1. Identification

Product Name
Aluminium chloride

Cat No. :  
AC195780000; AC195780010; AC195780050; AC195780051; AC195785000

CAS-No  
7446-70-0

Synonyms  
Aluminium trichloride

Recommended Use  
Laboratory chemicals.

Uses advised against  
Food, drug, pesticide or biocidal product use

Details of the supplier of the safety data sheet

Company
Fisher Scientific  
One Reagent Lane  
Fair Lawn, NJ 07410  
Tel: (201) 796-7100

Acros Organics  
One Reagent Lane  
Fair Lawn, NJ 07410

Emergency Telephone Number
For information US call: 001-800-ACROS-01 / Europe call: +32 14 57 52 11
Emergency Number US:001-201-796-7100 / Europe: +32 14 57 52 99
CHEMTREC Tel. No.US:001-800-424-9300 / Europe:001-703-527-3887

2. Hazard(s) identification

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

<table>
<thead>
<tr>
<th>Hazard</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corrosive to metals</td>
<td>Category 1</td>
</tr>
<tr>
<td>Skin Corrosion/irritation</td>
<td>Category 1 B</td>
</tr>
<tr>
<td>Serious Eye Damage/Eye Irritation</td>
<td>Category 1</td>
</tr>
<tr>
<td>Specific target organ toxicity (single exposure)</td>
<td>Category 3</td>
</tr>
<tr>
<td>Target Organs - Respiratory system.</td>
<td></td>
</tr>
</tbody>
</table>

Label Elements

Signal Word
Danger

Hazard Statements
May be corrosive to metals
 Causes severe skin burns and eye damage
May cause respiratory irritation
Precautionary Statements

Prevention
Do not breathe dust/fume/gas/mist/vapors/spray
Wash face, hands and any exposed skin thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection
Use only outdoors or in a well-ventilated area
Keep only in original container

Response
Immediately call a POISON CENTER or doctor/physician

Inhalation
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

Skin
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
Wash contaminated clothing before reuse

Eyes
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

Ingestion
IF SWALLOWED: Rinse mouth. DO NOT induce vomiting

Spills
Absorb spillage to prevent material damage

Storage
Store locked up
Store in a well-ventilated place. Keep container tightly closed
Store in corrosive resistant polypropylene container with a resistant inliner
Store in a dry place

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

Hazards not otherwise classified (HNOC)
Reacts violently with water

3. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum chloride</td>
<td>7446-70-0</td>
<td>&gt;95</td>
</tr>
</tbody>
</table>

4. First-aid measures

General Advice
Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

Eye Contact
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required. Keep eye wide open while rinsing.

Skin Contact
Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Call a physician immediately.

Inhalation
Move to fresh air. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Call a physician or Poison Control Center.
Aluminium chloride

Revision Date 25-Apr-2019

immediately. If not breathing, give artificial respiration.

Ingestion

Do not induce vomiting. Immediate medical attention is required. Drink plenty of water. Never give anything by mouth to an unconscious person.

Most important symptoms and effects

Causes burns by all exposure routes. Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation.

Notes to Physician

Treat symptomatically

5. Fire-fighting measures

Suitable Extinguishing Media

CO₂, dry chemical, dry sand, alcohol-resistant foam.

Unsuitable Extinguishing Media

DO NOT USE WATER

Flash Point

No information available

Method -

No information available

Autoignition Temperature

No information available

Explosion Limits

Upper

No data available

Lower

No data available

Sensitivity to Mechanical Impact

No information available

Sensitivity to Static Discharge

No information available

Specific Hazards Arising from the Chemical

The product causes burns of eyes, skin and mucous membranes. Reacts violently with water.

Hazardous Combustion Products

Hydrogen chloride Hydrogen chloride gas

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

NFPA

<table>
<thead>
<tr>
<th>Health</th>
<th>Flammability</th>
<th>Instability</th>
<th>Physical hazards</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>0</td>
<td>2</td>
<td>W</td>
</tr>
</tbody>
</table>

6. Accidental release measures

Personal Precautions

Evacuate personnel to safe areas. Use personal protective equipment. Avoid contact with skin, eyes and clothing.

