

### 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Aluminum chloride

Product Number : 563919  
Brand : Aldrich

Supplier : Sigma-Aldrich  
3050 Spruce Street  
SAINT LOUIS MO 63103  
USA

Telephone : +1 800-325-5832  
Fax : +1 800-325-5052  
Emergency Phone # (For both supplier and manufacturer) : (314) 776-6555

Preparation Information : Sigma-Aldrich Corporation  
Product Safety - Americas Region  
1-800-521-8956

### 2. HAZARDS IDENTIFICATION

#### Emergency Overview

##### OSHA Hazards

Target Organ Effect, Corrosive, Teratogen, Reproductive hazard, Water Reactive

##### Target Organs

Lungs

##### Other hazards which do not result in classification

Reacts violently with water.

##### GHS Classification

Acute toxicity, Dermal (Category 5)

Acute toxicity, Oral (Category 5)

Skin corrosion (Category 1A)

Serious eye damage (Category 1)

Acute aquatic toxicity (Category 1)

##### GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s)

H303 + H313

May be harmful if swallowed or in contact with skin.

H314

Causes severe skin burns and eye damage.

H400

Very toxic to aquatic life.

Precautionary statement(s)

P273

Avoid release to the environment.

P280

Wear protective gloves/ protective clothing/ eye protection/ face protection.

P305 + P351 + P338

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

P310

Immediately call a POISON CENTER or doctor/ physician.

**HMIS Classification**

Health hazard: 3  
Chronic Health Hazard: \*  
Flammability: 0  
Physical hazards: 2

**NFPA Rating**

Health hazard: 3  
Fire: 0  
Reactivity Hazard: 2

**Potential Health Effects**

**Inhalation** May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.  
**Skin** May be harmful if absorbed through skin. Causes skin burns.  
**Eyes** Causes eye burns.  
**Ingestion** May be harmful if swallowed.

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**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Formula :  $\text{AlCl}_3$   
Molecular Weight : 133.34 g/mol

Component	Concentration
<b>Aluminium chloride anhydrous</b>	
CAS-No. 7446-70-0	-
EC-No. 231-208-1	
Index-No. 013-003-00-7	

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**4. FIRST AID MEASURES****General advice**

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

**If inhaled**

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

**In case of skin contact**

Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.

**In case of eye contact**

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Continue rinsing eyes during transport to hospital.

**If swallowed**

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

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**5. FIREFIGHTING MEASURES****Conditions of flammability**

Not flammable or combustible.

**Suitable extinguishing media**

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

**Special protective equipment for firefighters**

Wear self contained breathing apparatus for fire fighting if necessary.

**Hazardous combustion products**

Hazardous decomposition products formed under fire conditions. - Aluminum oxide, Hydrogen chloride gas

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**6. ACCIDENTAL RELEASE MEASURES**

**Personal precautions**

Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

**Environmental precautions**

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

**Methods and materials for containment and cleaning up**

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

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**7. HANDLING AND STORAGE****Precautions for safe handling**

Avoid formation of dust and aerosols.

Provide appropriate exhaust ventilation at places where dust is formed.

**Conditions for safe storage**

Keep container tightly closed in a dry and well-ventilated place.

Store under inert gas. Vent periodically. Handle and open container with care. Keep in a dry place.

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**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

Contains no substances with occupational exposure limit values.

**Personal protective equipment****Respiratory protection**

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Hand protection**

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

**Eye protection**

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Skin and body protection**

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Hygiene measures**

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

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**9. PHYSICAL AND CHEMICAL PROPERTIES****Appearance**

Form	powder
Colour	light yellow

**Safety data**

pH	2.4 at 100 g/l at 20 °C (68 °F)
Melting point/freezing point	Melting point/range: 190 °C (374 °F) - lit.
Boiling point	187.7 °C (369.9 °F) at 1,003 hPa (752 mmHg)

Flash point	not applicable
Ignition temperature	no data available
Autoignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Vapour pressure	1.33 hPa (1.00 mmHg) at 100 °C (212 °F) < 1.33 hPa (< 1.00 mmHg) at 20 °C (68 °F)
Density	2.4400 g/cm <sup>3</sup>
Water solubility	soluble
Partition coefficient: n-octanol/water	no data available
Relative vapour density	no data available
Odour	no data available
Odour Threshold	no data available
Evaporation rate	no data available

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## 10. STABILITY AND REACTIVITY

### Chemical stability

Stable under recommended storage conditions.

### Possibility of hazardous reactions

no data available

### Conditions to avoid

Avoid moisture.

### Materials to avoid

Strong oxidizing agents, Alcohols, Mixtures of nitrobenzene and aluminum chloride are thermally unstable and may lead to explosive decomposition due to a multi-step decomposition reaction occurring above 90 degrees C, which self-accelerates with high exothermicity producing azo- and azoxypolymers.

### Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Aluminum oxide, Hydrogen chloride gas  
Reacts with water to form: - Hydrogen chloride gas

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## 11. TOXICOLOGICAL INFORMATION

### Acute toxicity

#### Oral LD50

LD50 Oral - rat - 3,450 mg/kg

#### Inhalation LC50

no data available

#### Dermal LD50

LD50 Dermal - rabbit - > 2,000 mg/kg

#### Other information on acute toxicity

no data available

### Skin corrosion/irritation

Skin - Human - Severe skin irritation

### Serious eye damage/eye irritation

Eyes - Human - Severe eye irritation

### Respiratory or skin sensitization

Prolonged or repeated exposure may cause allergic reactions in certain sensitive individuals.

### **Germ cell mutagenicity**

no data available

### **Carcinogenicity**

- IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
- ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
- NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
- OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

### **Reproductive toxicity**

Overexposure may cause reproductive disorder(s) based on tests with laboratory animals.

### **Teratogenicity**

Laboratory experiments have shown teratogenic effects.

### **Specific target organ toxicity - single exposure (Globally Harmonized System)**

no data available

### **Specific target organ toxicity - repeated exposure (Globally Harmonized System)**

no data available

### **Aspiration hazard**

no data available

### **Potential health effects**

- |                   |   |
|-------------------|---|
| <b>Inhalation</b> | May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract. |
| <b>Ingestion</b>  | May be harmful if swallowed.  |
| <b>Skin</b>       | May be harmful if absorbed through skin. Causes skin burns.   |
| <b>Eyes</b>       | Causes eye burns.   |

### **Signs and Symptoms of Exposure**

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea, Vomiting, prolonged or repeated exposure can cause:, Damage to the lungs.

### **Synergistic effects**

no data available

### **Additional Information**

RTECS: BD0525000

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## **12. ECOLOGICAL INFORMATION**

### **Toxicity**

- |   |  |
|---|--|
| Toxicity to fish                                    | LC50 - Carassius auratus (goldfish) - 0.15 mg/l - 7 d      |
|   | LC50 - Oncorhynchus mykiss (rainbow trout) - 7 mg/l - 96 h |
| Toxicity to daphnia and other aquatic invertebrates | EC50 - Daphnia magna (Water flea) - 3.9 mg/l - 48 h        |

Toxicity to algae EC50 - Pseudokirchneriella subcapitata (green algae) - 0.57 mg/l - 96 h

**Persistence and degradability**

no data available

**Bioaccumulative potential**

no data available

**Mobility in soil**

no data available

**PBT and vPvB assessment**

no data available

**Other adverse effects**

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Very toxic to aquatic life.

no data available

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**13. DISPOSAL CONSIDERATIONS**

**Product**

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

**Contaminated packaging**

Dispose of as unused product.

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**14. TRANSPORT INFORMATION**

**DOT (US)**

UN number: 1726 Class: 8 Packing group: II

Proper shipping name: Aluminum chloride, anhydrous

Marine pollutant: No

Poison Inhalation Hazard: No

**IMDG**

UN number: 1726 Class: 8 Packing group: II EMS-No: F-A, S-B

Proper shipping name: ALUMINIUM CHLORIDE, ANHYDROUS

Marine pollutant: No

**IATA**

UN number: 1726 Class: 8 Packing group: II

Proper shipping name: Aluminium chloride, anhydrous

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**15. REGULATORY INFORMATION**

**OSHA Hazards**

Target Organ Effect, Corrosive, Teratogen, Reproductive hazard, Water Reactive

**SARA 302 Components**

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**SARA 313 Components**

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**SARA 311/312 Hazards**

Acute Health Hazard, Chronic Health Hazard

**Massachusetts Right To Know Components**

No components are subject to the Massachusetts Right to Know Act.

**Pennsylvania Right To Know Components**

CAS-No.

Revision Date

Aluminium chloride anhydrous

7446-70-0

1993-04-24

**New Jersey Right To Know Components**

Aluminium chloride anhydrous

CAS-No.  
7446-70-0

Revision Date  
1993-04-24

**California Prop. 65 Components**

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

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**16. OTHER INFORMATION**

**Further information**

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