

## Chemical Safety Data Sheet MSDS / SDS

## Aluminium chloride hexahydrate

Revision Date:2024-06-22 Revision Number:1

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

## Product identifier

Product name : Aluminium chloride hexahydrate  
CBnumber : CB9196728  
CAS : 7784-13-6  
EINECS Number : 616-520-1  
Synonyms : ALUMINUM CHLORIDE HEXAHYDRATE,Aluminium chloride hexahydrate

## Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses : For R&D use only. Not for medicinal, household or other use.  
Uses advised against : none

## Company Identification

Company : Chemicalbook  
Address : Building 1, Huihuang International, Shangdi 10th Street, Haidian District, Beijing  
Telephone : 400-158-6606

## SECTION 2: Hazards identification

## GHS Label elements, including precautionary statements

Symbol(GHS)



Signal word

Warning

## Precautionary statements

P405 Store locked up.

P310 Immediately call a POISON CENTER or doctor/physician.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continuerinsing.

P303+P361+P353 IF ON SKIN (or hair): Remove/Take off Immediately all contaminated clothing. Rinse SKIN with water/shower.

P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

## Hazard statements

H319 Causes serious eye irritation

H318 Causes serious eye damage

H315 Causes skin irritation

H314 Causes severe skin burns and eye damage

H303 May be harmful if swallowed

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## SECTION 3: Composition/information on ingredients

### Substance

Product name	: Aluminium chloride hexahydrate
Synonyms	: ALUMINUM CHLORIDE HEXAHYDRATE, Aluminium chloride hexahydrate
CAS	: 7784-13-6
EC number	: 616-520-1
MF	: $\text{AlCl}_3\text{H}_2\text{O}$
MW	: 151.35

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## SECTION 4: First aid measures

### Description of first aid measures

#### General advice

First aiders need to protect themselves. Show this material safety data sheet to the doctor

#### If inhaled

After inhalation: fresh air. Call in physician.

#### In case of skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Call a physician immediately.

#### In case of eye contact

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses.

#### If swallowed

After swallowing: make victim drink water (two glasses at most), avoid vomiting (risk of perforation). Call a physician immediately. Do not attempt to neutralise.

### Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

### Indication of any immediate medical attention and special treatment needed

No data available

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## SECTION 5: Firefighting measures

### Extinguishing media

#### Suitable extinguishing media

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

### Special hazards arising from the substance or mixture

Nature of decomposition products not known. Not combustible.

Ambient fire may liberate hazardous vapours.

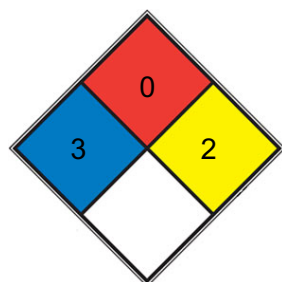
### Advice for firefighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

### Further information

Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

### NFPA 704



**HEALTH 3** Short exposure could cause serious temporary or moderate residual injury (e.g. [liquid hydrogen](#), [sulfuric acid](#), [calcium hypochlorite](#), hexafluorosilicic acid)

**FIRE 0** Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand. Materials that will not burn in air when exposed to a temperature of 820 °C (1,500 °F) for a period of 5 minutes.(e.g. Carbon tetrachloride)

**REACT 2** Undergoes violent chemical change at elevated temperatures and pressures, reacts violently with water, or may form explosive mixtures with water (e.g. white phosphorus, [potassium](#), [sodium](#))

SPEC.

HAZ.

## SECTION 6: Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid inhalation of dusts. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

For personal protection see section 8.

### Environmental precautions

Do not let product enter drains.

### Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

## Reference to other sections

For disposal see section 13.

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## SECTION 7: Handling and storage

### Precautions for safe handling

For precautions see section 2.2.

### Conditions for safe storage, including any incompatibilities

### Storage conditions

Tightly closed. Dry.

Moisture sensitive.

### Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

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## SECTION 8: Exposure controls/personal protection

### control parameter

#### Hazard composition and occupational exposure limits

Does not contain substances with occupational exposure limits.

### Exposure controls

#### Personal protective equipment

##### Eye/face protection

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

##### Skin protection

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0,11 mm Break through time: 480 min

Material tested:KCL 741 Dermatril? L

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

Splash contact Material: Nitrile rubber

Minimum layer thickness: 0,11 mm Break through time: 480 min

Material tested:KCL 741 Dermatril? L

### Body Protection

Acid-resistant protective clothing

### Respiratory protection

For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

### Control of environmental exposure

Do not let product enter drains.

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## SECTION 9: Physical and chemical properties

### Information on basic physicochemical properties

Appearance	solid
Odour	odorless
Odour Threshold	Not applicable
pH	ca.2,5 at 50 g/l at 20 °C
Melting point/freezing point	Melting point: ca.100 °C
Initial boiling point and boiling range	No data available
Flash point	No data available
Evaporation rate	No data available
Flammability (solid, gas)	The product is not flammable.
Upper/lower flammability or explosive limits	No data available
Vapour pressure	1 mm Hg ( 100 °C)
Vapour density	No data available
Relative density	2.398
Water solubility	1.330 g/l at 20 °C
Partition coefficient: n-octanol/water	Not applicable for inorganic substances
Autoignition temperature	No data available
Decomposition temperature	No data available
Viscosity	Viscosity, kinematic: No data available Viscosity, dynamic: No data available
Explosive properties	No data available
Oxidizing properties	No data available

### Other safety information

No data available

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## SECTION 10: Stability and reactivity

