

# Material Safety Data Sheet



## Alum

### 1. PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** Alum

**OTHER/GENERIC NAMES:** Aluminum Sulfate

**PRODUCT USE:** Water treatment. Various industrial uses.

**MANUFACTURER:** General Chemical Corporation  
90 East Halsey Road  
Parsippany, NJ 07054

**FOR MORE INFORMATION CALL:** 973-515-1840  
(Monday-Friday, 9:00am-4:30pm)

**IN CASE OF EMERGENCY CALL:** 800-631-8050  
(24 Hours/Day, 7 Days/Week)

### 2. COMPOSITION/INFORMATION ON INGREDIENTS

<u>INGREDIENT NAME</u>	<u>CAS NUMBER</u>	<u>WEIGHT %</u>
Aluminum sulfate	10043-01-3 (anhydrous)	100

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.

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.			

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#### **4. FIRST AID MEASURES**

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**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.

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#### **5. FIRE FIGHTING MEASURES**

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##### FLAMMABLE PROPERTIES

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

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#### **6. ACCIDENTAL RELEASE MEASURES**

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**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.**

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#### **7. HANDLING AND STORAGE**

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

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

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**STORAGE RECOMMENDATIONS:**

Store in a cool, dry area.

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## **8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

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**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**

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

<sup>1</sup> = Limit established by General Chemical Corporation.

<sup>2</sup> = Workplace Environmental Exposure Level (AIHA).

<sup>3</sup> = Biological Exposure Index (ACGIH).

**OTHER EXPOSURE LIMITS FOR POTENTIAL DECOMPOSITION PRODUCTS:**

None

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## **9. PHYSICAL AND CHEMICAL PROPERTIES**

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- APPEARANCE:** White or creamy white granules or powder.
- PHYSICAL STATE:** Solid
- MOLECULAR WEIGHT:** ~594 for Al<sub>2</sub>(SO<sub>4</sub>)<sub>3</sub>·14H<sub>2</sub>O
- CHEMICAL FORMULA:** Al<sub>2</sub>(SO<sub>4</sub>)<sub>3</sub>·14H<sub>2</sub>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

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<b>VAPOR PRESSURE:</b>	Negligible	
<b>VAPOR DENSITY (air = 1.0):</b>	Not applicable	
<b>EVAPORATION RATE:</b>	Not applicable	<b>COMPARED TO:</b> Not applicable.
<b>% VOLATILES:</b>	Not applicable	
<b>FLASH POINT:</b>	Not flammable	

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

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### 10. STABILITY AND REACTIVITY

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**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

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### 11. TOXICOLOGICAL INFORMATION

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**IMMEDIATE (ACUTE) EFFECTS:**

Aluminum sulfate:  
LD<sub>50</sub> (oral, mouse): 6207 mg/kg  
LD<sub>50</sub> (oral, rat): 1930 mg/kg

**DELAYED (SUBCHRONIC AND CHRONIC) EFFECTS:**

Data not available

**OTHER DATA:**

None

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### 12. ECOLOGICAL INFORMATION

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Aluminum sulfate:  
14 ppm/36 hr/ fundulus/fatal/fresh water.  
240 ppm/48 hr/mosquito fish/TL<sub>m</sub>/water type not specified.  
TL<sub>m</sub> Mosquito fish, 235 ppm, 96 hours  
LC<sub>50</sub> Largemouth bass, 250 ppm, 96 hours

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### 13. DISPOSAL CONSIDERATIONS

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#### 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.

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### 14. TRANSPORT INFORMATION

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**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.

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### 15. REGULATORY INFORMATION

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#### 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.

<u>INGREDIENT NAME</u>	<u>SARA/CERCLA RQ (lb)</u>	<u>SARA EHS TPQ (lb)</u>
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:**

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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**

No ingredients listed in this section.

**COMMENT**

#### **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**

No ingredients listed in this section.

**WEIGHT %**

**COMMENT**

#### **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.

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### **16. OTHER INFORMATION**

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**CURRENT ISSUE DATE:** June, 2001

**PREVIOUS ISSUE DATE:** December, 1993

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

Updated to ANSI format.

**OTHER INFORMATION:** None