MATERIAL SAFETY DATA SHEET

Current Issue Date: April 11, 2013
Revision Number: 0

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Dry Alum
Other/Generic Names: Aluminum Sulfate
Manufacturer: General Chemical, LLC
90 East Halsey Road
Parsippany, NJ 07054

General Chemical Performance Products Ltd.
90 East Halsey Road
Parsippany, NJ 07054
For More Information: Customer Service USONLY: 800 631 8050
(Monday – Friday 9:00AM – 4:30PM)

Customer Service CANADA ONLY: 866 543 3896
(Monday – Friday 9:00AM – 4:30PM)
Emergency Telephone
USONLY CALL CHEMTREC 800 424 9300 (24 Hours/Day, 7 Days/Week)
Number: CANADA ONLY CALL CANUTEC 613 996 6666 (24 Hours/Day, 7 Days/Week)

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: White or creamy white granules or powder with a negligible odor. Can irritate the skin and eyes. May be harmful if swallowed. Not flammable, but may release toxic vapors if decomposed in a fire.

OSHA Status: This material is considered hazardous by the CGHA Hazard Communication Standard (29 CFR 1910.1200)

Potential Health Affects
Skin: May cause skin irritation, especially under repeated or prolonged contact, or when moisture is present.
Eyes: May irritate or burn the eyes.
Inhalation: Product mists or dust may cause irritation to the respiratory tract if inhaled above the TLV levels.
Ingestion: May irritate the gastrointestinal tract.
Delayed Effects: None known.

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS No</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum sulfate</td>
<td>10043-01-3</td>
<td>57.6 (anhydrous)</td>
</tr>
</tbody>
</table>

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Dry Alum

4. FIRST AID MEASURES

Eye Contact  Immediately flush eyes with water for at least 15 minutes. Get medical attention if irritation persists.
Skin Contact  Flush with plenty of water, removing contaminated clothing. If irritation develops, get medical attention.
Inhalation   Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get prompt medical attention.
Ingestion    Do not induce vomiting. Immediately give large quantities of water. Get medical attention immediately.

Notes 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
SUITABLE EXTINGUISHING MEDIA:  Water spray, foam, carbon dioxide or dry chemical
UNSUITABLE EXTINGUISHING MEDIA:  No information available

Explosion Limits
Hazardous Combustion Products  No information available
Impact sensitivity  No information available
Sensitivity to static discharge  No information available
Specific Hazards Arising from the Chemical  Keep product and empty container away from heat and sources of ignition.

Protective Equipment and Precautions for Firefighters
Wear self-contained breathing apparatus (SCBA) and full protective equipment. Use water spray to keep containers cool.

6. ACCIDENTAL RELEASE MEASURES

IN CASE OF SPILL OR OTHER RELEASE  Shovel material and place in clean, dry container and cover. Collect liquid and/or residue and dispose of in accordance with applicable regulations.

7. HANDLING AND STORAGE

Handling  Avoid contact with skin, eyes, and clothing. Avoid breathing vapors or mists. Remove contaminated clothing and wash thoroughly after handling.
Storage  Keep storage container tightly closed. Store in a cool, dry, well-ventilated area or cabinet. Isolate from incompatible substances.

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8. EXPOSURE CONTROLS/ PERSONAL PROTECTION

<table>
<thead>
<tr>
<th>Component</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>Ontario TWA/EV</th>
<th>Mexico OEL (TWA)</th>
<th>NIOSH IDLH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum sulfate</td>
<td>2 mg/m³</td>
<td>2 mg/m³</td>
<td>TWA: 2 mg/m³</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Engineering Measures**

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

**Personal Protective Equipment**

- **Eye/ Face Protection**: Wear chemical safety goggles. Do not wear contact lenses.
- **Skin Protection**: Wear appropriate personal protective clothing to prevent skin contact.
- **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.

**General Hygiene Considerations**

To identify additional Personal Protective Equipment (PPE) requirements, it is recommended that a hazard assessment in accordance with the OSHA PPE Standard (29CFR 1910.132) be conducted before using this product. Eyewash and safety showers are recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>White or creamy white granules or powder</td>
</tr>
<tr>
<td>Color</td>
<td>White or creamy white</td>
</tr>
<tr>
<td>Chemical Formula</td>
<td>Al₂(SO₄)₃•14H₂O</td>
</tr>
<tr>
<td>Odor</td>
<td>None</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>No information available</td>
</tr>
<tr>
<td>Physical State</td>
<td>Solid</td>
</tr>
<tr>
<td>pH</td>
<td>3.5 (aqueous solution)</td>
</tr>
<tr>
<td>Flash Point</td>
<td>Not flammable</td>
</tr>
<tr>
<td>Autoignition Temperature</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Boiling Point/ Range</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Melting Point/ Range</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flammability Limits in Air</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Explosive Properties</td>
<td>No information available</td>
</tr>
<tr>
<td>Oxidizing Properties</td>
<td>No information available</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>Not determined</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>1.61</td>
</tr>
<tr>
<td>Partition Coefficient (n-octano/water)</td>
<td>No information available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>No information available</td>
</tr>
<tr>
<td>Molecular Weight</td>
<td>594</td>
</tr>
<tr>
<td>Water Solubility</td>
<td>50% at 0°C</td>
</tr>
<tr>
<td>VOC Content (%)</td>
<td>0</td>
</tr>
</tbody>
</table>
Dry Alum

10. STABILITY AND REACTIVITY

Chemical Stability
Normally stable.