### Reactivity

No data available

## Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

## Possibility of hazardous reactions

Violent reactions possible with:

alkenes Alcohols Alkali metals

Alkaline earth metals Ethylene oxide halogen oxides Oxidizing agents

organic nitro compounds phenols

Bases

## Conditions to avoid

no information available

## Incompatible materials

Metals

## Hazardous decomposition products

In the event of fire: see section 5

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# SECTION 11: Toxicological information

## Information on toxicological effects

### Acute toxicity

LD50 Oral - Rat - 3.311 mg/kg

Remarks: (RTECS)

Symptoms: If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the esophagus and the stomach., Nausea, Vomiting

Symptoms: mucosal irritations, Cough, Shortness of breath, Possible damages:., damage of respiratory tract

LD50 Dermal - Rabbit - > 2.000 mg/kg Remarks: (RTECS)

(anhydrous substance)

The value is given in analogy to the following substances: aluminium(III) chloride, anhydrous

### Skin corrosion/irritation

(OECD Test Guideline 435)

Remarks: The value is given in analogy to the following substances: aluminium(III) chloride, anhydrous

### Serious eye damage/eye irritation

Causes serious eye damage.

### Respiratory or skin sensitization

(OECD Test Guideline 406)

Remarks: The value is given in analogy to the following substances: aluminium(III) chloride, anhydrous

### Germ cell mutagenicity

Test Type: Mammal

Test system: lymphocyte Remarks: DNA damage

**Carcinogenicity**

No data available

**Reproductive toxicity**

No data available

**Specific target organ toxicity - single exposure**

No data available

**Specific target organ toxicity - repeated exposure**

No data available

**Aspiration hazard**

No data available

**Toxicity**

LD50 orally in Rabbit: 3311 mg/kg

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## SECTION 12: Ecological information

**Toxicity****Toxicity to fish**

LC50 - Oncorhynchus mykiss (rainbow trout) - 36,6 mg/l - 96 h Remarks: (External MSDS)

**Toxicity to daphnia and other aquatic invertebrates**

EC50 - Daphnia magna (Water flea) - 27,3 mg/l - 48 h

**Toxicity to algae**

EC50 - Pseudokirchneriella subcapitata (green algae) - 0,57 mg/l - 96 h

**Persistence and degradability**

The methods for determining biodegradability are not applicable to inorganic substances.

**Bioaccumulative potential**

No data available

**Mobility in soil**

No data available

**Results of PBT and vPvB assessment**

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

**Other adverse effects**

May be harmful to aquatic organisms due to the shift of the pH. Avoid release to the environment.

Biological effects:

Harmful effect due to pH shift.

Forms corrosive mixtures with water even if diluted.

The following may develop after reaction of the product with water: Hydrogen chloride gas

Discharge into the environment must be avoided.

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## SECTION 13: Disposal considerations

### Waste treatment methods

#### Product

See [www.retrologistik.com](http://www.retrologistik.com) for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

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## SECTION 14: Transport information

### UN number

ADR/RID: 1759 IMDG: 1759 IATA: 1759

### UN proper shipping name

ADR/RID: CORROSIVE SOLID, N.O.S. (aluminum chloride hexahydrate) IMDG: CORROSIVE SOLID, N.O.S. (aluminum chloride hexahydrate)

IATA: Corrosive solid, n.o.s. (aluminum chloride hexahydrate)

### Transport hazard class(es)

ADR/RID: 8 IMDG: 8 IATA: 8

### Packaging group

ADR/RID: II IMDG: II IATA: II

### Environmental hazards

ADR/RID: no IMDG Marine pollutant: no IATA: no

### Special precautions for user

No data available

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## SECTION 15: Regulatory information

### Safety, health and environmental regulations/legislation specific for the substance or mixture

#### Regulations on the Safety Management of Hazardous Chemicals

China Catalog of Hazardous chemicals 2015:Not Listed. website: <https://www.mem.gov.cn/>

#### Measures for Environmental Management of New Chemical Substances

United States Toxic Substances Control Act (TSCA) Inventory:Not Listed. website: <https://www.epa.gov/>

Korea Existing Chemicals List (KECL):Not Listed. website: <http://ncis.nier.go.kr>

European Inventory of Existing Commercial Chemical Substances (EINECS):Not Listed. website: <https://echa.europa.eu/>

EC Inventory:Not Listed.

Vietnam National Chemical Inventory:Listed. website: <https://chemicaldata.gov.vn/>

Philippines Inventory of Chemicals and Chemical Substances (PICCS):Listed. website: <https://emb.gov.ph/>

New Zealand Inventory of Chemicals (NZIoC):Listed. website: <https://www.epa.govt.nz/>



## SECTION 16: Other information

### Abbreviations and acronyms

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

CAS: Chemical Abstracts Service

EC50: Effective Concentration 50%

IATA: International Air Transportation Association

IMDG: International Maritime Dangerous Goods

LC50: Lethal Concentration 50%

LD50: Lethal Dose 50%

RID: Regulation concerning the International Carriage of Dangerous Goods by Rail

STEL: Short term exposure limit

TWA: Time Weighted Average

### References

【1】 CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>

【2】 ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>

【3】 ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

【4】 eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website:

[http://www.echemportal.org/echemportal/index?pageID=0&request\\_locale=en](http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en)

【5】 ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>

【6】 Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>

【7】 HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>

【8】 IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>

【9】 IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>

【10】 Sigma-Aldrich, website: <https://www.sigmaaldrich.com/>

#### Disclaimer:

The information in this MSDS is only applicable to the specified product, unless otherwise specified, it is not applicable to the mixture of this product and other substances. This MSDS only provides information on the safety of the product for those who have received the appropriate professional training for the user of the product. Users of this MSDS must make independent judgments on the applicability of this SDS. The authors of this MSDS will not be held responsible for any harm caused by the use of this MSDS.