We create chemistry

Safety data sheet

1. Identification

Product identifier

Aluminium chloride anhydrous ground

Chemical name: aluminium chloride, anhydrous
INDEX-Number: 013-003-00-7
CAS Number: 7446-70-0

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

Relevant identified uses: Chemical
Recommended use: Intermediate, catalyst, process chemical

Details of the supplier of the safety data sheet

Company:
BASF SE
67056 Ludwigshafen
GERMANY
Division Monomers

Telephone: +49 621 60 42737
E-mail address: pss.monomers@basf.com

Emergency telephone number

International emergency number:
Telephone: +49 180 2273-112

2. Hazards Identification

Classification of the substance or mixture

According to UN GHS criteria

Acute Tox. 5 (oral)
Skin Corr./Irrit. 1B
Eye Dam./Irrit. 1

For the classifications not written out in full in this section the full text can be found in section 16.

Label elements

Globally Harmonized System (GHS)

Pictogram:

Signal Word:
Danger

Hazard Statement:

H303	May be harmful if swallowed.
H314	Causes severe skin burns and eye damage.

Precautionary Statements (Prevention):

P280	Wear protective gloves, protective clothing and eye protection or face protection.
P260	Do not breathe dust or mist.
P264	Wash contaminated body parts thoroughly after handling.

Precautionary Statements (Response):

P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER or physician.
P303 + P361 + P353	IF ON SKIN (or hair): Remove or Take off immediately all contaminated clothing. Rinse skin with water or shower.
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P301 + P330 + P331	IF SWALLOWED: rinse mouth. Do NOT induce vomiting.

Precautionary Statements (Storage):

P405	Store locked up.

Precautionary Statements (Disposal):

P501	Dispose of contents and container to hazardous or special waste collection point.

Labeling of special preparations (GHS):
Reacts violently with water. Corrosive to the respiratory tract.

According to UN GHS criteria

Hazard determining component(s) for labelling: Aluminium chloride

Other hazards

According to UN GHS criteria

If applicable information is provided in this section on other hazards which do not result in classification but which may contribute to the overall hazards of the substance or mixture.

Corrodes metals in the presence of water or moisture.

3. Composition/Information on Ingredients

Substances

Chemical nature

Aluminium chloride

CAS Number: 7446-70-0
EC-Number: 231-208-1
INDEX-Number: 013-003-00-7

For the classifications not written out in full in this section the full text can be found in section 16.

Mixtures

Not applicable

4. First-Aid Measures

Description of first aid measures

Immediately remove contaminated clothing. If the patient is likely to become unconscious, place and transport in stable sideways position (recovery position).

If inhaled:
Keep patient calm, remove to fresh air. Immediately administer a corticosteroid from a controlled/metered dose inhaler.

On skin contact:
Wipe dry. Immediately wash thoroughly with plenty of water, apply sterile dressings, consult a skin specialist.

On contact with eyes:
Immediately wash affected eyes for at least 15 minutes under running water with eyelids held open, consult an eye specialist.

On ingestion:
Immediately rinse mouth and then drink 200-300 ml of water, seek medical attention.

Most important symptoms and effects, both acute and delayed

Symptoms: skin corrosion, irritates the eyes and respiratory tract

Hazards: No hazard is expected under intended use and appropriate handling.

Indication of any immediate medical attention and special treatment needed

Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote.

5. Fire-Fighting Measures

Extinguishing media

Suitable extinguishing media:
dry powder

Unsuitable extinguishing media for safety reasons:
water

Special hazards arising from the substance or mixture

Hydrogen chloride
The substances/groups of substances mentioned can be released if the product is involved in a fire.

Advice for fire-fighters

Special protective equipment:
Wear a self-contained breathing apparatus.

Further information:
Contaminated extinguishing water must be disposed of in accordance with official regulations.

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

Breathing protection required.

Environmental precautions

Due to the pH-value of the product, neutralization is generally required before discharging sewage into treatment plants.

Methods and material for containment and cleaning up

For large amounts: Sweep/shovel up. Dispose of absorbed material in accordance with regulations.
For residues: Rinse away with water.
Avoid raising dust.

7. Handling and Storage

Precautions for safe handling

Handle in accordance with good industrial hygiene and safety practice. Keep container tightly sealed. Before opening venting of container is recommended; beware of escaping gases and vapours. Avoid dust formation. Breathing must be protected when large quantities are decanted without local exhaust ventilation.

