

SAFETY DATA SHEET

Revision date 2015-05-06

Revision number 1

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

Product identifier

Product name Aluminum Chloride Solution (Technical grade)

Other means of identification

Product code 3204K
Synonyms Aluminum chloride, solution; Aluminum trichloride solution
AlCl₃*6H₂O Solution

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 - +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).

| | |
|--|------------|
| Acute Toxicity - Oral | Category 4 |
| Skin corrosion/irritation | Category 1 |
| Serious eye damage/eye irritation | Category 1 |
| Corrosive to metals | Category 1 |

GHS Label elements, including precautionary statements

EMERGENCY OVERVIEW

| | | | |
|---------------------------------|-------------------------------------|----------------------------|------------------------------------|
| Physical state liquid | Color colorless to yellow | Appearance clear | Odor no appreciable odor |
|---------------------------------|-------------------------------------|----------------------------|------------------------------------|

**DANGER****Hazard statements**

Harmful if swallowed
Causes severe skin burns and eye damage
May be corrosive to metals

Precautionary Statements - Prevention

Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Do not breathe dust/fume/gas/mist/vapors/spray
Wear protective gloves/protective clothing/eye protection/face protection
Keep only in original container

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 (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
Wash contaminated clothing before reuse
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth
Do NOT induce vomiting
Absorb spillage to prevent material damage

Precautionary Statements - Storage

Store locked up
Store in corrosive resistant container with a resistant inner liner

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 Chloride | 7446-70-0 | < 30% | * |
| Water | 7732-18-5 | > 70% | * |

*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 or burns.

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 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 permit solutions of product into sewers or waterways.

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

Soak up with inert absorbent material. Shovel into labeled waste container for disposal. Provide adequate ventilation to spill area. Clean up residual material by washing area with water. Collect washings for disposal.

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.

Do not take internally

FOR INDUSTRIAL USE ONLY.

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

Do not store in unlined metal containers.

Product may slowly corrode iron, brass, copper, aluminum, mild steel, and stainless steel.

Store in a cool, dry place away from heat.

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

Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse.

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

| | |
|-----------------------|--------------------------|
| Physical state | liquid |
| Color | colorless to yellow |
| Appearance | clear |
| Odor | no appreciable odor |
| Odor threshold | No information available |

| <u>Property</u> | <u>Values</u> | <u>Remarks / Method</u> |
|--------------------------------------|--------------------------|--------------------------|
| pH | < 1 | as is |
| Melting / freezing point | -35 °C / -31 °F | No information available |
| Boiling point / boiling range | 104 °C / 220 °F | No information available |
| Flash point | Not applicable | No information available |
| Evaporation rate | No information available | No information available |
| Flammability (solid, gas) | Not applicable | No information available |
| Flammability Limit in Air | | |
| Upper flammability limit | Not applicable | No information available |
| Lower flammability limit | Not applicable | No information available |
| Vapor pressure | No information available | No information available |

| | | |
|---|--------------------------|--------------------------|
| Vapor density | No information available | No information available |
| Specific gravity | 1.27 - 1.29 | No information available |
| Solubility (water) | Soluble | No information available |
| Solubility in other solvents | No information available | No information available |
| Partition coefficient: n-octanol/water | No information available | No information available |
| Autoignition temperature | Not applicable | No information available |
| Decomposition temperature | No information available | No information available |
| Kinematic viscosity | No information available | No information available |
| Dynamic viscosity | < 50 cps @ 20 °C | No information available |

Other information

| | |
|--|---------------------------|
| Density | 10.59 - 10.76 lb/gal |
| Bulk Density | No information available |
| Explosive properties | No information available. |
| Oxidizing properties | No information available |
| Softening point | No information available |
| Molecular weight | Not applicable |
| Volatile organic compounds (VOCs) content | No information available |
| Percent Volatile, wt.% | 48 - 52 % |

10. STABILITY AND REACTIVITY**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 known

Incompatible materials**Materials to avoid**

Alkalis.