Environmental Precautions

Do not flush into surface water or sanitary sewer system.

Methods for Containment and Clean Up

Sweep up or vacuum up spillage and collect in suitable container for disposal. Avoid dust formation. Do not expose spill to water.

7. Handling and storage

Handling

Use only under a chemical fume hood. Wear personal protective equipment. Do not get in eyes, on skin, or on clothing. Do not breathe dust. Do not ingest. Do not allow contact with water.

Storage

Keep containers tightly closed in a dry, cool and well-ventilated place. Corrosives area. Keep away from water. Do not store in metal containers.

8. Exposure controls / personal protection

Exposure Guidelines
# Aluminium chloride

## 9. Physical and chemical properties

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

### Legend

OSHA - Occupational Safety and Health Administration  
NIOSH IDLH: The National Institute for Occupational Safety and Health

### Engineering Measures
Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location.

### Personal Protective Equipment

- **Eye/face Protection**  
  Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

- **Skin and body protection**  
  Long sleeved clothing.

- **Respiratory Protection**  
  Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

### Hygiene Measures
Handle in accordance with good industrial hygiene and safety practice.

### Physical and chemical properties

- **Physical State**  
  Solid
- **Appearance**  
  Yellow
- **Odor**  
  Pungent
- **Odor Threshold**  
  No information available
- **pH**  
  2.4  
  100 g/L aq.sol
- **Melting Point/Range**  
  194 °C / 381.2 °F
- **Boiling Point/Range**  
  No information available
- **Flash Point**  
  No information available
- **Evaporation Rate**  
  Not applicable
- **Flammability (solid,gas)**  
  No information available
- **Flammability or explosive limits**  
  No data available
- **Vapor Pressure**  
  No information available
- **Vapor Density**  
  Not applicable
- **Specific Gravity**  
  2.440
- **Solubility**  
  Water reactive
- **Partition coefficient; n-octanol/water**  
  No data available
- **Autoignition Temperature**  
  No information available
- **Decomposition Temperature**  
  Not applicable
- **Viscosity**  
  Al Cl₃
- **Molecular Weight**  
  133.34

## 10. Stability and reactivity

- **Reactive Hazard**  
  Yes
- **Stability**  
  Stable under normal conditions.
- **Conditions to Avoid**  
  Excess heat. Incompatible products. Exposure to moist air or water. Exposure to moisture.
Incompatible Materials  Water, Strong oxidizing agents, Alkali metals, Strong bases, Metals

Hazardous Decomposition Products  Hydrogen chloride, Hydrogen chloride gas

Hazardous Polymerization  Hazardous polymerization does not occur.

Hazardous Reactions  None under normal processing. Reacts violently with water.

### 11. Toxicological information

#### Acute Toxicity

<table>
<thead>
<tr>
<th>Component</th>
<th>LD50 Oral (Rat)</th>
<th>LD50 Dermal (Rabbit)</th>
<th>LC50 Inhalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum chloride</td>
<td>LD50 = 3470 mg/kg</td>
<td>LD50 &gt; 2 g/kg</td>
<td>Not listed</td>
</tr>
</tbody>
</table>

Toxicologically Synergistic Products  No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation  Causes burns by all exposure routes

Sensitization  No information available

Carcinogenicity  The table below indicates whether each agency has listed any ingredient as a carcinogen.

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>IARC</th>
<th>NTP</th>
<th>ACGIH</th>
<th>OSHA</th>
<th>Mexico</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum chloride</td>
<td>7446-70-0</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
</tbody>
</table>

Mutagenic Effects  No information available

Reproductive Effects  No information available.

Developmental Effects  No information available.

Teratogenicity  No information available.