Protection against fire and explosion:
The substance/product is non-combustible.

Conditions for safe storage, including any incompatibilities

Suitable materials for containers: glass, enamelled, Carbon steel (Iron), polyvinylchloride (PVC), Stainless steel 1.4301 (V2)
Further information on storage conditions: Keep container tightly closed in a cool, well-ventilated place. Keep container dry.

Storage stability:
Product is hygroscopic.
Improper storage may result in pressure build up in the drums.

Specific end use(s)
See exposure scenario(s) in the attachment to this safety data sheet.

8. Exposure Controls/Personal Protection

Control parameters

Components with occupational exposure limits

No substance specific occupational exposure limits known.

Exposure controls

Personal protective equipment

Respiratory protection:
Gas filter for gases/vapours of inorganic compounds (e.g. EN 14387 Type B) Combination filter for gases/vapours of organic, inorganic, acid inorganic, alkaline compounds and toxic particles (e. g. EN 14387 Type ABEK-P3)

Hand protection:
Chemical resistant protective gloves (EN ISO 374-1)
Suitable materials also with prolonged, direct contact (Recommended: Protective index 6, corresponding > 480 minutes of permeation time according to EN ISO 374-1):
polyvinylchloride (PVC) - 0.7 mm coating thickness
nitrile rubber (NBR) - 0.4 mm coating thickness
Supplementary note: The specifications are based on tests, literature data and information of glove manufacturers or are derived from similar substances by analogy. Due to many conditions (e.g. temperature) it must be considered, that the practical usage of a chemical-protective glove in practice may be much shorter than the permeation time determined through testing.
Manufacturer's directions for use should be observed because of great diversity of types.

Eye protection:
Tightly fitting safety goggles (cage goggles) (e.g. EN 166) and face shield.

Body protection:
chemical-protection suit (f.e. according to EN 14605)

General safety and hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Take off immediately all contaminated clothing. Hands and/or face should be washed before breaks and at the end of the shift.

9. Physical and Chemical Properties

Information on basic physical and chemical properties

Form:	powder	
Colour:	yellowish	
Odour:	pungent odour	
Odour threshold:	Not determined due to potential health hazard by inhalation.	
pH value:	2,4 (100 g/l)	(OECD Guideline 122)
Melting point:	190 °C (2.500 hPa)	
Boiling point:	(1.013,25 hPa) Study scientifically not justified., Sublimation	
Sublimation temperature:	181,2 °C (1.013,25 hPa) Literature data.	
Flash point:	not applicable, the product is a solid	
Evaporation rate:	not applicable, The product is a non-volatile solid.	
Flammability:	not highly flammable	(Regulation 440/2008/EC, A.10)
Lower explosion limit:	For solids not relevant for classification and labelling.	
Upper explosion limit:	For solids not relevant for classification and labelling.	
Vapour pressure:	< 1 mbar (20 °C) Literature data.	
Density:	2,44 g/cm3 (25 °C) Literature data.	
Relative density:	2,48 Literature data.	(other)
Relative vapour density (air):	The product is a non-volatile solid.	
Solubility in water:	Literature data. 450 g/l (20 °C)	
Partitioning coefficient n-octanol/water (log Kow):	Study scientifically not justified.	

Self ignition:	Based on its structural properties the product is not classified as self-igniting.	Test type: Spontaneous self-ignition at room-temperature.
	not self-igniting	Test type: Self-ignition at high temperatures. (Method: Regulation 440/2008/EC, A.16)
Thermal decomposition:	No decomposition if correctly stored and handled.	
Viscosity, dynamic:	Study scientifically not justified.	
Viscosity, kinematic:	not applicable, the product is a solid	
Explosion hazard:	Based on the chemical structure there is no indication of explosive properties.	
Fire promoting properties:	not fire-propagating	(Regulation 440/2008/EC, A.17)

Other information

Self heating ability:	It is not a substance capable of spontaneous heating.	
Bulk density:	1.200 kg/m3	
pKA:	Study scientifically not justified.	
Hygroscopy:	hygroscopic	
Adsorption/water - soil:	KOC: 3700 Following exposure to soil, adsorption to solid soil particles is probable, therefore contamination of groundwater is not expected.	(other)
Surface tension:	Based on chemical structure, surface activity is not to be expected.	
Grain size distribution	10,0 µm	(D10, ISO 13320-1;; particle size by laser diffraction)
	118,0 µm	(D90, ISO 13320-1;; particle size by laser diffraction)
	430,0 µm	(D50, ISO 13320-1;; particle size by laser diffraction)
Molar mass:	133,34 g/mol	
Angle of repose:	41 °	(funnel test (plant lab))

10. Stability and Reactivity

Reactivity

No hazardous reactions if stored and handled as prescribed/indicated.

Corrosion to metals:	Corrodes metals in the presence of water or moisture.	
Formation of flammable gases:	Remarks:	Forms no flammable gases in the presence of water.
	Method:	Flammability (Contact with water)

Chemical stability
The product is stable if stored and handled as prescribed/indicated.

Possibility of hazardous reactions
Reacts violently with water. Develops hydrochloric acid (HCL) on contact with water. The formation of gaseous decomposition products builds up pressure in tightly closed containers.

Conditions to avoid
See SDS section 7 - Handling and storage. Avoid humidity.

Incompatible materials

Substances to avoid:
water

Hazardous decomposition products

Hazardous decomposition products:
Hydrogen chloride
The substances/substance groups mentioned are formed by hydrolysis.

11. Toxicological Information

Information on toxicological effects

Acute toxicity

Assessment of acute toxicity:
The toxicity of the product is based on its corrosivity.

Of low toxicity after single ingestion.

Experimental/calculated data:
LD50 rat (oral): 3.450 - 3.470 mg/kg

(by inhalation):Study does not need to be conducted.

(dermal):Study does not need to be conducted.

Irritation

Assessment of irritating effects:
Corrosive! Damages skin and eyes.

Experimental/calculated data:

Skin corrosion/irritation: The European Union (EU) has classified this substance with 'Causes burns.' (R34).

Serious eye damage/irritation: Study does not need to be conducted.

Respiratory/Skin sensitization

Assessment of sensitization:
Skin sensitizing effects were not observed in animal studies.

Experimental/calculated data:
Guinea pig maximization test guinea pig: Non-sensitizing.

Germ cell mutagenicity

Assessment of mutagenicity:
No mutagenic effect was found in various tests with microorganisms and mammals. The product has not been fully tested. The statements have been derived in parts from products of a similar structure or composition.

Carcinogenicity

Assessment of carcinogenicity:
No reliable data was available concerning carcinogenic activity. The chemical structure does not suggest a specific alert for such an effect.

Reproductive toxicity

Assessment of reproduction toxicity:
The results of animal studies gave no indication of a fertility impairing effect. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Developmental toxicity

Assessment of teratogenicity:
The potential to cause toxicity to development cannot be excluded when given in high doses. The product has not been tested. The statement has been derived from the structure of the product.

Specific target organ toxicity (single exposure)

Remarks: No applicable information available.

Repeated dose toxicity and Specific target organ toxicity (repeated exposure)

Assessment of repeated dose toxicity:
The substance may cause damage to the upper respiratory tract after repeated inhalation, as shown in animal studies. After repeated administration the prominent effect is the induction of corrosion.

The information available on the product provides no indication of toxicity on target organs after repeated exposure. The product has not been fully tested. The statements have been derived in parts from products of a similar structure or composition.

Aspiration hazard

not applicable

12. Ecological Information

Toxicity

Assessment of aquatic toxicity:
There is a high probability that the product is not acutely harmful to aquatic organisms.
The effect strongly depends on the pH-value.

Toxicity to fish:
LC50 (96 h) 20,3 mg/l, Pimephales promelas (EPA 72-1, semistatic)

Aquatic invertebrates:
EC50 (48 h) 27,3 mg/l, Daphnia magna (Directive 84/449/EEC, C.2, static)
The details of the toxic effect relate to the nominal concentration.

Aquatic plants:
EC50 (72 h) 1,05 mg/l (growth rate), Pseudokirchneriella subcapitata (OECD Guideline 201, static) other TS

EC10 (72 h) 0,16 mg/l (growth rate), Pseudokirchneriella subcapitata (OECD Guideline 201, static) other TS

Microorganisms/Effect on activated sludge:
EC10 (180 min) > 1.000 mg/l, activated sludge, domestic, non-adapted (OECD Guideline 209, aerobic)
The details of the toxic effect relate to the nominal concentration.

