



THE POWER OF THREE³
PHARMCO-AAPER
 AND COMMERCIAL ALCOHOLS

Product Information (203) 740-3471
Emergency Assistance CHEMTREC 1-800-424-9300

Manufacturer: PHARMCO-AAPER.
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Emergency Contact:

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 PRODUCT IDENTIFICATION

 PRODUCT NAME: ALUMINUM SULFATE
 Material Safety Data Sheet

1. PRODUCT IDENTIFICATION

PRODUCT NAME: Dry Alum
 OTHER/GENERIC NAMES: Aluminum Sulfate
 PRODUCT USE: Water treatment Food additive Various industrial uses

2. COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENT NAME CAS NUMBER WEIGHT
 Aluminum sulfate 10043-01-3 100
 (anhydrous)
 Trace impurities and additional material names not listed above may also appear in Section 15 towards the end of 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
 Ingredients found on one of the three OSHA designated carcinogen lists are listed below.
 INGREDIENT NAME NTP STATUS IARC STATUS OSHA LIST
 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:

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 prevails

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 mg3 2 mg/m3 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

MOLECULAR WEIGHT Approx -594 for AI2(SO4)3-14H2O

CHEMICAL FORMULA AI2(SO4)3 14H2o

ODOR: Odorless

SPECIFIC GRAVITY (water = 1.0): 1.61

SOLUBILITY IN WATER (weight %): 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

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

12. ECOLOGICAL INFORMATION

Aluminum sulfate:
14 ppm/36 hr/ fundulus/fatal/fresh water
240 ppm/48 hr/mosquito fish/TL,/water type not specified
TLm 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: 9 (only if greater than 8700 lbs. in one package)
US DOT 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
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 None
(*as is 8700lbs.)

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 requirement, 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 round 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 D2B.

Classified in accordance with WHMIS Controlled Product regulations.

FOREIGN CHEMICAL CONTROL INVENTORY STATUS:

All ingredients listed on Canadian DSL

16. OTHER INFORMATION

OTHER INFORMATION: None

The information contained herein is based on data considered to be accurate. However, no warranty is expressed regarding the accuracy of these data or the results to be obtained from the use thereof. It is the user's obligation to determine the conditions of safe use of the product.