

# SAFETY DATA SHEET

Revision date 2016-09-29

Revision number 1.01

## 1. IDENTIFICATION

### Product identifier

**Product name** Aluminum Sulfate, Anhydrous

### Other means of identification

**Product code** 3204F

**Synonyms** Alum; Cake Alum; Aluminum Trisulfate; Dialuminum Sulfate

### Recommended use of the chemical and restrictions on use

**Recommended use [RU]** No information available

**Uses advised against** No information available

### Details of the supplier of the safety data sheet

**Supplier** GEO Specialty Chemicals, Inc.  
9213 Arch Street Pike  
Little Rock, AR 72206  
+1-800-453-2586  
Hours: Monday-Friday 9:00-5:00 CST (Central Standard Time)

**Contact Point** safety-data-sheet-fp@geosc.com

### Emergency telephone number

**24 Hour Emergency Phone Number** CHEMTREC: (800) 424-9300  
Outside USA - +1 (703) 527-3887 collect calls accepted

## 2. HAZARDS IDENTIFICATION

### Classification

#### **OSHA Regulatory Status**

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

<b>Acute toxicity - Oral</b>	Category 4
<b>Skin corrosion/irritation</b>	Category 2
<b>Serious eye damage/eye irritation</b>	Category 1

### GHS Label elements, including precautionary statements

#### **EMERGENCY OVERVIEW**

<b>Physical state</b> solid	<b>Color</b> white	<b>Appearance</b> powder	<b>Odor</b> odorless
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**DANGER****Hazard statements**

Harmful if swallowed  
Causes skin irritation  
Causes serious eye damage

**Precautionary Statements - Prevention**

Wash face, hands and any exposed skin thoroughly after handling  
Do not eat, drink or smoke when using this product  
Wear protective gloves/protective clothing/eye protection/face protection

**Precautionary Statements - Response**

Immediately call a POISON CENTER or doctor/physician  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash before reuse.  
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth.

**Precautionary Statements - Disposal**

Dispose of contents/container to an approved waste disposal plant.

**Other information**

- Harmful to aquatic life with long lasting effects

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Component	CAS-No	weight-%	TRADE SECRET
Aluminum sulfate	10043-01-3	99.5	--

If CAS number is "proprietary", the specific chemical identity and percentage of composition has been withheld as a trade secret

\*The exact percentage (concentration) of composition has been withheld as a trade secret

**4. FIRST AID MEASURES****First Aid Measures****Eye contact**

Remove contact lenses, if worn. Immediately flush with plenty of water for at least 15 minutes, holding eyelids apart to ensure flushing of the entire surface. Washing within one minute is essential to achieve maximum effectiveness. Seek medical advice immediately.

**Skin contact**

Remove contaminated clothing and launder before reuse. In case of contact, immediately flush skin with plenty of soap and water for at least 15 minutes. Get medical attention.

**Ingestion**

Rinse mouth thoroughly with water. Do NOT induce vomiting. If vomiting should occur spontaneously, keep airway clear. Never give anything by mouth to an unconscious person. Seek medical advice immediately.

**Inhalation**

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician immediately.

**Most important symptoms and effects, both acute and delayed****Acute effects**

Risk of serious damage to eyes. Irritating to skin.

**Chronic effects**

May aggravate existing skin, eye, and lung conditions. Persons with kidney disorders have an increased risk from exposure based on general information found on aluminum salts.

**Aggravated Medical Conditions**

Breathing of dust or sprays (mists) of solutions may aggravate acute or chronic asthma and other chronic pulmonary disease. Skin irritation may be aggravated in persons with existing skin lesions.

**Indication of any immediate medical attention and special treatment needed****Note to physicians**

Aluminum soluble salts may cause gastroenteritis if ingested. Treatment includes the use of demulcents. Note: Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

## 5. FIRE-FIGHTING MEASURES

**Extinguishing media****Suitable extinguishing media**

Water fog, carbon dioxide, foam, dry chemical.

**Extinguishing media which must not be used for safety reasons**

No information available.

**Special hazards arising from the substance or mixture****Special Hazard**

Use water spray to cool fire exposed surfaces. Under fire conditions (or at temperatures greater than 650 °C or 1202 °F), product decomposes to give off sulfur trioxide, an oxidizing agent which will support combustion. Sulfur trioxide will react with water to form sulfuric acid.

**Advice for firefighters****Firefighting measures**

Cool exposed containers with water spray after extinguishing fire.

**Special protective equipment for firefighters**

Full protective clothing and approved self-contained breathing apparatus required for firefighting personnel.

**Explosion data****Sensitivity to Mechanical Impact**

None.

**Sensitivity to Static Discharge**

None.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment and emergency procedures****Personal precautions**

Wear suitable protective clothing and gloves.

**Environmental precautions****Environmental precautions**

Do not flush into surface water or sanitary sewer system.

**Methods and material for containment and cleaning up****Methods for containment**

Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up**

Clean up immediately by sweeping or shoveling material into a properly labeled container for disposal. Clean up large spills with vacuum truck. Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard. Residual spillage that cannot be removed by shovelling should be cleaned up from hard surfaces as appropriate. Ensure adequate decontamination of tools and equipment following cleanup.

## 7. HANDLING AND STORAGE

**Precautions for safe handling****Advice on safe handling**

Keep container closed when not in use

Avoid contact with eyes, skin and clothing

Personal protective equipment comprising: suitable protective gloves, safety goggles and protective clothing.

Avoid breathing dust; if exposed to high dust concentration, leave area immediately.

Use only in well-ventilated areas

Use respiratory protection where dust may be generated.

For industrial use only

**Conditions for safe storage, including any incompatibilities****Technical measures and storage conditions**

Keep in tightly closed container.

Store in a cool, dry place.

**Incompatible products**

Reacts with strong alkali to form aluminum hydroxide. On contact with moisture, an acidic solution forms. Weakly corrosive to carbon steel.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Control parameters****Exposure Guidelines**

This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies

**Appropriate engineering controls****Engineering controls**

Local exhaust ventilation as necessary to maintain exposures to within applicable limits. Please refer to the ACGIH document, "Industrial Ventilation, A Manual of Recommended Practices", most recent edition, for details. If there are no applicable or established exposure limit requirements or guidelines, general ventilation should be sufficient.

**Individual protection measures, such as personal protective equipment****Eye/face Protection**

Wear chemical splash goggles and face shield (when eye and face contact is possible due to splashing or spraying of material).

**Hand Protection**

Appropriate chemical resistant gloves should be worn.

**Skin and body protection**

Standard work clothing and work shoes.

**Respiratory protection**

If exposures exceed the PEL or TLV, use NIOSH/MSHA approved respirator in accordance with OSHA Respiratory Protection Requirements under 29 CFR 1910.134. If there are no applicable or established exposure limit requirements or guidelines, general ventilation should be sufficient.

**Other personal protection data**

Eyewash fountains and safety showers must be easily accessible.

**Hygiene measures**

Do not eat, drink or smoke when using this product.

**9. PHYSICAL AND CHEMICAL PROPERTIES****Information on basic physical and chemical properties**

<b>Physical state</b>	solid
<b>Color</b>	white
<b>Appearance</b>	powder
<b>Odor</b>	odorless
<b>Odor threshold</b>	No information available

<b><u>Property</u></b>	<b><u>Values</u></b>	<b><u>Remarks / Method</u></b>
<b>pH</b>	3.5	solution (1 %)
<b>Melting / freezing point</b>	~ 650 °C / ~ 1202 °F	Decomposes before melting
<b>Boiling point / boiling range</b>	No information available	No information available
<b>Flash point</b>	No information available	No information available
<b>Evaporation rate</b>	No information available	No information available
<b>Flammability (solid, gas)</b>	Not applicable	No information available
<b>Flammability Limit in Air</b>		
<b>Upper flammability limit</b>	No information available	No information available
<b>Lower flammability limit</b>	No information available	No information available
<b>Vapor pressure</b>	No information available	No information available
<b>Vapor density</b>	No information available	No information available
<b>Specific gravity</b>	No information available	No information available
<b>Solubility (water)</b>	Soluble	No information available
<b>Solubility in other solvents</b>	No information available	No information available
<b>Partition coefficient: n-octanol/water</b>	No information available	No information available
<b>Autoignition temperature</b>	Not applicable	No information available
<b>Decomposition temperature</b>	No information available	No information available

**Kinematic viscosity** No information available No information available

**Dynamic viscosity** No information available No information available

**Other information**

Density	No information available
Bulk Density	No information available
Explosive properties	No information available
Oxidizing properties	No information available
Softening point	No information available
Molecular weight	No information available
Volatile Organic Compound (VOC) content, wt. %	No information available
Percent Volatile, wt. %	No information available

## 10. STABILITY AND REACTIVITY

**Reactivity**

**Reactivity**

No data available.

