

# Material Safety Data Sheet

Aluminum chloride hexahydrate

ACC# 00905

194541

## Section 1 - Chemical Product and Company Identification

**MSDS Name:** Aluminum chloride hexahydrate

**Catalog Numbers:** S70402, S704021, A573-212, A573-500, A576-12, A576-212, A576-50, A576-500, NC9254425, NC9414553, XXA576PP12KG

**Synonyms:** Trichloroaluminum hexahydrate; Aluminum (III) chloride hexahydrate.

**Company Identification:**

Fisher Scientific  
1 Reagent Lane  
Fair Lawn, NJ 07410

**For information, call:** 201-796-7100

**Emergency Number:** 201-796-7100

**For CHEMTREC assistance, call:** 800-424-9300

**For International CHEMTREC assistance, call:** 703-527-3887

## Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
7784-13-6	Aluminum chloride hexahydrate	100	unlisted

## Section 3 - Hazards Identification

### EMERGENCY OVERVIEW

Appearance: white solid.

**Danger!** Causes eye and skin burns. Water-reactive. Causes digestive and respiratory tract burns.

**Target Organs:** Eyes, skin, mucous membranes.

**Potential Health Effects**

**Eye:** Causes eye burns.

**Skin:** Causes skin burns.

**Ingestion:** Causes gastrointestinal tract burns. Aluminum may be readily absorbed from the gastrointestinal tract.

**Inhalation:** Causes chemical burns to the respiratory tract.

**Chronic:** Effects may be delayed.

## Section 4 - First Aid Measures

**Eyes:** In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical aid immediately.

**Skin:** In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid immediately. Wash clothing before reuse.

**Ingestion:** If swallowed, do NOT induce vomiting. Get medical aid immediately. If victim is fully conscious, give a cupful of water. Never give anything by mouth to an unconscious person.

**Inhalation:** If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult,

give oxygen. Get medical aid.

**Notes to Physician:** Treat symptomatically and supportively.

## Section 5 - Fire Fighting Measures

**General Information:** As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear.

**Extinguishing Media:** Substance is noncombustible; use agent most appropriate to extinguish surrounding fire.

**Flash Point:** Not applicable.

**Autoignition Temperature:** Not available.

**Explosion Limits, Lower:** Not available.

**Upper:** Not available.

**NFPA Rating:** (estimated) Health: 3; Flammability: 0; Instability: 2; Special Hazard: -W-

## Section 6 - Accidental Release Measures

**General Information:** Use proper personal protective equipment as indicated in Section 8.

**Spills/Leaks:** Vacuum or sweep up material and place into a suitable disposal container. Clean up spills immediately, observing precautions in the Protective Equipment section. Avoid generating dusty conditions. Provide ventilation.

## Section 7 - Handling and Storage

**Handling:** Use only in a well-ventilated area. Do not allow water to get into the container because of violent reaction. Minimize dust generation and accumulation. Do not breathe dust, mist, or vapor. Do not get in eyes, on skin, or on clothing. Keep container tightly closed. Do not ingest or inhale. Discard contaminated shoes.

**Storage:** Keep container closed when not in use. Store in a cool, dry, well-ventilated area away from incompatible substances. Keep away from water. Corrosives area. Keep away from strong bases. Separate from organic materials.

## Section 8 - Exposure Controls, Personal Protection

**Engineering Controls:** Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

### Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Aluminum chloride hexahydrate	2 mg/m <sup>3</sup> TWA (as Al) (listed under Aluminum, soluble salts).	2 mg/m <sup>3</sup> TWA (as Al) (listed under Aluminum, soluble salts).	none listed
Aluminum chloride, anhydrous	2 mg/m <sup>3</sup> TWA (as Al) (listed under Aluminum, soluble salts).	2 mg/m <sup>3</sup> TWA (as Al) (listed under Aluminum, soluble salts).	none listed

**OSHA Vacated PELs:** Aluminum chloride hexahydrate: No OSHA Vacated PELs are listed for this chemical. Aluminum chloride, anhydrous: No OSHA Vacated PELs are listed for this chemical.

### Personal Protective Equipment

**Eyes:** 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:** Wear appropriate protective gloves to prevent skin exposure.

**Clothing:** Wear appropriate protective clothing to prevent skin exposure.

**Respirators:** A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

## Section 9 - Physical and Chemical Properties

**Physical State:** Solid

**Appearance:** white

**Odor:** pungent odor - odorless

**pH:** Acidic in solution.

**Vapor Pressure:** Not available.

**Vapor Density:** Not available.

**Evaporation Rate:** Not available.

**Viscosity:** Not available.

**Boiling Point:** Not available.

**Freezing/Melting Point:** 181 deg C

**Decomposition Temperature:** 100 deg C

**Solubility:** Soluble.

**Specific Gravity/Density:** 2.39

**Molecular Formula:**  $\text{AlCl}_3 \cdot 6\text{H}_2\text{O}$

**Molecular Weight:** 241.43

## Section 10 - Stability and Reactivity

**Chemical Stability:** Stable at room temperature in closed containers under normal storage and handling conditions.

**Conditions to Avoid:** Dust generation, contact with water, excess heat.

**Incompatibilities with Other Materials:** Water, organic materials, Aluminum chloride reacts violently with water producing hydrochloric acid and heat..

**Hazardous Decomposition Products:** Hydrogen chloride, irritating and toxic fumes and gases, aluminum oxide.

**Hazardous Polymerization:** Has not been reported.

## Section 11 - Toxicological Information

**RTECS#:**

**CAS# 7784-13-6:** BD0530000

**CAS# 7446-70-0:** BD0525000

**LD50/LC50:**

**CAS# 7784-13-6:**

Oral, mouse: LD50 = 1990 mg/kg;

Oral, rat: LD50 = 3311 mg/kg;

**CAS# 7446-70-0:**

Draize test, rabbit, skin: 10%/6D (Intermittent);

Oral, mouse: LD50 = 1130 mg/kg;

Oral, rat: LD50 = 3450 mg/kg;

Skin, rabbit: LD50 = >2 gm/kg;

**Carcinogenicity:**

CAS# 7784-13-6: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

CAS# 7446-70-0: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

**Epidemiology:** Several mortality studies of aluminum reduction plant workers have showed no excess deaths due to organic brain disorders of the dementia type.**Teratogenicity:** No information found**Reproductive Effects:** No information found**Mutagenicity:** No information found**Neurotoxicity:** No information found**Other Studies:**

<b>Section 12 - Ecological Information</b>
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**Ecotoxicity:** No data available. No information available.**Environmental:** Aluminum by be absorbed by plant life.**Physical:** No information available.**Other:** No information available.

<b>Section 13 - Disposal Considerations</b>
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Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

**RCRA P-Series:** None listed.**RCRA U-Series:** None listed.

<b>Section 14 - Transport Information</b>
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	US DOT	Canada TDG
<b>Shipping Name:</b>	ALUMINUM CHLORIDE, ANHYDROUS	ALUMINUM CHLORIDE, ANHYDROUS (Aluminum chloride hexahydrate)
<b>Hazard Class:</b>	8	8
<b>UN Number:</b>	UN1726	UN1726
<b>Packing Group:</b>	II	II

<b>Section 15 - Regulatory Information</b>
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**US FEDERAL****TSCA**

CAS# 7784-13-6 is not on the TSCA Inventory because it is a hydrate. It is considered to be listed if the CAS number for the anhydrous form is on the inventory (40CFR720.3(u)(2)).

CAS# 7446-70-0 is listed on the TSCA inventory.

**Health & Safety Reporting List**

None of the chemicals are on the Health & Safety Reporting List.

**Chemical Test Rules**

None of the chemicals in this product are under a Chemical Test Rule.

**Section 12b**

None of the chemicals are listed under TSCA Section 12b.

#### **TSCA Significant New Use Rule**

None of the chemicals in this material have a SNUR under TSCA.

#### **CERCLA Hazardous Substances and corresponding RQs**

None of the chemicals in this material have an RQ.

#### **SARA Section 302 Extremely Hazardous Substances**

None of the chemicals in this product have a TPQ.

#### **SARA Codes**

CAS # 7784-13-6: immediate, delayed.

CAS # 7446-70-0: immediate, delayed, reactive.

**Section 313** No chemicals are reportable under Section 313.

#### **Clean Air Act:**

This material does not contain any hazardous air pollutants.

This material does not contain any Class 1 Ozone depletors.

This material does not contain any Class 2 Ozone depletors.

#### **Clean Water Act:**

None of the chemicals in this product are listed as Hazardous Substances under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

#### **OSHA:**

None of the chemicals in this product are considered highly hazardous by OSHA.

#### **STATE**

CAS# 7784-13-6 can be found on the following state right to know lists: California, (listed as Aluminum, soluble salts), Pennsylvania, (listed as Aluminum, soluble salts), Minnesota, (listed as Aluminum, soluble salts).

CAS# 7446-70-0 can be found on the following state right to know lists: California, (listed as Aluminum, soluble salts), New Jersey, Pennsylvania, Minnesota, (listed as Aluminum, soluble salts), Massachusetts.

#### **California Prop 65**

California No Significant Risk Level: None of the chemicals in this product are listed.

### **European/International Regulations**

#### **European Labeling in Accordance with EC Directives**

#### **Hazard Symbols:**

C

#### **Risk Phrases:**

R 34 Causes burns.

#### **Safety Phrases:**

S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

#### **WGK (Water Danger/Protection)**

CAS# 7784-13-6: 1

CAS# 7446-70-0: 1

#### **Canada - DSL/NDSL**

CAS# 7446-70-0 is listed on Canada's DSL List.

#### **Canada - WHMIS**

This product has a WHMIS classification of E.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

#### **Canadian Ingredient Disclosure List**

CAS# 7784-13-6 (listed as Aluminum, soluble salts) is listed on the Canadian Ingredient Disclosure List.

CAS# 7446-70-0 is listed on the Canadian Ingredient Disclosure List.

## Section 16 - Additional Information

**MSDS Creation Date:** 12/10/1998

**Revision #7 Date:** 3/15/2007

*The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.*