

# Material Safety Data Sheet

<b>Product name</b>	<b>Aluminum chloride</b>
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## 1. Identification of the substance/mixture and of the company/undertaking

1.1. Product name	Aluminum chloride
1.2. CAS-No.	7446-70-0
1.3. Relevant identified uses of the substance or mixture and uses advised against	
Identified uses	Laboratory chemicals, Synthesis of substances
1.4. Details of the supplier of the safety data sheet	
Company	Glory Global CO.,LTD
Address	C-208, 10, Nowon-ro 15-gil, Nowon-gu, Seoul, Korea
Emergency Phone	+82 2 6223 0862

## 2. Hazards identification

2.1. Classification of the substance or mixture GHS	- Skin corrosion (Category 1B), H314
Classification in accordance with 29 CFR 1910 (OSHA HCS)	- Serious eye damage (Category 1), H318
	- For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2. GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s) H314

Causes severe skin burns and eye damage.

Precautionary statement(s) P260

Do not breathe dust or mist.

P264

Wash skin thoroughly after handling.

P280

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

P301 + P330 + P331

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P303 + P361 + P353

IF ON SKIN (or hair): Take off immediately all contaminated clothing.

P304 + P340 + P310

Rinse skin with water/shower.

P305 + P351 + P338 + P310

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.

P363

IF IN EYES: Rinse cautiously with water for several minutes.

P405

Remove contact lenses, if present and easy to do.

P501

Continue rinsing. Immediately call a POISON CENTER/doctor.

Wash contaminated clothing before reuse.

Store locked up.

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

2.4. Hazards not otherwise classified (HNOC) or not covered by GHS

Reacts violently with water.

## 3. Composition/information on ingredients

3.1. Substances

Formula	AlCl <sub>3</sub>
Molecular weight	133.34 g/mol
CAS No	7446-70-0
EC-No.	231-208-1

3.2. Classification of components according to GHS

Component	Classification	Concentration
Aluminium chloride anhydrous		
	Skin Corr. 1B; Eye Dam. 1; H314, H318	≤100%

Additional Information

For the full text of the H-Statements mentioned in this Section, see Section 16.

## 4. First aid measures

4.1. Description of first aid measures

General advice	<ul style="list-style-type: none"> <li>- Consult a physician. Show this safety data sheet to the doctor in attendance.</li> <li>- Move out of dangerous area.</li> </ul>
If inhaled	<ul style="list-style-type: none"> <li>- If breathed in, move person into fresh air. If not breathing, give artificial respiration.</li> <li>- Consult a physician.</li> </ul>
In case of skin contact	<ul style="list-style-type: none"> <li>- Take off contaminated clothing and shoes immediately.</li> <li>- Wash off with soap and plenty of water. Consult a physician.</li> </ul>
In case of eye contact	<ul style="list-style-type: none"> <li>- Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.</li> <li>- Continue rinsing eyes during transport to hospital.</li> </ul>
If swallowed	<ul style="list-style-type: none"> <li>- Do NOT induce vomiting. Never give anything by mouth to an unconscious person.</li> <li>- Rinse mouth with water. Consult a physician.</li> </ul>
4.2. Most important symptoms and effects, both acute and delayed	<ul style="list-style-type: none"> <li>- The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11</li> </ul>
4.3. Indication of any immediate medical attention and special treatment needed	<ul style="list-style-type: none"> <li>- No data available</li> </ul>

## 5. Firefighting measures

5.1. Extinguishing media	
Suitable extinguishing media	<ul style="list-style-type: none"> <li>- Dry powder Dry sand</li> </ul>
Unsuitable extinguishing media	<ul style="list-style-type: none"> <li>- Do NOT use water jet.</li> </ul>
5.2. Special hazards arising from the substance or mixture	<ul style="list-style-type: none"> <li>- Hydrogen chloride gas, Aluminum oxide</li> </ul>
5.3. Special protective equipment and precautions for fire fighters	<ul style="list-style-type: none"> <li>- Wear full protective clothing and self-contained breathing apparatus.</li> </ul>
5.4. Further information	<ul style="list-style-type: none"> <li>- No data available</li> </ul>

## 6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures	<ul style="list-style-type: none"> <li>- Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.</li> <li>- For personal protection see section 8.</li> </ul>
6.2. Environmental precautions	<ul style="list-style-type: none"> <li>- Do not let product enter drains.</li> </ul>
6.3. Methods and materials for containment and cleaning up	<ul style="list-style-type: none"> <li>- Pick up and arrange disposal without creating dust. Sweep up and shovel. Do not flush with water. Keep in suitable, closed containers for disposal.</li> </ul>
6.4. Reference to other sections	<ul style="list-style-type: none"> <li>- For disposal see section 13.</li> </ul>

## 7. Handling and storage

7.1. Precautions for safe handling	<ul style="list-style-type: none"> <li>- 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.</li> <li>- Provide appropriate exhaust ventilation at places where dust is formed.</li> <li>- For precautions see section 2.2.</li> </ul>
7.2. Conditions for safe storage, including any incompatibilities	<ul style="list-style-type: none"> <li>- Keep container tightly closed in a dry and well-ventilated place.</li> <li>- Never allow product to get in contact with water during storage.</li> <li>- Store under inert gas. Vent periodically. Handle and open container with care. Reacts violently with water. Keep in a dry place.</li> <li>- Storage class (TRGS 510): 8A: Combustible, corrosive hazardous materials</li> </ul>
7.3. Specific end use(s)	<ul style="list-style-type: none"> <li>- Apart from the uses mentioned in section 1.2 no other specific uses are stipulated</li> </ul>

## 8. Exposure controls/personal protection

### 8.1. Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Aluminium chloride anhydrous	7446-70-0	TWA	2 mg/m <sup>2</sup>	USA. NIOSH Recommended Exposure Limits
		PEL	2 mg/m <sup>3</sup>	California permissible exposure limits for chemical contaminants (Title 8, Article 107)

### 8.2. Exposure controls

Appropriate engineering controls

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

Personal protective equipment

a) Eye/face 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).

- b) Skin 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.
- c) Body Protection – Complete suit protecting against chemicals, Flame retardant protective clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
- d) Respiratory protection – Where risk assessment shows air-purifying respirators are appropriate use a fullface 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).
- e) Control of environmental exposure – Do not let product enter drains.

## 9. Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Appearance	Form: powder Colour: light yellow
Odour	stinging
Odour Threshold	No data available
pH	2.4 at 100 g/l at 20 °C (68 °F)
Melting / freezing point	Melting point/range: 190 °C (374 °F) – lit.
Initial Boiling Point and Boiling Range	No data available
Flash point	No data available
Evaporation rate	No data available
Flammability (solid, gas)	No data available
Upper/lower flammability or explosive limits	No data available
Vapour pressure	1 hPa at 20 °C (68 °F)
Vapour density	No data available
Relative Density	1.31 g/cm <sup>3</sup> at 200 °C (392 °F) – liquid 2.44 g/cm <sup>3</sup> at 20 °C (68 °F)
Water solubility	450 g/l at 20 °C (68 °F) – (decomposition)
n-octanol/water partition coefficient (log Pow)	Not applicable for inorganic substances
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Viscosity	No data available
Explosive properties	No data available
Oxidizing properties	No data available
9.2. Other safety information	No data available

## 10. Stability and reactivity

- 10.1. Reactivity – Reacts violently with water.
- 10.2. Chemical stability – Stable under recommended storage conditions.
- 10.3. Possibility of hazardous reactions – Reacts violently with water.
- 10.4. Conditions to avoid – Exposure to moisture
- 10.5. Incompatible materials – Strong oxidizing agents
- 10.6. Hazardous decomposition products – Hazardous decomposition products formed under fire conditions.  
: Hydrogen chloride gas, Aluminum oxide  
– Other decomposition products  
: No data available  
– In the event of fire: see section 5

## 11. Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity	LD50 Oral – Rat – 3,450 mg/kg Remarks: (RTECS) Inhalation: No data available LD50 Dermal – Rabbit – > 2,000 mg/kg Remarks: (RTECS) No data available
Skin corrosion/irritation	Skin – Human Result: Causes burns. Remarks: (IUCLID) Skin – In vitro study Result: Corrosive (OECD Test Guideline 435)

Serious eye damage/eye irritation	Causes serious eye damage. Eyes – Human Result: Causes burns. Remarks: (IUCLID)
Respiratory or skin sensitisation	Patch test: – Human Result: negative Remarks: (IUCLID) Sensitisation test: – Guinea pig Result: negative (OECD Test Guideline 406)
Germ cell mutagenicity	No data available OECD Test Guideline 474 Rat – male – Bone marrow Result: negative (in analogy to similar products)
<b>11.2. Carcinogenicity</b>	
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.
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 on OSHA's list of regulated carcinogens.
11.3. Reproductive toxicity	No data available
11.4. Specific target organ toxicity – single exposure	No data available
11.5. Specific target organ toxicity – repeated exposure	No data available
11.6. Aspiration hazard	No data available
11.7. Additional Information	Repeated dose toxicity – Rat – male and female – Oral – No observed adverse effect level – 1,000 mg/kg RTECS: BD0525000
<b>12. Ecological information</b>	
12.1. Toxicity	– Toxicity to bacteria
12.2. Persistence and degradability	– Not applicable for inorganic substances
12.3. Bioaccumulative potential	– No data available
12.4. Mobility in soil	– No data available
12.5. Results of PBT and vPvB assessment	– PBT/vPvB assessment not available as chemical safety assessment not required/not conducted
12.6 Other adverse effects	– No data available
<b>13. Disposal considerations</b>	
13.1 Waste treatment methods	
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.
<b>14. Transport information</b>	
14.1. DOT (US)	UN number: 1726 Class: 8 Packing group: II Proper shipping name: Aluminum chloride, anhydrous Reportable Quantity (RQ): Poison Inhalation Hazard: No
14.2. IMDG	UN number: 1726 Class: 8 Packing group: II EMS-No: F-A, S-B Proper shipping name: ALUMINIUM CHLORIDE, ANHYDROUS Marine pollutant : yes
14.3. IATA (Country variations may apply)	UN number: 1726 Class: 8 Packing group: II Proper shipping name: Aluminium chloride, anhydrous
<b>15. Regulatory information</b>	
15.1. SARA 302 Components	No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

15.2. SARA 313 Components

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.

15.3. SARA 311/312 Hazards

Acute Health Hazard, Chronic Health Hazard

15.4. Massachusetts Right To Know Components

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

15.5. Pennsylvania Right To Know Components

- Aluminium chloride anhydrous
- CAS-No.: 7446-70-0
- Revision Date: 1993-04-24

16. Other information

16.1. Further information

- Always work safely around open hatches on bulk tanks. The low density makes flotation difficult for immersed person.

