# SAFETY DATA SHEET

**Revision date** 2015-03-12  
**Revision number** 1

## 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

### Product identifier

**Product name**  
Polyaluminum chloride solution

**Other means of identification**

**Product code**  
3204J

**Synonyms**  
Aluminum chloride hydroxide; Aluminum hydroxychloride; Aluminum chloride oxide

### 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)

**Emergency telephone number**

**24 Hour Emergency Phone Number**  
CHEMTREC: (800) 424-9300  
Outside USA - 00 1 (703) 527-3887 collect calls accepted

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

## 2. HAZARDS IDENTIFICATION

### Classification

**OSHA Regulatory Status**

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

<table>
<thead>
<tr>
<th>Hazard Statement</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin corrosion/irritation</td>
<td>Category 2</td>
</tr>
<tr>
<td>Serious eye damage/eye irritation</td>
<td>Category 2</td>
</tr>
<tr>
<td>Corrosive to metals</td>
<td>Category 1</td>
</tr>
</tbody>
</table>

### GHS Label elements, including precautionary statements

**EMERGENCY OVERVIEW**
WARNING

Hazard statements
Causes skin irritation
Causes serious eye irritation
May be corrosive to metals

Precautionary Statements - Prevention
Wash face, hands and any exposed skin thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection
Keep only in original container

Precautionary Statements - Response
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
If eye irritation persists: Get medical advice/attention
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
Absorb spillage to prevent material damage

Precautionary Statements - Storage
Store in corrosive resistant container with a resistant inner liner

Other information
* Not applicable

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>weight-%</th>
<th>TRADE SECRET</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polyaluminum Chloride</td>
<td>1327-41-9</td>
<td>25 - 35%</td>
<td>*</td>
</tr>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>65 - 75%</td>
<td>*</td>
</tr>
</tbody>
</table>

*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
Immediately flush skin with plenty of soap and water for at least 15 minutes. Remove contaminated clothing and shoes. Wash contaminated clothing before reuse. If skin irritation occurs: Get medical advice/attention.
Ingestion
Do NOT induce vomiting. If vomiting should occur spontaneously, keep airway clear. Never give anything by mouth to an unconscious person. Get medical attention.

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

Most important symptoms and effects, both acute and delayed

Acute effects
Possible eye, skin and respiratory tract irritation.

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.

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
May produce hazardous fumes or hazardous decomposition products.

Advice for firefighters

Firefighting measures
Product is a water solution and nonflammable. In a fire, this product may build up pressure and rupture a sealed container; cool exposed containers with water spray. Use self-contained breathing apparatus in confined areas; avoid breathing mist or spray.

Special protective equipment for firefighters
Full protective clothing and approved self-contained breathing apparatus required for fire fighting 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 adequate personal protective clothing and equipment. Approved breathing apparatus may be necessary.
Environmental precautions

Do not allow liquid to enter streams or waterways.

Methods and material for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so. Build dikes as necessary to contain flow of large spills.

Methods for cleaning up
Clear spills immediately. For small spills, use soda ash to neutralize, an inert material to absorb. Place contaminated materials into containers and store in a safe place to await proper disposal. Caution: Use of soda ash may generate carbon dioxide gas. Provide adequate ventilation to spill area.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling
Keep container closed when not in use
Keep away from heat and open flame.
Avoid contact with eyes, skin and clothing
Wear chemical splash goggles, gloves, and protective clothing when handling.
Wash thoroughly after handling
Avoid breathing vapor or mist
Use with adequate ventilation and employ respiratory protection where mist or spray may be generated.
FOR INDUSTRIAL USE ONLY.

Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions
Store in a cool, dry place away from direct heat.
Keep container closed when not in use
Do not store in unlined metal containers.
Product may slowly corrode iron, brass, copper, aluminum, mild steel, and stainless steel.

Incompatible products
Alkalis.

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
Take off contaminated clothing and wash before reuse.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
<th>Remarks / Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>liquid</td>
<td></td>
</tr>
<tr>
<td>Color</td>
<td>colorless to yellow</td>
<td></td>
</tr>
<tr>
<td>Appearance</td>
<td>clear</td>
<td></td>
</tr>
<tr>
<td>Odor</td>
<td>no appreciable odor</td>
<td></td>
</tr>
<tr>
<td>Odor threshold</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>pH</td>
<td>2.0 - 3.0</td>
<td>as is</td>
</tr>
<tr>
<td>Melting / freezing point</td>
<td>-12 °C / 10 °F</td>
<td>No information available</td>
</tr>
<tr>
<td>Boiling point / boiling range</td>
<td>104 °C / 220 °F</td>
<td>No information available</td>
</tr>
<tr>
<td>Flash point</td>
<td>Not applicable</td>
<td>No information available</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No information available</td>
<td>No information available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No information available</td>
<td>No information available</td>
</tr>
<tr>
<td>Flammability Limit in Air</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper flammability limit</td>
<td>Not applicable</td>
<td>No information available</td>
</tr>
<tr>
<td>Lower flammability limit</td>
<td>Not applicable</td>
<td>No information available</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>No information available</td>
<td>No information available</td>
</tr>
<tr>
<td>Vapor density</td>
<td>No information available</td>
<td>No information available</td>
</tr>
<tr>
<td>Specific gravity</td>
<td>1.19 - 1.21</td>
<td>No information available</td>
</tr>
<tr>
<td>Solubility (water)</td>
<td>Soluble below pH 4</td>
<td>No information available</td>
</tr>
<tr>
<td>Solubility in other solvents</td>
<td>No information available</td>
<td>No information available</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>No information available</td>
<td>No information available</td>
</tr>
</tbody>
</table>
Autoignition temperature: Not applicable
Decomposition temperature: No information available
Kinematic viscosity: No information available
Dynamic viscosity: < 20 cps @ 25 °C

10. STABILITY AND REACTIVITY

Reactivity
No data available.

Chemical stability
Chemical stability
Stable.

Possibility of hazardous reactions
Possibility of hazardous reactions
None under normal processing.

Hazardous polymerization
No.

Conditions to avoid
Conditions to avoid
None.

Incompatible materials
Materials to avoid
Alkalis.

Hazardous decomposition products
Hazardous decomposition products
Thermal decomposition may release toxic and/or hazardous gases such as aluminum, Cl₂, and HCl.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure
Eye contact
May cause moderate eye irritation that can become severe with prolonged contact. Prolonged exposure to Aluminum salts may cause conjunctivitis.

Skin contact
Prolonged and/or repeated contact may cause skin irritation.

Ingestion
May cause irritation of the mouth, throat and stomach. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Inhalation
Inhalation of mist or vapor may cause respiratory tract irritation.

**Acute toxicity - Product Information**

<table>
<thead>
<tr>
<th></th>
<th>Oral LD50</th>
<th>Dermal LD50</th>
<th>Inhalation LC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral LD50</td>
<td>No information available</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dermal LD50</td>
<td>No information available</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inhalation LC50</td>
<td>No information available</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Acute toxicity - Component Information**

<table>
<thead>
<tr>
<th>Component</th>
<th>weight-%</th>
<th>Oral LD50</th>
<th>Dermal LD50</th>
<th>Inhalation LC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polyaluminum Chloride</td>
<td>25 - 35%</td>
<td>&gt; 2000 mg/kg ( Rat )</td>
<td>--</td>
<td>--</td>
</tr>
</tbody>
</table>

**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**
No information available

**Serious eye damage/eye irritation**
No information available

**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) 5720 mg/kg

Other information
Conclusions are drawn from sources other than direct testing.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Acute aquatic toxicity - Product Information

Fish
LD (24 hr, static, Fresh Water) 10 mg/L Oncorhynchus kisutch, Coho salmon, Silver salmon
LD (24 hr, static, Fresh Water) 10 mg/L Ptychocheilus oregonenis, Northern squawfish
LD (24 hr, static, Fresh Water) 10 mg/L Oncorhynchus tshawytscha, Chinook salmon

Crustacea
LC50 (48 Hour, static) 33.2 mg/L Ceriodaphnia dubia

Algae/aquatic plants
No information available

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
1 Data from USEPA ECOTOX database search, reference: Lethal Effects of 1888 Chemicals upon Four Species of Fish From Western North America, MacPhee, C. and R. Ruelle, Univ. of Idaho Forest, Wildlife Range Experimental Station Bull. No. 3, Moscow, ID, 112p.
2 Generated from tests conducted by SEAUS Testing Laboratories Nov., 1993 using EPA/600-4-90/027

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

**DOT**
- Regulated
  - DOT UN/NA Number: UN3264
  - Proper shipping name: Corrosive Liquid, Acidic, Inorganic, N.O.S. (Polyaluminum Chloride Solution)
  - Hazard class: 8
  - Packing group: III
  - ERG Number: 154

**ICAO/IATA**
- Regulated
  - UN number: UN3264
  - Proper shipping name: Corrosive Liquid, Acidic, Inorganic, N.O.S. (Polyaluminum Chloride Solution)
  - Hazard class: 8
  - Packing group: III
  - ERG Code: 8L

**IMDG**
- Regulated
  - UN number: UN3264
  - Proper shipping name: Corrosive Liquid, Acidic, Inorganic, N.O.S. (Polyaluminum Chloride Solution)
  - Hazard class: 8
  - Packing group: III
  - EmS: F-A; S-B

**Harmonized Tariff Number**
- 2827.49

### 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, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

CWA (Clean Water Act)
This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

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

<table>
<thead>
<tr>
<th>Polyaluminum Chloride 1327-41-9</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Minnesota Hazardous Substance List</td>
<td>Present</td>
</tr>
<tr>
<td>Pennsylvania Right to Know List</td>
<td>Present</td>
</tr>
</tbody>
</table>
16. OTHER INFORMATION

| NFPA Rating | Health - 2 | Flammability - 0 | Instability - 0 | Special Hazard - COR |
| HMIS Rating | Health - 2 | Flammability - 0 | Physical hazard - 0 | Personal protection - X |

Product code 3204J
Revision date 2015-03-12
Revision number 1

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