**Chemical stability**

**Chemical stability**

At temperatures greater than 650° C (1202° F), product decomposes to form aluminum oxide and sulfur trioxide. Stable under normal temperatures and pressures.

**Possibility of hazardous reactions**

**Possibility of hazardous reactions**

None under normal processing.

**Hazardous polymerization**

Not anticipated under normal or recommended handling and storage conditions.

**Conditions to avoid**

**Conditions to avoid**

Extreme heat.

**Incompatible materials**

**Materials to avoid**

Reacts with strong alkali to form aluminum hydroxide. On contact with moisture, an acidic solution forms. Weakly corrosive to carbon steel.

**Hazardous decomposition products**

**Hazardous decomposition products**

Sulphur oxides. Aluminum oxide.

## 11. TOXICOLOGICAL INFORMATION

**Information on likely routes of exposure**

**Eye contact**

Higher concentrations or splashes may cause irreversible eye damage. Dust may cause irritation and inflammation. Prolonged exposure to Aluminum salts may cause conjunctivitis.

**Skin contact**

May cause irritation to skin with redness, pain and possibly burns. May cause irritation or burns if the product is wet or in the presence of perspiration. Not irritating to skin in rabbits.

**Ingestion**

Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Concentrated solutions can cause burns of the mouth, bleeding stomach, muscle spasms and kidney injury.

**Inhalation**

Inhalation of dust may cause irritation of the respiratory system.

**Acute toxicity - Product Information**

<b>Oral LD50</b>	6207 mg/kg (mouse) 1930 mg/kg (rat)
<b>Dermal LD50</b>	No information available
<b>Inhalation LC50</b>	No information available

**Acute toxicity - Component Information**

Component	weight-%	Oral LD50	Dermal LD50	Inhalation LC50
Aluminum sulfate	99.5	= 1930 mg/kg ( Rat )	--	--

**Information on toxicological effects****Symptoms**

No information available.

**Delayed and immediate effects as well as chronic effects from short and long-term exposure****Skin corrosion/irritation**

Dry product was found to be non-irritating in skin studies with rabbits.

**Serious eye damage/eye irritation**

Risk of serious damage to eyes

**Sensitization**

No information available

**Germ cell mutagenicity**

No information available

**Carcinogenicity**

This product does not contain any components in concentrations greater than or equal to 0.1% that are listed as known or suspected carcinogens by NTP, IARC, ACGIH, or OSHA.

**Reproductive toxicity**

No information available

**Specific target organ toxicity - Single exposure**

No information available.

**Specific target organ toxicity - Repeated exposure**

No information available

**Aspiration hazard**

No information available.

**Numerical measures of toxicity - Product Information**

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral) 1940 mg/kg

**Other information**

Conclusions are drawn from sources other than direct testing.

## 12. ECOLOGICAL INFORMATION

**Ecotoxicity**

- Harmful to aquatic life with long lasting effects

**Acute aquatic toxicity - Product Information**

**Fish** No information available

**Crustacea** No information available

**Algae/aquatic plants** No information available

**Acute aquatic toxicity - Component Information**

Component	weight-%	Algae/aquatic plants	Fish	Toxicity to daphnia and other aquatic invertebrates
Aluminum sulfate 10043-01-3	99.5	--	LC50 (96 h ) = 100 mg/L (Carassius auratus) LC50 (96 h static) = 37 mg/L (Gambusia affinis)	EC50 (15 min ) = 136 mg/L (Daphnia magna)

**Persistence and degradability**

**Persistence and degradability**  
No information available

**Bioaccumulative potential**

**Bioaccumulative potential**  
No information available.

**Mobility**

**Mobility**  
No information available

**Results of PBT and vPvB assessment**

**PBT and vPvB assessment**  
No information available

**Other adverse effects**

**Other information**  
No other ecological studies have been carried out on this product.

## 13. DISPOSAL CONSIDERATIONS

**Waste treatment methods****Disposal of wastes**

Dispose of product in an approved chemical waste landfill or incinerate in accordance with applicable Federal, state and local regulations.