Hazardous decomposition products

Hazardous decomposition products

Thermal decomposition may release toxic and/or hazardous gases such as Cl₂ and HCl.

11. TOXICOLOGICAL INFORMATION**Information on likely routes of exposure****Eye contact**

Based on pH, this product is expected to cause severe eye irritation, possibly resulting in burns and eye damage. Prolonged exposure to Aluminum salts may cause conjunctivitis.

Skin contact

Prolonged and/or repeated contact will cause severe skin irritation and burns.

Ingestion

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

Inhalation

Inhalation of mist or spray may irritate respiratory tract and may cause burns and difficulty breathing.

Acute toxicity - Product Information

| | |
|------------------------|--|
| Oral LD50 | 3700 mg/kg (rat) ¹ 3805 mg/kg (mouse) ² |
| Dermal LD50 | No information available |
| Inhalation LC50 | No information available |

Acute toxicity - Component Information

| Component | weight-% | Oral LD50 | Dermal LD50 | Inhalation LC50 |
|--------------------------------|----------|---------------------|-------------|-----------------|
| Aluminum Chloride 7446-70-0 | < 30% | = 380 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**

Causes burns

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) | 1357 mg/kg |
| ATEmix (dermal) | 7150 mg/kg |

Other information

Conclusions are drawn from sources other than direct testing.

¹ Environmental Quality and Safety, Supplemental. (Academic Press, 111 5th., Ave., New York, NY 10003) V.1- 1975-² British Journal of Industrial Medicine. (British Medical Journal, 1172 Commonwealth Ave., Boston, MA 02134) V.1- 1944-**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 Chloride 7446-70-0 | < 30% | -- | LC50 (96 h) 6.2 - 11.9 mg/L (Oncorhynchus mykiss) LC50 (96 h flow-through) 5.31 - 7.2 mg/L (Oncorhynchus mykiss) LC50 (96 h) = 27.1 mg/L (Gambusia affinis) | EC50 (48 h Static) = 3.9 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**

Do NOT mix with other chemical wastes. Avoid landfilling liquids. Do not put solutions containing this product into sewer systems. Dispose of product in an approved chemical waste landfill or incinerate in accordance with applicable Federal, state and local regulations.

Contaminated packaging

Do not reuse empty containers. Since empty containers retain product residue, follow label warnings even after container is emptied.

RCRA

Is the unused product a RCRA hazardous waste if discarded? (Yes/No)

Yes

If yes, the EPA Hazardous Waste Code is:

D002 (corrosivity)

14. TRANSPORT INFORMATION**DOT**

Regulated

| | |
|----------------------|----------------------------|
| DOT UN/NA Number | UN2581 |
| Proper shipping name | ALUMINUM CHLORIDE SOLUTION |
| Hazard class | 8 |
| Packing group | III |
| ERG Number | 154 |

ICAO/IATA

Regulated

| | |
|----------------------|----------------------------|
| UN number | UN2581 |
| Proper shipping name | ALUMINUM CHLORIDE SOLUTION |
| Hazard class | 8 |
| Packing group | III |
| ERG Code | 8L |

IMDG

Regulated

| | |
|----------------------|----------------------------|
| UN number | UN2581 |
| Proper shipping name | ALUMINUM CHLORIDE SOLUTION |
| Hazard class | 8 |
| Packing group | III |
| EmS | F-A; S-B |

Harmonized Tariff Number

2827.32

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 | Yes |
| Fire hazard | No |
| Sudden release of pressure hazard | No |
| Reactive hazard | Yes |

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 Chloride 7446-70-0 | |
|------------------------------------|-------------------------------|
| Massachusetts Right to Know Law | Present |
| Minnesota Hazardous Substance List | Present |
| New Jersey Right to Know List | sn 0057 |
| Pennsylvania Right to Know List | Present (dust, as Al) Present |

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 3204K

Revision date 2015-05-06

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