

**SAFETY DATA SHEET**  
Polyaluminium Chloride 18%

Page 1  
Issued: 06/09/2022  
Revision No: 2

**1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND OF THE COMPANY / UNDERTAKING**

**Product identifier:**

**Product name:** Polyaluminium Chloride 18%

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

**Identified uses:** Water treatment.

**Company name:** Nexchem Ltd  
Unit 3 Barshaw Park  
Leycroft Road  
Leicester  
LE4 1ET  
Tel: 0116 2311130  
24/7 Emergency Tel: 0800 246 1274  
Email: [sales@nexchem.co.uk](mailto:sales@nexchem.co.uk)

**2. HAZARDS IDENTIFICATION**

**Classification of the substance or mixture:**

**Classification (SI 2019 No. 720):**

**Physical hazards:** Met. Corr. 1 - H290

**Health hazards:** Eye Dam. 1 - H318

**Environmental hazards:** Not Classified

**Label elements:**

**Hazard pictograms:**



**Signal word:** Danger

**Hazard statements:** H290 May be corrosive to metals.  
H318 Causes serious eye damage.

**Precautionary statements:** P234 Keep only in original packaging.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.  
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/ doctor.  
P390 Absorb spillage to prevent material damage.  
P406 Store in a corrosion-resistant container with a resistant inner liner.

[cont...]

**SAFETY DATA SHEET**  
Polyaluminium Chloride 18%

Issued: 06/09/2022

Page 2

**Contains:** Aluminium chloride hydroxide sulphate  
**Other hazards:** This product does not contain any substances classified as PBT or vPvB.

**3. COMPOSITION / INFORMATION ON INGREDIENTS**

**Mixtures:** Aluminium Chloride Hydroxide Sulphate 40-50%  
**CAS number:** 39290-78-3  
**EC number:** 254-400-7  
**Classification:** Met. Corr. 1 - H290  
Eye Dam. 1 - H318

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

**4. FIRST AID MEASURES**

**Description of first aid measures:**

**General information:** Get medical attention immediately. Show this Safety Data Sheet to the medical personnel.

**Inhalation:** Remove affected person from source of contamination. Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Maintain an open airway. Loosen tight clothing such as collar, tie or belt. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen. Place unconscious person on their side in the recovery position and ensure breathing can take place. If in doubt, get medical attention promptly.

**Ingestion:** Rinse mouth thoroughly with water. Remove any dentures. Give plenty of water to drink. Stop if the affected person feels sick as vomiting may be dangerous. Do not induce vomiting unless under the direction of medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Place unconscious person on their side in the recovery position and ensure breathing can take place. Maintain an open airway. Loosen tight clothing such as collar, tie or belt. Get medical attention immediately.

**Skin contact:** Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention if symptoms are severe or persist after washing.

**Eye contact:** Rinse immediately with plenty of water. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 10 minutes. Get medical attention immediately.

**Protection of first aiders:** First aid personnel should wear appropriate protective equipment during any rescue. Wash contaminated clothing thoroughly with water before removing it from the affected person, or wear gloves. It may be dangerous for first aid personnel to carry out mouth-to-mouth resuscitation.

**Most important symptoms and effects, both acute and delayed:**

**Inhalation:** May cause damage to mucous membranes in nose, throat, lungs and bronchial system.  
**Ingestion:** May cause chemical burns in mouth, oesophagus and stomach.  
**Skin contact:** May cause irritation.  
**Eye contact:** Causes serious eye damage. Causes burns.

**Indication of any immediate medical attention and special treatment needed:**

**Notes for the doctor:** Treat symptomatically.

[cont...]

## 5. FIRE-FIGHTING MEASURES

### Extinguishing media:

**Suitable extinguishing media:** The product is not flammable. Use fire-extinguishing media suitable for the surrounding fire.

**Unsuitable extinguishing media:** Do not use water jet as an extinguisher, as this will spread the fire.

### Special hazards arising from the substance or mixture:

**Hazardous combustion products:** Thermal decomposition or combustion products may include the following substances:  
Harmful gases or vapours. Hydrogen chloride (HCl).