STOT - single exposure  Respiratory system

STOT - repeated exposure  None known

Aspiration hazard  No information available

Symptoms / effects, both acute and delayed  Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation

Endocrine Disruptor Information  No information available

Other Adverse Effects  The toxicological properties have not been fully investigated.

#### 12. Ecological information

Ecotoxicity  The product contains following substances which are hazardous for the environment. Contains a substance which is toxic to aquatic organisms. Reacts with water so no ecotoxicity data for the substance is available.

<table>
<thead>
<tr>
<th>Component</th>
<th>Freshwater Algae</th>
<th>Freshwater Fish</th>
<th>Microtox</th>
<th>Water Flea</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum chloride</td>
<td>Not listed</td>
<td>Gambusia affinis: LC50=27.1 mg/L 97h</td>
<td>Not listed</td>
<td>EC50: 3.9 mg/L 48h EC50: 27.3 mg/L 48h</td>
</tr>
</tbody>
</table>

Persistence and Degradability  Persistence is unlikely based on information available.

Bioaccumulation/ Accumulation  No information available.
Mobility
Is not likely mobile in the environment.

13. Disposal considerations

Waste Disposal Methods
Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. Transport information

DOT

<table>
<thead>
<tr>
<th>UN-No</th>
<th>UN1726</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proper Shipping Name</td>
<td>ALUMINUM CHLORIDE, ANHYDROUS</td>
</tr>
<tr>
<td>Hazard Class</td>
<td>8</td>
</tr>
<tr>
<td>Packing Group</td>
<td>II</td>
</tr>
</tbody>
</table>

TDG

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IATA

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IMDG/IMO

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<th>UN1726</th>
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<tr>
<td>Packing Group</td>
<td>II</td>
</tr>
</tbody>
</table>

15. Regulatory information

United States of America Inventory

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>TSCA</th>
<th>TSCA Inventory notification - Active/Inactive</th>
<th>TSCA - EPA Regulatory Flags</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum chloride</td>
<td>7446-70-0</td>
<td>X</td>
<td>ACTIVE</td>
<td>-</td>
</tr>
</tbody>
</table>

Legend:
TSCA - Toxic Substances Control Act, (40 CFR Part 710)
X - Listed
- - Not Listed

TSCA 12(b) - Notices of Export
Not applicable

International Inventories
Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Australia (AICS), China (IECSC), Korea (ECL).

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>DSL</th>
<th>NDSL</th>
<th>EINECS</th>
<th>PICCS</th>
<th>ENCS</th>
<th>AICS</th>
<th>IECSC</th>
<th>KECL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum chloride</td>
<td>7446-70-0</td>
<td>X</td>
<td>-</td>
<td>231-208-1</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>KE-01045</td>
</tr>
</tbody>
</table>

U.S. Federal Regulations

SARA 313
Not applicable

SARA 311/312 Hazard Categories
See section 2 for more information

CWA (Clean Water Act)
Not applicable
Aluminium chloride

Clean Air Act
Not applicable

OSHA - Occupational Safety and Health Administration
Not applicable

CERCLA
Not applicable

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

U.S. State Right-to-Know Regulations

<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 chloride</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>X</td>
</tr>
</tbody>
</table>

U.S. Department of Transportation
Reportable Quantity (RQ): N
DOT Marine Pollutant: N
DOT Severe Marine Pollutant: N

U.S. Department of Homeland Security
This product contains the following DHS chemicals:
Legend - STQs = Screening Threshold Quantities, APA = A placarded amount

<table>
<thead>
<tr>
<th>Component</th>
<th>DHS Chemical Facility Anti-Terrorism Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum chloride</td>
<td>APA</td>
</tr>
</tbody>
</table>

Other International Regulations

Mexico - Grade
No information available

16. Other information

Prepared By
Regulatory Affairs
Thermo Fisher Scientific
Email: EMSDS.RA@thermofisher.com

Creation Date
10-Sep-2010

Revision Date
25-Apr-2019

Print Date
25-Apr-2019

Revision Summary
This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

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 SDS