Condition to Avoid
Avoid temperatures above 760°C, as this will yield toxic and corrosive gases.

Incompatible Products
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.

Possibility of Hazardous Reactions
Will not occur.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

<table>
<thead>
<tr>
<th>Component Information</th>
<th>LD50 Oral</th>
<th>LD50 Dermal</th>
<th>LC50 Inhalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum sulfate</td>
<td>1930 mg/kg (rat)</td>
<td>6207 mg/kg (mouse)</td>
<td></td>
</tr>
</tbody>
</table>

Irritation
No information available

Corrosivity
No information available

Sensitization
No information available

Chronic Toxicity

Carcinogenicity
There are no known carcinogenic chemicals in this product.

Mutagenic Effects
No information available

Reproductive Effects
No information available

Developmental Effects
No information available

Teratogenicity
No information available

Target Organ Effects
No information available

Other Adverse Effects
No information available

Endocrine Disruptor Information
No information available

12. ECOLOGICAL INFORMATION

Ecotoxicity
Contains no substances known to be hazardous to the environment or not degradable in waste water treatment plants.

<table>
<thead>
<tr>
<th>Component</th>
<th>Freshwater Algae</th>
<th>Freshwater Fish</th>
<th>Microtex</th>
<th>Water Flea</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum sulfate</td>
<td>LC50 = 100 mg/L Carassius auratus 96 h</td>
<td>LC50 = 37 mg/L Gambusia affinis 96 h</td>
<td></td>
<td>EC50 = 136 mg/L 15 min</td>
</tr>
</tbody>
</table>

Persistence and Degradability
No information available

Bioaccumulation
No information available

Mobility in Environmental Media
No information available

Other adverse affects
Aluminum sulfate component:
14 ppm/36 hr/fundulus/fatal/fresh water; 240 ppm/48 hr/mosquito fish/Tilapia water type not specified; Tilapia Mosquito fish, 235 ppm, 96 hours;
LC50 Largemouth bass, 250 ppm, 96 hours

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods
Dispose of waste in accordance with all federal, state, and local regulations.

Contaminated Packaging
Empty containers should be taken for local recycling, recovery or waste disposal.

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14. TRANSPORT INFORMATION

**DOT**
- Proper Shipping Name: Environmentally hazardous substances, solid, n.o.s. (contains aluminum sulfate)
- Hazard Class: 9
- UN-No: UN3077
- Packing Group: PGIII

**TDG**
- Hazard Class: 9
- UN-No: UN3077
- Packing Group: PGIII

15. REGULATORY INFORMATION

**International Inventories**
- TSCA: Yes
- DSL: Yes
- ELINCS: No
- EINECS: Yes
- ENCS: Yes
- CHINA: Yes
- KEOIL: Yes
- PICS: Yes
- AICS: Yes

**U.S. Federal Regulations**

**SARA 313**
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains the following chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372: None

**SARA 311/312 Hazardous Categorization**
- Chronic Health Hazard: No
- Acute Health Hazard: Yes
- Fire Hazard: No
- Sudden Release of Pressure Hazard: No
- Reactive Hazard: No

**Clean Water Act**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum sulfate</td>
<td>5000 lbs (anhydrous)</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>36684 lbs (dry)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**CERCLA**

<table>
<thead>
<tr>
<th>Component</th>
<th>CERCLA RQ (lb)</th>
<th>SARA TRQ (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum sulfate</td>
<td>5000 lbs (anhydrous)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>36684 lbs (dry)</td>
<td></td>
</tr>
</tbody>
</table>

**U.S. State Regulations**

California Proposition 65
This product does not contain any Proposition 65 chemicals.

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## Dry Alum

### State Right-to-Know

<table>
<thead>
<tr>
<th>Component</th>
<th>Massachusetts</th>
<th>New Jersey</th>
<th>Pennsylvania</th>
<th>Illinois</th>
<th>Rhode Island</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum sulfate</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

### Other International Regulations

- **Mexico**: No Information Available
- **Canada**: This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

### WHMIS Hazard Class

- D2B Toxic materials

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### 16. OTHER INFORMATION

- **Current Issue Date**: April 11, 2013
- **Previous Issue Date**: November 30, 2011
- **Revision Summary**: Updated date

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End of MSDS

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