Chronic toxicity to fish:
No observed effect concentration (7 d) 0,16 mg/l, Pimephales promelas (other, semistatic)

Chronic toxicity to aquatic invertebrates:
No observed effect concentration (6 d) 0,34 mg/l, Ceriodaphnia dubia (other, semistatic)

Assessment of terrestrial toxicity:
No toxic effects have been observed in studies with soil living organisms.

Soil living organisms:
LC50 (14 d) > 1.000 mg/kg, Eisenia sp. (Range-finding-study, artificial soil)
The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Terrestrial plants:
No data available.

Other terrestrial non-mammals:
No data available.

Persistence and degradability

Assessment biodegradation and elimination (H2O):
Not applicable for inorganic substances.

Elimination information:
not applicable

Assessment of stability in water:
In contact with water the substance will hydrolyse rapidly.
Information on Stability in Water (Hydrolysis):
not applicable

Bioaccumulative potential

Assessment bioaccumulation potential:
Significant accumulation in organisms is not to be expected.

Bioaccumulation potential:
Bioconcentration factor: 400 - 1.365, Fish (other)

Mobility in soil

Assessment transport between environmental compartments:
Adsorption in soil: No data available.

Other adverse effects

The substance is not listed in Regulation (EC) 1005/2009 on substances that deplete the ozone layer.

Additional information

Other ecotoxicological advice:
Inhibition of degradation activity in activated sludge is not to be anticipated during correct introduction of low concentrations.

13. Disposal Considerations

Waste treatment methods

Must be disposed of by special means, e.g. suitable dumping after chemical/physical pretreatment (consolidation).

Check for possible recycling.
Contact waste centre regarding recycling.

Contaminated packaging:
Contaminated packaging should be emptied as far as possible; then it can be passed on for recycling after being thoroughly cleaned.

14. Transport Information

Land transport

ADR

UN number or ID number:	UN1726
UN proper shipping name:	ALUMINIUM CHLORIDE, ANHYDROUS
Transport hazard class(es):	8
Packing group:	II
Environmental hazards:	no
Special precautions for user:	Tunnel code: E

RID

UN number or ID number:	UN1726
UN proper shipping name:	ALUMINIUM CHLORIDE, ANHYDROUS
Transport hazard class(es):	8
Packing group:	II
Environmental hazards:	no
Special precautions for user:	None known

Inland waterway transport

ADN

UN number or ID number:	UN1726
UN proper shipping name:	ALUMINIUM CHLORIDE, ANHYDROUS
Transport hazard class(es):	8
Packing group:	II
Environmental hazards:	no
Special precautions for user:	None known

Transport in inland waterway vessel
Not evaluated

Sea transport

IMDG

UN number or ID number:	UN 1726
UN proper shipping name:	ALUMINIUM CHLORIDE, ANHYDROUS
Transport hazard class(es):	8
Packing group:	II
Environmental hazards:	no Marine pollutant: NO
Special precautions for user:	EmS: F-A; S-B

Air transport

IATA/ICAO

UN number or ID number:	UN 1726
UN proper shipping name:	ALUMINIUM CHLORIDE, ANHYDROUS
Transport hazard class(es):	8
Packing group:	II
Environmental hazards:	No Mark as dangerous for the environment is needed
Special precautions for user:	None known

Maritime transport in bulk according to IMO instruments

Maritime transport in bulk is not intended.

15. Regulatory Information

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

If other regulatory information applies that is not already provided elsewhere in this safety data sheet, then it is described in this subsection.

16. Other Information

This product is of industrial quality and unless otherwise specified or agreed intended exclusively for industrial use.

Full text of classifications, hazard symbols and hazard statements, if mentioned in section 2 or 3:

Acute Tox.	Acute toxicity
Skin Corr./Irrit.	Skin corrosion/irritation
Eye Dam./Irrit.	Serious eye damage/eye irritation

The data contained in this safety data sheet are based on our current knowledge and experience and describe the product only with regard to safety requirements. This safety data sheet is neither a Certificate of Analysis (CoA) nor technical data sheet and shall not be mistaken for a specification agreement. Identified uses in this safety data sheet do neither represent an agreement on the corresponding contractual quality of the substance/mixture nor a contractually designated use. It is the responsibility of the recipient of the product to ensure any proprietary rights and existing laws and legislation are observed.