

Safety Data Sheet

acc. to OSHA HCS

Printing date 03/31/2023

Reviewed on 03/31/2023

1 Identification

- **Product identifier**
- **Formule moléculaire** $AlCl_3$
- **Trade name:** Aluminium chloride
- **Article number:** CH0119
- **CAS Number:**
7446-70-0
- **EC number:**
231-208-1
- **Index number:**
013-003-00-7
- **Application of the substance / the mixture** Chemicals products for laboratory
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
CARLO ERBA REAGENTS
Chaussée du Vexin
Parc d'Affaires des Portes - BP616
27106 VAL DE REUIL Cedex
Téléphone: +33 (0)2 32 09 20 00
Télécopie: +33 (0)2 32 09 20 20
- **Information department:**
Q.A / Normative
email: MSDS_CER-SDS@cer.dgroup.it
- **Emergency telephone number:**
US 911
CHEMTREC 1-800-424-9300 (Staffed 24/7)
American Association of Poison Control Centers 1-800-222-1222 (Staffed 24/7)

2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS05 Corrosion

Causes severe skin burns and eye damage.

- **Label elements**
- **GHS label elements**
The substance is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**



GHS05

- **Signal word** *Danger*
- **Hazard statements**
Causes severe skin burns and eye damage.
- **Precautionary statements**
Wear protective gloves / eye protection / face protection.
If swallowed: Rinse mouth. Do NOT induce vomiting.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.

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Immediately call a poison center/doctor.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

- **Classification system:**
- **NFPA ratings (scale 0-4)**



- **Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

3 Composition/information on ingredients

- **Chemical characterization: Substances**
- **CAS No. Description**
CAS: 7446-70-0 Aluminium chloride, anhydrous
- **Identification number(s)**
- **EC number:** 231-208-1
- **Index number:** 013-003-00-7

4 First-aid measures

- **Description of first aid measures**
- **General information:** Immediately remove any clothing soiled by the product.
- **After inhalation:** In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:**
Immediately wash with water and soap and rinse thoroughly.
Seek immediate medical advice.
If skin irritation continues, consult a doctor.
- **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing:**
Drink copious amounts of water and provide fresh air. Immediately call a doctor.
Call immediately a doctor.
Rinse out mouth and then drink plenty of water.
- **Information for doctor:** Show the doctor this Material Safety Data Sheet.
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**
CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
Use fire fighting measures that suit the environment.
- **For safety reasons unsuitable extinguishing agents:** Water with full jet

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- **Special hazards arising from the substance or mixture** Hydrogen chloride (HCl)
- **Advice for firefighters**
- **Protective equipment:** Do not inhale explosion gases or combustion gases.
- **Additional information** Cool endangered receptacles with water spray.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
Ensure adequate ventilation
- **Environmental precautions:**
Do not allow to penetrate the ground/soil.
Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**
Pick up mechanically.
Ensure adequate ventilation.
Use neutralizing agent.
Dispose contaminated material as waste according to section 13.
Provide suction extractors if dust is formed.
- **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.
- **Protective Action Criteria for Chemicals**
 - PAC-1: 30 mg/m³
 - PAC-2: 60 mg/m³
 - PAC-3: 360 mg/m³

7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
Thorough dedusting.
Prevent formation of dust.
Provide suction extractors if dust is formed.
When diluting, always stir the product into standing water, not water to product.
- **Information about protection against explosions and fires:** The product is not flammable.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:**
Use polyolefine receptacles.
Unsuitable material for receptacle: steel.
Use polyolefine lining in receptacles.
Store in a well-ventilated place. Keep container tightly closed.
Use only receptacles specifically permitted for this substance/product.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** None.
- **Specific end use(s)** No further relevant information available.

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8 Exposure controls/personal protection

- *Additional information about design of technical systems: No further data; see section 7.*
- **Control parameters**

· **Components with limit values that require monitoring at the workplace:**

CAS: 7446-70-0 Aluminium chloride, anhydrous

REL	Long-term value: 2 mg/m ³ as Al
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- *Additional information: The lists that were valid during the creation were used as basis.*

- **Exposure controls**

- **Personal protective equipment:**

- **General protective and hygienic measures:**

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Avoid contact with the eyes and skin.

- **Protection of hands:**

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation



Protective gloves

Rubber gloves

- **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

Rubber gloves

PVC or PE gloves

- **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

- **Eye protection:**



Tightly sealed goggles

- **Limitation and supervision of exposure into the environment**

In case of unintended release of the product: See section 6 of the Safety Data Sheet.

9 Physical and chemical properties

- **Information on basic physical and chemical properties**

General Information 133.34 g

- **Appearance:**

Form: Powder

Color: Yellowish

- **Odor:** Like chlorine

- **Odor threshold:** Not determined.

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· pH-value:	Not applicable.
· Change in condition	
Melting point/Melting range:	193 °C (379.4 °F)
Boiling point/Boiling range:	180.2 °C (356.4 °F)
· Flash point:	Not applicable.
· Flammability (solid, gaseous):	Product is not flammable.
· Decomposition temperature:	Not determined.
· Ignition temperature:	Not determined.
· Danger of explosion:	Product does not present an explosion hazard.
· Explosion limits:	
Lower:	Not determined.
Upper:	Not determined.
· Vapor pressure at 20 °C (68 °F):	0.00003 hPa (0 mm Hg)
· Vapor pressure (2) at 100 °C (212 °F):	1 hPa (0.8 mm Hg)
· Density at 20 °C (68 °F):	2.44 g/cm ³ (20.3618 lbs/gal)
· Relative density	Not determined.
· Vapor density	Not applicable.
· Evaporation rate	Not applicable.
· Solubility in / Miscibility with	
Water at 20 °C (68 °F):	450 g/l
· organic solvents:	Insoluble
· chlorinated hydrocarbons:	Soluble in trichloromethane
· Partition coefficient (n-octanol/water):	Not determined.
· Viscosity:	
Dynamic:	Not applicable.
Kinematic:	Not applicable.
· Other information	No further relevant information available.

10 Stability and reactivity

- **Reactivity** See 10.3
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions**
Contact with water releases irritant gases.
Reacts with alcohols, amines, aqueous acids and alkalis.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:**
Hydrogen chloride (HCl)
Aluminum Oxide

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

 · **LD/LC50 values that are relevant for classification:**

Oral	LD50	3,450 mg/kg (rat)
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- **Primary irritant effect:**
- **on the skin:** Caustic effect on skin and mucous membranes.
- **on the eye:** Strong caustic effect.
- **Sensitization:** No sensitizing effects known.
- **Other information (about experimental toxicology):** No further relevant information available.
- **Additional toxicological information:**
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.
- **Carcinogenic categories**
- **IARC (International Agency for Research on Cancer)** Substance is not listed.
- **NTP (National Toxicology Program)** Substance is not listed.
- **OSHA-Ca (Occupational Safety & Health Administration)** Substance is not listed.

12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Other information:** No available data.
- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**
Water hazard class 1 (Assessment by list): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
Must not reach bodies of water or drainage ditch undiluted or unneutralized.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
Contact waste processors for recycling information.
- **Uncleaned packagings:**
- **Recommendation:**
Disposal must be made according to official regulations.
Packagings that cannot be cleansed are to be disposed of in the same manner as the product.
Chemical treatment of contaminated water.

14 Transport information

- **UN-Number**
- **DOT, IMDG, IATA** UN1726

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· UN proper shipping name	
· DOT	Aluminum chloride, anhydrous
· IMDG	ALUMINIUM CHLORIDE, ANHYDROUS
· IATA	Aluminium chloride, anhydrous

· Transport hazard class(es)	
· DOT	



· Class	8 Corrosive substances
· Label	8

· IMDG, IATA	
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· Class	8 Corrosive substances
· Label	8

· Packing group	
· DOT, IMDG, IATA	II

· Environmental hazards:	
· Marine pollutant:	No

· Special precautions for user	Warning: Corrosive substances
· Hazard identification number (Kemler code):	80
· EMS Number:	F-A,S-B
· Segregation groups	(SGG1) Acids
· Stowage Category	A
· Stowage Code	SW2 Clear of living quarters.
· Segregation Code	SG36 Stow "separated from" SGG18-alkalis. SG49 Stow "separated from" SGG6-cyanides

· Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.
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· Transport/Additional information:	
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· DOT	
· Remarks:	Lösung: UN 2581, EmS 8-06;

· IMDG	
· Limited quantities (LQ)	1 kg
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 500 g

· UN "Model Regulation":	UN 1726 ALUMINIUM CHLORIDE, ANHYDROUS, 8, II
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15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **SARA Section 355 (extremely hazardous substances)** Substance is not listed.
- **SARA Section 313 (specific toxic chemical listings)** Substance is not listed.
- **TSCA (Toxic Substances Control Act) ACTIVE**
- **Hazardous Air Pollutants** Substance is not listed.
- **Prop 65 - Chemicals known to cause cancer** Substance is not listed.
- **Carcinogenicity categories**
- **EPA (Environmental Protection Agency)** Substance is not listed.
- **TLV (Threshold Limit Value)** Substance is not listed.
- **MAK (German Maximum Workplace Concentration)** Substance is not listed.
- **NIOSH-Ca (National Institute for Occupational Safety and Health)** Substance is not listed.
- **National regulations:**
- **Water hazard class:** Water hazard class 1 (Assessment by list): slightly hazardous for water.
- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Department issuing SDS:** Q.A / Normative
- **Date of preparation / last revision** 03/31/2023
- **Abbreviations and acronyms:**
 - RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
 - ICAO: International Civil Aviation Organisation
 - ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)
 - IMDG: International Maritime Code for Dangerous Goods
 - DOT: US Department of Transportation
 - IATA: International Air Transport Association
 - EINECS: European Inventory of Existing Commercial Chemical Substances
 - CAS: Chemical Abstracts Service (division of the American Chemical Society)
 - NFPA: National Fire Protection Association (USA)
 - LC50: Lethal concentration, 50 percent
 - LD50: Lethal dose, 50 percent
 - PBT: Persistent, Bioaccumulative and Toxic
 - vPvB: very Persistent and very Bioaccumulative
 - NIOSH: National Institute for Occupational Safety
 - OSHA: Occupational Safety & Health
 - TLV: Threshold Limit Value
 - PEL: Permissible Exposure Limit
 - REL: Recommended Exposure Limit
 - IMO: International Maritime Organization
 - Skin Corrosion 1B: Skin corrosion/irritation – Category 1B
- **Sources**
 - Globally Harmonized System, GHS
 - ADR/RID, IMDG, IATA
 - PubChem: an open chemistry database at the National Institutes of Health (NIH)
 - ECHA: European Chemicals Agency
- *** Data compared to the previous version altered.**