### Advice for firefighters:

**Protective actions during firefighting:** Avoid breathing fire gases or vapours. Evacuate area. Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. Cool containers exposed to flames with water until well after the fire is out. If a leak or spill has not ignited, use water spray to disperse vapours and protect men stopping the leak. Control run-off water by containing and keeping it out of sewers and watercourses. If risk of water pollution occurs, notify appropriate authorities.

**Special protective equipment for firefighters:** Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing. Firefighter's clothing will provide a basic level of protection for chemical incidents.

## 6. ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures:

**Personal precautions:** No action shall be taken without appropriate training or involving any personal risk. Keep unnecessary and unprotected personnel away from the spillage. Wear protective clothing as described in Section 8 of this safety data sheet. Follow precautions for safe handling described in this safety data sheet. Wash thoroughly after dealing with a spillage. Ensure procedures and training for emergency decontamination and disposal are in place. Do not touch or walk into spilled material.

**Environmental precautions:** Avoid discharge into drains or watercourses or onto the ground. Contain spillage with sand, earth or other suitable non-combustible material.

### Methods and material for containment and cleaning up:

**Methods for cleaning up:** Wear protective clothing as described in Section 8 of this safety data sheet. Clear up spills immediately and dispose of waste safely. Approach the spillage from upwind. Contain and absorb spillage with sand, earth or other non-combustible material. Place waste in labelled, sealed containers. Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

**Reference to other sections:** For personal protection, see Section 8. See Section 11 for additional information on health hazards. See Section 12 for additional information on ecological hazards. For waste disposal, see Section 13.

**SAFETY DATA SHEET**  
Polyaluminium Chloride 18%

Issued: 06/09/2022

Page 3

## 7. HANDLING AND STORAGE

**Precautions for safe handling:**

**Usage precautions:**

Read and follow manufacturer's recommendations. Wear protective clothing as described in Section 8 of this safety data sheet. Keep away from food, drink and animal feeding stuffs. Handle all packages and containers carefully to minimise spills. Keep container tightly sealed when not in use. Avoid the formation of mists. Do not handle until all safety precautions have been read and understood. Do not handle broken packages without protective equipment. Do not reuse empty containers.

**Advice on general occupational hygiene:** Wash promptly if skin becomes contaminated. Take off contaminated clothing. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Wash at the end of each work shift and before eating, smoking and using the toilet. Change work clothing daily before leaving workplace.

**Conditions for safe storage, including any incompatibilities:**

**Storage precautions:**

Store in accordance with local regulations. Store away from incompatible materials (see Section 10). Keep only in the original container. Keep container tightly closed, in a cool, well-ventilated place. Keep containers upright. Protect containers from damage. Store in corrosive resistant container with a resistant inner liner.

**Specific end use(s):**

The identified uses for this product are detailed in Section 1.2.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**Control parameters:**

**Occupational exposure limits:**

**Aluminium chloride hydroxide sulphate:** Long-term exposure limit (8-hour TWA): WEL 2 mg/m<sup>3</sup>

Aluminium salts, soluble.

WEL = Workplace Exposure Limit.

**Aluminium chloride hydroxide sulphate (CAS: 39290-78-3)**

**DNEL:**

Workers - Oral; Long term systemic effects: 0.5 mg/kg bw/d as Al

Workers - Inhalation; Long term systemic effects: 1.8 mg/m<sup>3</sup> as Al

Consumer - Oral; Long term systemic effects: 0.3 mg/kg bw/d as Al

Consumer - Inhalation; Long term systemic effects: 1.1 mg/m<sup>3</sup> as Al

**Exposure controls:**

**Appropriate engineering controls:** Provide adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls as the primary means to minimise worker exposure. Personal protective equipment should only be used if worker exposure cannot be controlled adequately by the engineering control measures. Ensure control measures are regularly inspected and maintained. Ensure operatives are trained to minimise exposure.

**Eye/face protection:**

Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. Personal protective equipment that provides appropriate eye and face protection should be worn. Wear tight-fitting, chemical splash goggles or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

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## SAFETY DATA SHEET

### Polyaluminium Chloride 18%

Issued: 06/09/2022

Page 5

- Hand protection:** Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. To protect hands from chemicals, wear gloves that are proven to be impervious to the chemical and resist degradation. Considering the data specified by the glove manufacturer, check during use that the gloves are retaining their protective properties and change them as soon as any deterioration is detected. Frequent changes are recommended.
- Other skin and body protection:** Appropriate footwear and additional protective clothing complying with an approved standard should be worn if a risk assessment indicates skin contamination is possible.
- Hygiene measures:** Provide eyewash station and safety shower. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Clean equipment and the work area every day. Good personal hygiene procedures should be implemented. Wash at the end of each work shift and before eating, smoking and using the toilet. When using do not eat, drink or smoke.
- Respiratory protection:** If ventilation is inadequate, suitable respiratory protection must be worn. Particulate filter, type P2.
- Environmental exposure controls:** Keep container tightly sealed when not in use. Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels. Store in a demarcated bunded area to prevent release to drains and/or watercourses.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties:

<b>Appearance:</b>	Clear liquid.
<b>Colour:</b>	Light (or pale). Yellow.
<b>Odour:</b>	Almost odourless.
<b>pH:</b>	pH (concentrated solution): 0.5 - 1.0
<b>Melting point:</b>	-25°C
<b>Initial boiling point and range:</b>	105 - 115°C
<b>Flash point:</b>	Not applicable.
<b>Vapour pressure:</b>	30 mm Hg @ 0°C
<b>Relative density:</b>	1.39
<b>Solubility(ies):</b>	Miscible with water.
<b>Partition coefficient:</b>	Not applicable.
<b>Viscosity:</b>	30 cP @ 20°C
<b>Explosive properties:</b>	Not applicable.

### Other information:

[cont...]

## 10. STABILITY AND REACTIVITY

**Reactivity:** May be corrosive to metals.

**Chemical stability:**

**Stability:** Stable at normal ambient temperatures and when used as recommended. Stable under the prescribed storage conditions.

**Possibility of hazardous reactions:** In contact with some metals can generate hydrogen gas, which can form explosive mixtures with air.

**Conditions to avoid:** Avoid excessive heat for prolonged periods of time.

**Incompatible materials:**

**Materials to avoid:** Alkalis. Chlorites. Hypochlorites. Sulphites. Some metals.

**Hazardous decomposition products:** Does not decompose when used and stored as recommended. Thermal decomposition or combustion products may include the following substances: Harmful gases or vapours. Hydrogen chloride (HCl).

## 11. TOXICOLOGICAL INFORMATION

**Information on toxicological effects:**

**Toxicological information on ingredients.**

**Aluminium chloride hydroxide sulphate**

**Acute toxicity – oral:**

**Acute toxicity oral (LD<sub>50</sub> mg/kg):** 2,360.0

**Species:** Rat

**ATE oral (mg/kg):** 2,360.0

**Acute toxicity – dermal:**

**Notes (dermal LD<sub>50</sub>):** LD<sub>50</sub> >2000 mg/kg, Dermal, Rat

**Acute toxicity – inhalation:**

**Notes (inhalation LC<sub>50</sub>):** LC<sub>50</sub> >5 mg/l, 4 hour, Dust/Mist Rat

**Skin corrosion/irritation:**

**Skin corrosion/irritation:** Not irritating.

**Serious eye damage/irritation:**

**Serious eye damage/irritation:** Eye Dam. 1 – H318 Causes serious eye damage.

**Respiratory sensitisation:**

**Respiratory sensitisation:** Conclusive data but not sufficient for classification.

**Skin sensitisation:**

**Skin sensitisation:** Not sensitising.

[cont...]

**SAFETY DATA SHEET**  
Polyaluminium Chloride 18%

Issued: 06/09/2022

Page 7

**Germ cell mutagenicity:**

**Genotoxicity - in vitro:** Negative. Read-across data.

**Carcinogenicity:**

**Carcinogenicity:** Carcinogenicity in humans is not expected.

**Reproductive toxicity:**

**Reproductive toxicity – fertility:** No evidence of reproductive toxicity in animal studies. Read-across data.

**Reproductive toxicity – development:** No evidence of reproductive toxicity in animal studies. Read-across data.

**Specific target organ toxicity - repeated exposure:**

**STOT - repeated exposure:** Conclusive data but not sufficient for classification.

**12. ECOLOGICAL INFORMATION**

**Toxicity:**

**Ecological information on ingredients.**

**Aluminium chloride hydroxide sulphate**

**Acute aquatic toxicity:**

**Acute toxicity – fish:** LC<sub>50</sub>, 96 hour: >1000 mg/l, Brachydanio rerio (Zebra Fish)

Read-across data.

CAS No. 1327-41-9

**Acute toxicity - aquatic invertebrates:** EC<sub>50</sub>, 48 hour: 98 mg/l, Daphnia magna

Read-across data.

CAS No. 1327-41-9

**Acute toxicity - aquatic plants:** EC<sub>50</sub>, 72 hour: 14 mg/l, Pseudokirchneriella subcapitata

**Persistence and degradability:**

**Persistence and degradability:** The product contains only inorganic substances which are not biodegradable.

**Stability (hydrolysis):** Hydrolysis when diluted with water forming Al(OH)<sub>3</sub>.

**Ecological information on ingredients.**

**Aluminium chloride hydroxide sulphate**

**Persistence and degradability:** Not applicable. Substance is inorganic.

**Stability (hydrolysis):** Hydrolysis when diluted with water forming Al(OH)<sub>3</sub>.

**Bioaccumulative potential:**

**Bioaccumulative potential:** The product does not contain any substances expected to be bioaccumulating.

**Partition coefficient:** Not applicable.

**Ecological information on ingredients.**

**Aluminium chloride hydroxide sulphate**

**Bioaccumulative potential:** The product is not bioaccumulating.

**Partition coefficient:** Not applicable. Substance is inorganic.

[cont...]

**SAFETY DATA SHEET**  
Polyaluminium Chloride 18%

Issued: 06/09/2022

Page 8

**Ecological information on ingredients.**

**Aluminium chloride hydroxide sulphate**

**Mobility in soil:**

**Mobility:** The product is soluble in water.

**Ecological information on ingredients.**

**Aluminium chloride hydroxide sulphate**

**Results of PBT and vPvB assessment:** This product does not contain any substances classified as PBT or vPvB.

**Results of PBT and vPvB assessment:** This substance is not classified as PBT or vPvB according to current UK criteria.

**Other adverse effects:**

Avoid the spillage or runoff entering drains, sewers or watercourses. The product may affect the acidity (pH) of water which may have hazardous effects on aquatic organisms. Inform the relevant authorities if environmental pollution occurs (sewers, waterways, soil or air).

**Ecological information on ingredients.**

**Aluminium chloride hydroxide sulphate**

**Other adverse effects:**

The product may affect the acidity (pH) of water which may have hazardous effects on aquatic organisms.

**13. DISPOSAL CONSIDERATIONS**

**Waste treatment methods:**

**General information:**

The generation of waste should be minimised or avoided wherever possible. Reuse or recycle products wherever possible. This material and its container must be disposed of in a safe way. Disposal of this product, process solutions, residues and by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any local authority requirements. When handling waste, the safety precautions applying to handling of the product should be considered. Care should be taken when handling emptied containers that have not been thoroughly cleaned or rinsed out. Empty containers or liners may retain some product residues and hence be potentially hazardous.

**Disposal methods:**

Dispose of waste product or used containers in accordance with local regulations. Dispose of contents/container in accordance with local regulations.

**14. TRANSPORT INFORMATION**

**UN number:**

**UN No. (ADR/RID):** 3264

**UN No. (IMDG):** 3264

**UN No. (ICAO):** 3264

**UN No. (ADN):** 3264

**UN proper shipping name:**

**Proper shipping name (ADR/RID):** CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Polyaluminium Chloride)

**Proper shipping name (IMDG):** CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Polyaluminium Chloride)

**Proper shipping name (ICAO):** CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Polyaluminium Chloride)

**Proper shipping name (ADN):** CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Polyaluminium Chloride)

[cont...]



**SAFETY DATA SHEET**  
Polyaluminium Chloride 18%

Issued: 06/09/2022

Page 9

**Transport hazard class(es):**

**ADR/RID class:** 8  
**ADR/RID classification code:** C1  
**ADR/RID label:** 8  
**IMDG class:** 8  
**ICAO class/division:** 8  
**ADN class:** 8

**Transport labels:**



**Packing group:**

**ADR/RID packing group:** III  
**IMDG packing group:** III  
**ICAO packing group:** III  
**ADN packing group:** III

**Environmental hazards:**

**Environmentally hazardous substance/marine pollutant:** No.

**Special precautions for user:**

**EmS:** F-A, S-B  
**ADR transport category:** 3  
**Emergency Action Code:** 2X  
**Hazard Identification Number (ADR/RID):** 80  
**Tunnel restriction code:** (E)

**Transport in bulk according to Annex II of MARPOL and the IBC Code:**

**15. REGULATORY INFORMATION**

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

**National regulations:** Health and Safety at Work etc. Act 1974 (as amended).  
The Chemicals (Hazard Information and Packaging for Supply) Regulations 2009 (SI 2009 No. 716).  
The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment. Regulations 2009 (SI 2009 No. 1348) (as amended) ["CDG 2009"].  
EH40/2005 Workplace exposure limits.  
GB CLP Regulation.  
The REACH etc. (Amendment etc.) (EU Exit) Regulations 2020 (SI 2020 No. 1577) (as amended).

**Restrictions (SI 2020 No. 1577 Annex XVII):** Entry number: 3

[cont...]

**SAFETY DATA SHEET**  
Polyaluminium Chloride 18%

Issued: 06/09/2022

Page 10

**Chemical safety assessment:** No chemical safety assessment has been carried out.

**Note:** The regulatory information given above only indicates the principal regulations specifically applicable to the product described in the safety data sheet. The user's attention is drawn to the possible existence of additional provisions which complete these regulations. Refer to all applicable national, international and local regulations or provisions.

## 16. OTHER INFORMATION

### Abbreviations and acronyms used in the safety data sheet:

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.  
ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways.  
RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail.  
IATA: International Air Transport Association.  
ICAO: Technical Instructions for the Safe Transport of Dangerous Goods by Air.  
IMDG: International Maritime Dangerous Goods.  
CAS: Chemical Abstracts Service.  
ATE: Acute Toxicity Estimate.  
LC50: Lethal Concentration to 50 % of a test population.  
LD50: Lethal Dose to 50% of a test population (Median Lethal Dose).  
EC<sub>50</sub>: 50% of maximal Effective Concentration.  
PBT: Persistent, Bioaccumulative and Toxic substance.  
vPvB: Very Persistent and Very Bioaccumulative.  
DNEL: Derived No Effect Level.  
PNEC: Predicted No Effect Concentration.  
REACH: The REACH etc. (Amendment etc.) (EU Exit) Regulations 2020 No. 1577.  
UN: United Nations.  
IBC: International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk (International Bulk Chemical Code).

**Classification abbreviations and acronyms:** Met. Corr. = Corrosive to metals.

Eye Dam. = Serious eye damage.

**Hazard statements in full:** H290 May be corrosive to metals.  
H318 Causes serious eye damage.

**Legal disclaimer:** The information contained in this SDS does not constitute a risk assessment, and should not replace the user's own assessment of risks as required by other health and safety legislation. This advice is given by Nexchem Ltd who accept no legal liability for it except otherwise provided by law. The information contained herein is based on the present state of our knowledge and is intended to describe our products from the point of view of safety requirements. It should not therefore be construed as guaranteeing specific properties.