDS is accurate. The suggested procedures are based on experience as of the date of publication. They are not necessarily either all-inclusive or fully adequate in every circumstance. Also, these suggestions should not be confused with or followed in violation of applicable laws, regulations, rules or insurance requirements.

NO WARRANTY IS MADE, EXPRESSED OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE.