

**1. Identification**

|   |   |                 |
|---|---|-----------------|
| <b>Product identifier</b>                                     | <b>Aluminum sulfate</b>                                   |                 |
| <b>Other means of identification</b>                          |   |                 |
| <b>Item</b>   | NG-I5   |                 |
| <b>Synonyms</b>   | Aluminium sulphate  |                 |
| <b>Recommended use</b>  | For Laboratory Use Only                                   |                 |
| <b>Recommended restrictions</b>                               | None known.   |                 |
| <b>Manufacturer/Importer/Supplier/Distributor information</b> |   |                 |
| <b>Manufacturer</b>   |   |                 |
| <b>Company name</b>   | Chem Service, Inc.  |                 |
| <b>Address</b>  | 660 Tower Lane<br>West Chester, PA 19380<br>United States |                 |
| <b>Telephone</b>  | Toll Free   | 800-452-9994    |
|   | Direct  | 610-692-3026    |
| <b>Website</b>  | www.chemservice.com                                       |                 |
| <b>E-mail</b>   | info@chemservice.com                                      |                 |
| <b>Emergency phone number</b>                                 | Chemtrec US   | 800-424-9300    |
|   | Chemtrec outside US                                       | +1 703-527-3887 |

**2. Hazard(s) identification**

|                              |                                   |            |
|------------------------------|-----------------------------------|------------|
| <b>Physical hazards</b>      | Corrosive to metals               | Category 1 |
| <b>Health hazards</b>        | Serious eye damage/eye irritation | Category 1 |
| <b>Environmental hazards</b> | Not classified.                   |            |
| <b>OSHA defined hazards</b>  | Not classified.                   |            |

**Label elements**

|  |   |  |
|--|---|--|
| <b>Signal word</b>                               | Danger  |  |
| <b>Hazard statement</b>                          | May be corrosive to metals. Causes serious eye damage.  |  |
| <b>Precautionary statement</b>                   |   |  |
| <b>Prevention</b>                                | Keep only in original container. Wear eye protection/face protection.   |  |
| <b>Response</b>                                  | If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. Absorb spillage to prevent material damage. |  |
| <b>Storage</b>                                   | Store in corrosive resistant container with a resistant inner liner.  |  |
| <b>Disposal</b>                                  | Dispose of waste and residues in accordance with local authority requirements.  |  |
| <b>Hazard(s) not otherwise classified (HNOC)</b> | None known.   |  |
| <b>Supplemental information</b>                  | None.   |  |

**3. Composition/information on ingredients****Substances**

| <b>Chemical name</b> | <b>Common name and synonyms</b> | <b>CAS number</b> | <b>%</b> |
|----------------------|---------------------------------|-------------------|----------|
| Aluminum sulfate     | Aluminium sulphate              | 10043-01-3        | 100      |

## 4. First-aid measures

|   |   |
|---|---|
| <b>Inhalation</b>   | Move to fresh air. Call a physician if symptoms develop or persist.   |
| <b>Skin contact</b>   | Wash off with soap and water. Get medical attention if irritation develops and persists.  |
| <b>Eye contact</b>  | Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately. |
| <b>Ingestion</b>  | Rinse mouth. Get medical attention if symptoms occur.   |
| <b>Most important symptoms/effects, acute and delayed</b>                     | Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.                |
| <b>Indication of immediate medical attention and special treatment needed</b> | Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.  |
| <b>General information</b>  | Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.  |

## 5. Fire-fighting measures

|  |  |
|--|--|
| <b>Suitable extinguishing media</b>                                  | Water fog. Dry chemical powder. Carbon dioxide (CO <sub>2</sub> ). Alcohol resistant foam.                           |
| <b>Unsuitable extinguishing media</b>                                | Do not use water jet as an extinguisher, as this will spread the fire.   |
| <b>Specific hazards arising from the chemical</b>                    | During fire, gases hazardous to health may be formed.  |
| <b>Special protective equipment and precautions for firefighters</b> | Self-contained breathing apparatus and full protective clothing must be worn in case of fire.                        |
| <b>Fire fighting equipment/instructions</b>                          | Use water spray to cool unopened containers. Wear self contained breathing apparatus for fire fighting if necessary. |
| <b>Specific methods</b>  | Use standard firefighting procedures and consider the hazards of other involved materials.                           |

## 6. Accidental release measures

|  |   |
|--|---|
| <b>Personal precautions, protective equipment and emergency procedures</b> | Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS. Wear respiratory protection. Avoid dust formation. Avoid breathing mist or vapor. Avoid breathing gas. Avoid inhalation of dust. Evacuate the area promptly. |
| <b>Methods and materials for containment and cleaning up</b>               | Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb spillage to prevent material damage. Absorb in vermiculite, dry sand or earth and place into containers. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water.<br>Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.  |
| <b>Environmental precautions</b>   | Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. Avoid discharge into drains, water courses or onto the ground.  |

## 7. Handling and storage

|   |  |
|---|--|
| <b>Precautions for safe handling</b>                                | Provide adequate ventilation. Do not get this material in contact with eyes. Avoid prolonged exposure. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. Avoid formation of dust and aerosols. Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs. Provide appropriate exhaust ventilation at places where dust is formed. |
| <b>Conditions for safe storage, including any incompatibilities</b> | Store in a cool, dry place out of direct sunlight. Store in corrosive resistant container with a resistant inner liner. Keep only in the original container. Store away from incompatible materials (see Section 10 of the SDS). Store under an inert atmosphere. Store in a dry place.  |

## 8. Exposure controls/personal protection

### Occupational exposure limits

#### US. ACGIH Threshold Limit Values

| Material                          | Type | Value               | Form                 |
|-----------------------------------|------|---------------------|----------------------|
| Aluminum sulfate (CAS 10043-01-3) | TWA  | 1 mg/m <sup>3</sup> | Respirable fraction. |

#### US. NIOSH: Pocket Guide to Chemical Hazards

| Material                          | Type | Value               |
|-----------------------------------|------|---------------------|
| Aluminum sulfate (CAS 10043-01-3) | TWA  | 2 mg/m <sup>3</sup> |

### Biological limit values

No biological exposure limits noted for the ingredient(s).

### Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station.

### Individual protection measures, such as personal protective equipment

**Eye/face protection** Wear safety glasses with side shields (or goggles) and a face shield.

#### Skin protection

##### Hand protection

Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.

##### Other

Wear suitable protective clothing.

##### Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment.

##### Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

### General hygiene considerations

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

## 9. Physical and chemical properties

### Appearance

|                       |                 |
|-----------------------|-----------------|
| <b>Physical state</b> | Solid.          |
| <b>Form</b>           | Solid.          |
| <b>Color</b>          | Colorless-White |

**Odor** Not available.

**Odor threshold** Not available.

**pH** Not available.

**Melting point/freezing point** 1418 °F (770 °C) dec. estimated

**Initial boiling point and boiling range** Not available.

**Flash point** Not available.

**Evaporation rate** Not available.

**Flammability (solid, gas)** Not available.

### Upper/lower flammability or explosive limits

**Flammability limit - lower (%)** Not available.

**Flammability limit - upper (%)** Not available.

**Explosive limit - lower (%)** Not available.

**Explosive limit - upper (%)** Not available.

**Vapor pressure** Not available.

**Vapor density** Not available.

**Relative density** 2.71 g/ml at 25 °C estimated

|  |  |
|--|--|
| <b>Solubility(ies)</b>                         |  |
| <b>Solubility (water)</b>                      | Not available.                                 |
| <b>Partition coefficient (n-octanol/water)</b> | Not available.                                 |
| <b>Auto-ignition temperature</b>               | Not available.                                 |
| <b>Decomposition temperature</b>               | Not available.                                 |
| <b>Viscosity</b>                               | Not available.                                 |
| <b>Other information</b>                       |  |
| <b>Explosive properties</b>                    | Not explosive.                                 |
| <b>Molecular formula</b>                       | Al <sub>2</sub> O <sub>12</sub> S <sub>3</sub> |
| <b>Molecular weight</b>                        | 342.15 g/mol                                   |
| <b>Oxidizing properties</b>                    | Not oxidizing.                                 |

## 10. Stability and reactivity

|   |  |
|---|--|
| <b>Reactivity</b>                         | May be corrosive to metals.  |
| <b>Chemical stability</b>                 | Material is stable under normal conditions.                                      |
| <b>Possibility of hazardous reactions</b> | Hazardous polymerization does not occur.   |
| <b>Conditions to avoid</b>                | Contact with incompatible materials. Exposure to air. Exposure to moisture.      |
| <b>Incompatible materials</b>             | Strong oxidizing agents. Metals.Strong bases. Ammonia. Water. Amines. Moist air. |
| <b>Hazardous decomposition products</b>   | No hazardous decomposition products are known.                                   |

## 11. Toxicological information

### Information on likely routes of exposure

|                     |  |
|---------------------|--|
| <b>Inhalation</b>   | Prolonged inhalation may be harmful.                 |
| <b>Skin contact</b> | No adverse effects due to skin contact are expected. |
| <b>Eye contact</b>  | Causes serious eye damage.                           |
| <b>Ingestion</b>    | Expected to be a low ingestion hazard.               |

**Symptoms related to the physical, chemical and toxicological characteristics** Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.

### Information on toxicological effects

#### Acute toxicity

| Product                           | Species    | Test Results                  |
|-----------------------------------|------------|-------------------------------|
| Aluminum sulfate (CAS 10043-01-3) |            |                               |
| <b>Acute</b>                      |            |                               |
| <b>Dermal</b>                     |            |                               |
| LD50                              | Mouse      | > 1167.5 mg/kg, 5 Days        |
|                                   | Pig        | > 1167.5 mg/kg, 5 Days        |
|                                   | Rabbit     | > 5000 mg/kg, 24 Hours        |
| <b>Inhalation</b>                 |            |                               |
| LC50                              | Rat        | 50 mg/m <sup>3</sup> , 5 Days |
| <i>Aerosol</i>                    |            |                               |
| LC50                              | Rat        | 5 mg/l, 4 Hours               |
| <b>Oral</b>                       |            |                               |
| LD50                              | -          | 253 mg/kg                     |
|                                   | Guinea pig | 490 mg/kg                     |
|                                   | Mouse      | > 730 mg/kg                   |
|                                   | Rat        | > 2000 mg/kg                  |

\* Estimates for product may be based on additional component data not shown.

|   |  |
|---|--|
| <b>Skin corrosion/irritation</b>  | Prolonged skin contact may cause temporary irritation.   |
| <b>Serious eye damage/eye irritation</b>                                  | Causes serious eye damage.   |
| <b>Respiratory or skin sensitization</b>                                  |  |
| <b>Respiratory sensitization</b>  | Not a respiratory sensitizer.  |
| <b>Skin sensitization</b>   | This product is not expected to cause skin sensitization.  |
| <b>Germ cell mutagenicity</b>   | No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic. |
| <b>Carcinogenicity</b>  | This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.                                  |
| <b>IARC Monographs. Overall Evaluation of Carcinogenicity</b>             | Not available.   |
| <b>US. National Toxicology Program (NTP) Report on Carcinogens</b>        | Not available.   |
| <b>US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)</b> | Not listed.  |
| <b>Reproductive toxicity</b>  | This product is not expected to cause reproductive or developmental effects.                                     |
| <b>Specific target organ toxicity - single exposure</b>                   | Not classified.  |
| <b>Specific target organ toxicity - repeated exposure</b>                 | Not classified.  |
| <b>Aspiration hazard</b>  | Not an aspiration hazard.  |
| <b>Chronic effects</b>  | Prolonged inhalation may be harmful.   |

## 12. Ecological information

**Ecotoxicity** The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

| Product                           | Species | Test Results   |
|-----------------------------------|---------|--|
| Aluminum sulfate (CAS 10043-01-3) |         |  |
| <b>Aquatic</b>                    |         |  |
| Crustacea                         | EC50    | Amphipod ( <i>Crangonyx pseudogracilis</i> ) 11.8 - 14 mg/l, 48 hours  |
| Fish                              | LC50    | Fathead minnow ( <i>Pimephales promelas</i> ) 3.4 - 5.6 mg/l, 96 hours |

\* Estimates for product may be based on additional component data not shown.

|                                      |   |
|--------------------------------------|---|
| <b>Persistence and degradability</b> | No data is available on the degradability of this product.  |
| <b>Bioaccumulative potential</b>     | No data available.  |
| <b>Mobility in soil</b>              | No data available.  |
| <b>Other adverse effects</b>         | No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component. |

## 13. Disposal considerations

|  |  |
|--|--|
| <b>Disposal instructions</b>                 | Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.                         |
| <b>Local disposal regulations</b>            | Dispose in accordance with all applicable regulations.   |
| <b>Hazardous waste code</b>                  | D002: Waste Corrosive material [pH ≤2 or ≥12.5, or corrosive to steel]<br>The waste code should be assigned in discussion between the user, the producer and the waste disposal company.                         |
| <b>Waste from residues / unused products</b> | Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions). |
| <b>Contaminated packaging</b>                | Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.       |

## 14. Transport information

|                  |        |
|------------------|--------|
| <b>DOT</b>       |        |
| <b>UN number</b> | UN3260 |

**UN proper shipping name** Corrosive solid, acidic, inorganic, n.o.s.  
**Transport hazard class(es)**  
**Class** 8  
**Subsidiary risk** -  
**Label(s)** 8  
**Packing group** III  
**Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.  
**Special provisions** IB8, IP3, T1, TP33  
**Packaging exceptions** 154  
**Packaging non bulk** 213  
**Packaging bulk** 240

**IATA**

**UN number** UN3260  
**UN proper shipping name** Corrosive solid, acidic, inorganic, n.o.s.  
**Transport hazard class(es)**  
**Class** 8  
**Subsidiary risk** -  
**Packing group** III  
**Environmental hazards** No.  
**ERG Code** 8L  
**Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.  
**Other information**  
**Passenger and cargo aircraft** Allowed.  
**Cargo aircraft only** Allowed.

**IMDG**

**UN number** UN3260  
**UN proper shipping name** CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S.  
**Transport hazard class(es)**  
**Class** 8  
**Subsidiary risk** -  
**Packing group** III  
**Environmental hazards**  
**Marine pollutant** No.  
**EmS** F-A, S-B  
**Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.  
**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** Not applicable.

**DOT**





## 15. Regulatory information

**US federal regulations** This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

**TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**

Not regulated.

**CERCLA Hazardous Substance List (40 CFR 302.4)**

Aluminum sulfate (CAS 10043-01-3) Listed.

**SARA 304 Emergency release notification**

Not regulated.

**US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)**

Not listed.

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

**Hazard categories** Immediate Hazard - Yes  
 Delayed Hazard - No  
 Fire Hazard - No  
 Pressure Hazard - No  
 Reactivity Hazard - No

**SARA 302 Extremely hazardous substance**

Not listed.

**SARA 311/312 Hazardous chemical** Yes

**SARA 313 (TRI reporting)**

Not regulated.

**Other federal regulations**

**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Not regulated.

**Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)**

Not regulated.

**Clean Water Act (CWA) Section 112(r) (40 CFR 68.130)** Hazardous substance

**Safe Drinking Water Act (SDWA)** Not regulated.

**US state regulations**

**US - New Jersey RTK - Substances: Listed substance**

Aluminum sulfate (CAS 10043-01-3)

**US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)**

Not listed.

**US. Massachusetts RTK - Substance List**

Aluminum sulfate (CAS 10043-01-3)

**US. New Jersey Worker and Community Right-to-Know Act**

Not regulated.

**US. Pennsylvania RTK - Hazardous Substances**

Aluminum sulfate (CAS 10043-01-3)

**US. Pennsylvania Worker and Community Right-to-Know Law**

Aluminum sulfate (CAS 10043-01-3)

## US. Rhode Island RTK

Not regulated.

## US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

### International Inventories

| Country(s) or region        | Inventory name   | On inventory (yes/no)* |
|-----------------------------|--|------------------------|
| Australia                   | Australian Inventory of Chemical Substances (AICS)                     | Yes                    |
| Canada                      | Domestic Substances List (DSL)   | Yes                    |
| Canada                      | Non-Domestic Substances List (NDSL)                                    | Yes                    |
| China                       | Inventory of Existing Chemical Substances in China (IECSC)             | Yes                    |
| Europe                      | European Inventory of Existing Commercial Chemical Substances (EINECS) | Yes                    |
| Europe                      | European List of Notified Chemical Substances (ELINCS)                 | No                     |
| Japan                       | Inventory of Existing and New Chemical Substances (ENCS)               | Yes                    |
| Korea                       | Existing Chemicals List (ECL)  | Yes                    |
| New Zealand                 | New Zealand Inventory  | Yes                    |
| Philippines                 | Philippine Inventory of Chemicals and Chemical Substances (PICCS)      | Yes                    |
| United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory                          | Yes                    |

\*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

## 16. Other information, including date of preparation or last revision

|              |  |
|--------------|--|
| Issue date   | 02-22-2017                                     |
| Version #    | 01   |
| NFPA ratings | Health: 3<br>Flammability: 0<br>Instability: 0 |

### Disclaimer

The above information is believed to be correct on the date it was last revised and must not be considered all inclusive. The information has been obtained only by a search of available literature and is only a guide for handling the chemicals. OSHA regulations require that if other hazards become evident, an upgraded SDS must be made available to the employee within three months. RESPONSIBILITY for updates lies with the employer and not with CHEM SERVICE, Inc.

Persons not specifically and properly trained should not handle this chemical or its container. This product is furnished FOR LABORATORY USE ONLY! Our products may NOT BE USED as drugs, cosmetics, agricultural or pesticide products, food additives or as household chemicals.

This Safety Data Sheet (SDS) is intended only for use with Chem Service, Inc. products and should not be relied on for use with materials from any other supplier even if the chemical name(s) on the product are identical! Whenever using an SDS for a solution or mixture the user should refer to the SDS for every component of the solution or mixture. Chem Service warrants that this SDS is based upon the most current information available to Chem Service at the time it was last revised. THIS WARRANTY IS EXCLUSIVE, AND CHEM SERVICE, INC. MAKES NO OTHER WARRANTY, EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE. This SDS is provided gratis and CHEM SERVICE, INC. SHALL NOT BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL OR CONTINGENT DAMAGES.

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