**Contaminated packaging**

Since empty containers retain product residue, follow label warnings even after container is emptied.

**14. TRANSPORT INFORMATION**

<b>DOT</b>	Regulated in quantities above RQ.
<b>Reportable Quantity (RQ)</b>	5,000 lbs
<b>DOT Shipping Name &gt; RQ</b>	UN3077, Environmentally Hazardous Substance, Solid, N.O.S. (Aluminum Sulfate), 9, PG III, RQ, ERG# 171
<b>ICAO/IATA</b>	Regulated
<b>UN number</b>	UN3077
<b>Proper shipping name</b>	Environmentally Hazardous Substance, Solid, N.O.S. (Aluminum Sulfate)
<b>Packing group</b>	III
<b>ERG Code</b>	9L
<b>IMDG</b>	Contact Manufacturer.
<b>Harmonized Tariff Number</b>	2833.30

**15. REGULATORY INFORMATION****International Inventories****TSCA (United States)**

All ingredients are on the inventory or exempt from listing

**Australia (AICS)**

All ingredients are on the inventory or exempt from listing

**Canada (DSL)**

All ingredients are on the inventory or exempt from listing

**Canada (NDSL)**

None of the ingredients are on the inventory.

**China (IECSC)**

All ingredients are on the inventory or exempt from listing

**EINECS (European Inventory of Existing Chemical Substances)**

All ingredients are on the inventory or exempt from listing

**ELINCS (European List of Notified Chemical Substances)**

None of the ingredients are on the inventory.

**ENCS (Japan)**

All ingredients are on the inventory or exempt from listing

**South Korea (KECL)**

All ingredients are on the inventory or exempt from listing

**Philippines (PICCS)**

All ingredients are on the inventory or exempt from listing

**Legend**

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory

**AICS** - Australian Inventory of Chemical Substances

**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List

**IECSC** - China Inventory of Existing Chemical Substances

**EINECS/ELINCS** - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

**ENCS** - Japan Existing and New Chemical Substances

**KECL** - Korean Existing and Evaluated Chemical Substances

**PICCS** - Philippines Inventory of Chemicals and Chemical Substances

### U.S. Federal Regulations

#### **CERCLA**

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302).

Component	CERCLA/SARA Hazardous Substance RQ	CERCLA/SARA - Section 302 Extremely Hazardous Substances TPQs	Calculated Product RQ
Aluminum sulfate 10043-01-3	5000 lb final RQ; 2270 kg final RQ	--	5,000 lbs

#### **CWA (Clean Water Act)**

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42):

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Priority Pollutants	CWA - Toxic Pollutants
Aluminum sulfate 10043-01-3	Present	5000 lb RQ	--	--

#### **SARA 311/312 Hazard Categories**

Acute health hazard	Yes
Chronic health hazard	No
Fire hazard	No
Sudden release of pressure hazard	No
Reactive hazard	No

#### **SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

### U.S. State Regulations

#### **California Proposition 65**

This product does not contain any Proposition 65 chemicals.

### U.S. State Right-to-Know Regulations

Aluminum sulfate 10043-01-3	
Massachusetts Right to Know Law	Present
Minnesota Hazardous Substance List	Present
New Jersey Right to Know List	sn 0068
Pennsylvania Right to Know List	Environmental hazard

## **16. OTHER INFORMATION**

<b>NFPA Rating</b>	Health - 2	Flammability - 0	Instability - 1	Special Hazard -
<b>HMIS Rating</b>	Health - 2	Flammability - 0	Physical hazards - 1	Personal protection - B
<b>Product code</b>	3204F			
<b>Revision date</b>	2016-09-29			
<b>Revision number</b>	1.01			

**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet