

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)
according to Regulation (EU) No. 2020/878



Trade name : 100421 - Aluminium chloride hexahydrate, USP
Revision date : 12/12/2023 **Version (Revision) :** 3.0.0 (2.0.0)
Print date : 12/12/2023

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

1.1 Product identifier

Aluminium chloride hexahydrate, USP (100421)
Aluminium chloride hexahydrate ; CAS No. : 7784-13-6 ; EC No. : 231-208-1 ; REACH No. : 01-2119459371-39-XXXX

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

Relevant identified uses

For manufacturing, processing, laboratory or repacking use only.

Uses advised against

Uses other than those recommended.

1.3 Details of the supplier of the safety data sheet

Supplier (manufacturer/importer/only representative/downstream user/distributor)

DC Fine Chemicals Ltd

Street : 88 Hill Top

Postal code/City : NW11 6DY London United Kingdom

Telephone : +44 (0)20 7586 6800

Telefax : +44 (0)20 7504 1701

Information contact : info@dcfinechemicals.com

1.4 Emergency telephone number

(Only available during office hours; Monday-Friday; 08:00-18:00)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation GHS

Classification according to Regulation (EC) No 1272/2008 [CLP]

Skin Corr. 1B ; H314 - Skin corrosion/irritation : Category 1B ; Causes severe skin burns and eye damage.

Eye Dam. 1 ; H318 - Serious eye damage/eye irritation : Category 1 ; Causes serious eye damage.

2.2 Label elements

Labelling according to Regulation GHS

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms



Corrosion (GHS05)

Signal word

DANGER

Hazard statements

Safety Data Sheet

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H314 Causes severe skin burns and eye damage.

Precautionary statements

P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P264 Wash thoroughly after handling.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P310 Immediately call a POISON CENTER/doctor.
P321 Specific treatment (see on this label).
P405 Store locked up.

Supplemental hazard information

EUH071 Corrosive to the respiratory tract.

2.3 Other hazards

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

SECTION 3: Composition/information on ingredients

3.1 Substances

Substance name : Aluminium chloride hexahydrate

EC No. : 231-208-1

REACH No. : 01-2119459371-39-XXXX

CAS No. : 7784-13-6

Purity : 100 % [mass]

SECTION 4: First aid measures

4.1 Description of first aid measures

Remove contaminated, saturated clothing immediately. After contact with skin, wash immediately with plenty of water and soap. After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately. If accidentally ingested, seek immediate medical attention, NEVER induce vomiting. Remove victim out of the danger area. When in doubt or if symptoms are observed, get medical advice.

4.2 Most important symptoms and effects, both acute and delayed

Contact with eyes or skin can cause burns; ingestion or inhalation can cause internal damage, if this occurs immediate medical assistance is required. Never give anything by mouth to an unconscious person or a person with cramps.

4.3 Indication of any immediate medical attention and special treatment needed

Request immediate medical attention. Never administer anything orally to persons who are unconscious. Do not induce vomiting. If the person vomits, clear the respiratory tract. Cover the affected area with a dry sterile bandage. Protect the affected area from pressure or friction.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Extinguisher powder or CO₂. In case of more serious fires, also alcohol-resistant foam and water spray.

Unsuitable extinguishing media

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Do not use a direct stream of water to extinguish. In the presence of electrical voltage, you cannot use water or foam as extinguishing media.

5.2 Special hazards arising from the substance or mixture

Special risks: Fire can cause thick, black smoke. As a result of thermal decomposition, dangerous products can form: carbon monoxide, carbon dioxide. Exposure to combustion or decomposition products can be harmful to your health.

5.3 Advice for firefighters

Use water to cool tanks, cisterns, or containers close to the heat source or fire. Take wind direction into account. Prevent the products used to fight the fire from going into drains, sewers, or waterways. Wear a self-contained breathing apparatus and chemical protective clothing. Do not inhale explosion and combustion gases.

5.4 Additional information

Fire protection equipment: According to the size of the fire, it may be necessary to use protective suits against the heat, individual breathing equipment, gloves, protective goggles or facemasks, and boots.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Wear a self-contained breathing apparatus and chemical protective clothing.

For emergency responders

Eliminate possible ignition points and ventilate the area. No smoking. Avoid breathing fumes. For exposure control and individual protection measures, see section 8.

6.2 Environmental precautions

Do not allow to enter into surface water or drains. In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities. Retain contaminated washing water and dispose it.

6.3 Methods and material for containment and cleaning up

For containment

Collect in closed and suitable containers for disposal.

For cleaning up

The contaminated area should be cleaned up immediately with: Water Soak up inert absorbent and dispose as waste requiring special attention. Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents).

6.4 Reference to other sections

Reference to other sections Disposal: see section 13 Personal protection equipment: see section 8

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Protective measures



When using do not eat, drink, smoke, sniff.
(refer to section 8).

Wear personal protection equipment

Measures to prevent aerosol and dust generation

Safety Data Sheet

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Use only in well-ventilated areas. Do not breathe gas/fumes/vapour/spray. Do not breathe dust.

Environmental precautions

Use appropriate container to avoid environmental contamination.

Specific requirements or handling rules

Handle and open container with care.

Advices on general occupational hygiene

Take care for general good hygiene and housekeeping.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions

Storage temperature :

Keep in a cool, well-ventilated place.

Requirements for storage rooms and vessels

Only use containers specifically approved for the substance/product.

Hints on joint storage

Store at least 3 metres apart from: Chemicals/products that react together readily

Storage class (TRGS 510) : 8B

7.3 Specific end use(s)

None

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limit values

Aluminium chloride hexahydrate ; CAS No. : 7784-13-6

Limit value type (country of origin) : VLA (GLOB)

Limit value : 2 mg/m³

Version :

DNEL-/PNEC-values

DNEL/DMEL

Aluminium chloride hexahydrate ; CAS No. : 7784-13-6

Limit value type : DNEL Consumer (systemic)

Exposure route : Oral

Exposure frequency : Long-term

Limit value : 0.3 mg/kg bw/day

Limit value type : DNEL worker (local)

Exposure route : Inhalation

Exposure frequency : Long-term

Limit value : 1 mg/m³

Limit value type : DNEL worker (local)

Exposure route : Inhalation

Exposure frequency : Short-term

Limit value : 2 mg/m³

8.2 Exposure controls

Only wear fitting, comfortable and clean protective clothing.

Personal protection equipment

Safety Data Sheet

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Eye/face protection



Eye glasses with side protection Face protection shield EN 166

Skin protection

Hand protection



Tested protective gloves must be worn EN ISO 374

Body protection

For the protection against direct skin contact, body protective clothing is essential (in addition to the usual working



clothes). Wash contaminated clothing prior to re-use.

Respiratory protection

If technical exhaust or ventilation measures are not possible or insufficient, respiratory protection must be worn.



Particle filter device (EN 143).

Thermal hazards

No information available.

Environmental exposure controls

No information available.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance : solid

Safety characteristics

Melting point/freezing point :	(1013 hPa)	100 °C
Initial boiling point and boiling range :	(1013 hPa)	No data available
Decomposition temperature :	(1013 hPa)	No data available
Flash point :		No data available
Auto-ignition temperature :		No data available
Lower explosion limit :		No data available
Upper explosion limit :		No data available
Vapour pressure :	(50 °C)	No data available
Density :	(20 °C)	2.4 g/cm ³
Solvent separation test :	(20 °C)	not applicable
Water solubility :	(20 °C)	477 g/l

Safety Data Sheet

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Fat solubility :	(20 °C)	No data available.	
pH :	(20 °C / 50 g/l)	2.5 - 3.5	
log P O/W :		No data available	
Flow time :	(20 °C)	No data available	DIN- cup 4 mm
Viscosity :	(20 °C)	No data available	
Relative vapour density :	(20 °C)	No data available	
Evaporation rate :		No data available	
Flammable solids :	No data available.		
Flammable gases :	No data available.		
Explosive properties :	No data available.		

9.2 Other information

None

SECTION 10: Stability and reactivity

10.1 Reactivity

The product does not present hazards by their reactivity.

10.2 Chemical stability

The product is chemically stable under recommended conditions of storage, use and temperature. Safe handling: see section 7

10.3 Possibility of hazardous reactions

No hazardous reaction when handled and stored according to provisions.

10.4 Conditions to avoid

Avoid any improper handling.

10.5 Incompatible materials

Keep away from oxidising agents and from highly alkaline or acidic materials in order to prevent exothermic reactions.

10.6 Hazardous decomposition products

Depending on conditions of use, can be generated the following products: Corrosive vapors or gases.

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity

Acute oral toxicity

Parameter : LD50 (Aluminium chloride hexahydrate ; CAS No. : 7784-13-6)
Exposure route : Oral
Species : Rat, female
Effective dose : 3470 mg/kg

Parameter : LD50 (Aluminium chloride hexahydrate ; CAS No. : 7784-13-6)
Exposure route : Oral
Species : Rat, male
Effective dose : 3450 mg/kg

Acute dermal toxicity

Parameter : LD50 (Aluminium chloride hexahydrate ; CAS No. : 7784-13-6)

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Exposure route : Dermal
Species : Rabbit
Effective dose : > 2000 mg/kg

Corrosion

Skin corrosion/irritation

No information available.

Serious eye damage/eye irritation

No information available.

Respiratory or skin sensitisation

No information available.

CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)

Carcinogenicity

No information available.

Germ cell mutagenicity

No information available.

Reproductive toxicity

No information available.

STOT-single exposure

No information available.

STOT-repeated exposure

No information available.

Aspiration hazard

No information available.

11.2 Information on other hazards

No information available.

SECTION 12: Ecological information

12.1 Toxicity

Aquatic toxicity

Acute (short-term) fish toxicity

Parameter : LC50 (Aluminium chloride hexahydrate ; CAS No. : 7784-13-6)
Species : Oncorhynchus mykiss (Rainbow trout)
Evaluation parameter : Acute (short-term) fish toxicity
Effective dose : 36.6 mg/l
Exposure time : 96 hour(s)

Chronic (long-term) fish toxicity

Parameter : NOEC (Aluminium chloride hexahydrate ; CAS No. : 7784-13-6)
Species : Oncorhynchus mykiss (Rainbow trout)
Evaluation parameter : Chronic (long-term) fish toxicity
Effective dose : 0.25 mg/l
Exposure time : 42 day(s)

Acute (short-term) toxicity to crustacea

Parameter : EC50 (Aluminium chloride hexahydrate ; CAS No. : 7784-13-6)
Species : Daphnia magna (Big water flea)

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)
according to Regulation (EU) No. 2020/878



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Revision date : 12/12/2023 **Version (Revision) :** 3.0.0 (2.0.0)
Print date : 12/12/2023

Evaluation parameter : Chronic (long-term) toxicity to aquatic invertebrate
Effective dose : 27.3 mg/l
Exposure time : 48 hour(s)
Parameter : EC50 (Aluminium chloride hexahydrate ; CAS No. : 7784-13-6)
Species : Ceriodaphnia spec
Evaluation parameter : Acute (short-term) toxicity to crustacea
Effective dose : 7.4 mg/l
Exposure time : 48 hour(s)

Chronic (long-term) toxicity to aquatic invertebrate

Parameter : NOEC (Aluminium chloride hexahydrate ; CAS No. : 7784-13-6)
Species : Daphnia magna (Big water flea)
Evaluation parameter : Chronic (long-term) toxicity to aquatic invertebrate
Effective dose : 0.8 mg/l
Exposure time : 21 day(s)

12.2 Persistence and degradability

No information available.

12.3 Bioaccumulative potential

No information available.

12.4 Mobility in soil

No information available.

12.5 Results of PBT and vPvB assessment

This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII.

12.6 Endocrine disrupting properties

No information available.

12.7 Other adverse effects

No information available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process. Follow the provisions of Directive 2008/98/EC regarding waste management.

Product/Packaging disposal

Waste treatment options

Recycle according to official regulations. Evidence for disposal must be provided.

Appropriate disposal / Product

Dispose of waste according to applicable legislation.

Appropriate disposal / Package

Non-contaminated packages must be recycled or disposed of. Contaminated packages must be completely emptied and can be re-used following proper cleaning. Packing which cannot be properly cleaned must be disposed of. Handle contaminated packages in the same way as the substance itself.

SECTION 14: Transport information

14.1 UN number

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UN 3260

14.2 UN proper shipping name

Land transport (ADR/RID)

CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S. (Aluminium chloride hexahydrate)

Sea transport (IMDG)

CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S. (Aluminium chloride hexahydrate)

Air transport (ICAO-TI / IATA-DGR)

CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S. (Aluminium chloride hexahydrate)

14.3 Transport hazard class(es)

Land transport (ADR/RID)

Class(es) : 8
Classification code : C2
Hazard identification number (Kemler No.) : 80
Tunnel restriction code : E
Special provisions : LQ 1 kg · E 2
Hazard label(s) : 8

Sea transport (IMDG)

Class(es) : 8
EmS-No. : F-A / S-B
Special provisions : LQ 1 kg · E 2 · IMDG-Code segregation group 1 - Acids · Segregation code 36 - Stow "separated from" SGG18 -alkalis · Segregation code 49 - Stow "separated from" SGG6 - cyanides
Hazard label(s) : 8

Air transport (ICAO-TI / IATA-DGR)

Class(es) : 8
Special provisions : E 2
Hazard label(s) : 8

14.4 Packing group

II

14.5 Environmental hazards

Land transport (ADR/RID) : No

Sea transport (IMDG) : No

Air transport (ICAO-TI / IATA-DGR) : No

14.6 Special precautions for user

Hazard label(s) :



14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

No information available.

SECTION 15: Regulatory information

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

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Safety Data Sheet According to Regulation (EC) No. 1907/2006 (REACH) Classification according to Regulation (EC) No 1272/2008 [CLP] according to Regulation (EU) No. 2020/878

EU legislation

Authorisations and/or restrictions on use

Restrictions on use

Regulation (EC) No. 1907/2006 (REACH), Annex XVII (restrictions)

Use restriction according to REACH annex XVII, no. : 3

National regulations

Water hazard class

Class : nwg (Non-hazardous to water)

15.2 Chemical Safety Assessment

No information available.

SECTION 16: Other information

16.1 Indication of changes

02. Classification of the substance or mixture · 02. Label elements · 02. Labelling according to Regulation (EC) No. 1272/2008 [CLP] · 02. Labelling according to Regulation (EC) No. 1272/2008 [CLP] - Hazard components for labelling · 03. Hazardous ingredients · 07. Hints on joint storage - Storage class · 08. DNEL/DMEL · 14. UN proper shipping name - Land transport (ADR/RID) · 14. UN proper shipping name - Sea transport (IMDG) · 14. UN proper shipping name - Air transport (ICAO-TI / IATA-DGR) · 14. Transport hazard class(es) - Land transport (ADR/RID) · 14. Transport hazard class(es) - Sea transport (IMDG) · 14. Transport hazard class(es) - Air transport (ICAO-TI / IATA-DGR) · 15. Water hazard class

16.2 Abbreviations and acronyms

ADR:	European Agreement concerning the International Carriage of Dangerous Goods by Road
ASTM:	ASTM International, originally known as American Society for Testing and Materials (ASTM)
EINECS:	European Inventory of Existing Commercial Chemical Substances
EC50:	Effective Concentration 50 (Maximum Effective Concentration for 0% of Individuals)
LC50:	Lethal Concentration 50 (Lethal Concentration for 50% of Individuals)
IC50:	Inhibitor Concentration 50 (Inhibitory Concentration for 50% of Individuals)
NOEL:	No Observed Effect Level (Maximum dose without effect)
DNEL:	Derived No Effect Level (Derived no-effect dose)
DMEL:	Derived Minimum Effect Level (Derived dose of minimal effect)
CLP:	Classification, Labelling and Packaging
CSR:	Chemical Safety Report
LD50:	Lethal Dose 50 (Lethal Dose for 50% of Individuals)
IATA:	International Air Transport Association
ICAO:	International Civil Aviation Organization
Codice IMDG:	International Maritime Dangerous Goods code
PBT:	Persistent, bioaccumulative and toxic
RID:	Regulations concerning the international rail transport of Dangerous Goods
STEL:	Short term exposure limit
TLV:	Threshold limit value
TWA:	Time Weighted Average
UE:	European Union
vPvB:	Very persistent very bioaccumulative
N.D.:	Unavailable

Safety Data Sheet

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N.A.: Not applicable
VwVwS.: Text of Administrative Regulation on the Classification of Substances hazardous to waters into Water Hazard Classes

16.3 Key literature references and sources for data

None

16.4 Relevant H- and EUH-phrases (Number and full text)

H314 Causes severe skin burns and eye damage.
H318 Causes serious eye damage.

16.5 Training advice

None

16.6 Additional information

None

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.
