

# SAFETY DATA SHEET

## Polyaluminum chloride solution

Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II, as amended by Commission Regulation (EU) 2015/830

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

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#### 1.1. Product identifier

**Product name** : Polyaluminum chloride solution  
**REACH Registration Number** : 01-2119531563-43  
**CAS-No.** : 1327-41-9  
**EC-No.** : 215-477-2  
**Other means of identification** : Aluminium chloride, basic / Polyaluminium chloride

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

**Use of the Sub-stance/Mixture** : Water treatment chemical, Hydrophobation of paper and board Use of substance in synthesis as a process chemical and as an intermediate. Products such as pH-regulators, flocculants, precipitants, neutralization agents Refer to attached exposure scenario Annex.

**Recommended restrictions on use** : There are no uses advised against.

#### 1.3. Details of the supplier of the safety data sheet

**Name** : GLI-THERM Sp. z o.o.  
**Address** : st. Rozwojowa 11, 44-338 Jastrzębie-Zdrój Poland  
**Regon** : 242850136  
**NIP/Tax No** : 6423178990  
**Telephone** : +48 733 525 533  
**E-mail** : [sandra.stachowicz@gli-therm.eu](mailto:sandra.stachowicz@gli-therm.eu)  
**Website address** : [www.gli-therm.eu](http://www.gli-therm.eu)

#### 1.4. Emergency telephone number

##### National advisory body/Poison Center:

**Ireland** : National Poisons Information Centre  
Emergency number:  
+353 1 809 2566 (Healthcare professionals-24/7) +353 1 809 2166 (public, 8am - 10pm, 7/7)

**United Kingdom** : National Poisons Information Service (Newcastle Centre)  
Emergency number:  
0844 892 0111 (UK only, 24/7, healthcare professionals only)

**Poland** : Szpital Praski p.w. Przemienienia Pańskiego Sp. z o.o.  
Emergency number:  
+48 22 619 66 54 or +48 22 619 08 97

Germany : Vergiftungs-Informationen-Zentrale Freiburg  
Emergency number: +49 (0) 761 19240

24 Hour Emergency Telephone : +(44)-8708200418 CHEMTREC

**Supplier**

Telephone number : +48 733 525 533

## SECTION 2: Hazards identification

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### 2.1. Classification of the substance or mixture

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

Corrosive to metals, Category 1 : **H290** May be corrosive to metals.  
Serious eye damage, Category 1 : **H318** Causes serious eye damage.

### 2.2. Label elements

#### Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :



Signal word : DANGER

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

#### Precautionary statements

Prevention : **P280** Wear protective gloves/ protective clothing/ eye protection/ face protection.  
**P234** Keep only in original container.

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/ doctor.  
**P390** Absorb spillage to prevent material damage.

### 2.3. Other hazards

Substance meets the criteria for **PBT** according to Regulation (EC) No. 1907/2006, Annex XIII : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT) at levels of 0.1% or higher.

Substance meets the criteria for **vPvB** according to Regulation (EC) No. 1907/2006, Annex XIII : This substance/mixture contains no components considered to be either very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

- Ecological information** : Ecological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.
- Toxicological information** : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.
- Other hazards which do not result in classification** : Heating above the decomposition temperature can cause formation of hydrogen chloride. May lower the pH of water and thus be harmful to aquatic organisms.

## SECTION 3: Composition/information on ingredients

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### 3.1. Substance

Chemical name	CAS-No. EC-No.	M-Factor, SCL, ATE	[ % w/w ]
Aluminium chloride, basic / Polyaluminium chloride	1327-41-9 215-477-2		>= 35 - < 45

For explanation of abbreviations see section 16.

Occupational exposure limits, if available, are listed in Section 8.

## SECTION 4: First aid measures

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### 4.1 Description of first aid measures

- General advice** : Show this safety data sheet to the doctor in attendance.
- Protection of first-aiders** : First Aid responders should pay attention to self-protection and use the recommended protective clothing.
- Eye contact** : Rinse immediately with plenty of water, also under the eyelids, for at least 30 minutes. Prevent rinsing water from flowing into the other eye. Continue rinsing eyes during transport to hospital.
- Inhalation** : If breathed in, move person into fresh air. If symptoms persist, seek medical advice.
- Skin contact** : Rinse with plenty of water. If symptoms persist, seek medical advice.
- Ingestion** : Rinse mouth with water. Do NOT induce vomiting. If symptoms persist, call a physician.

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

- Symptoms** : Corrosive effects. May cause irreversible eye damage. Blistering Irritation Pain

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

- Notes to physician** : Rinse with plenty of water.  
Symptomatic treatment.
- Specific treatments** : Symptomatic treatment.

### SECTION 5: Firefighting measures

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#### 5.1. Extinguishing media

- Suitable extinguishing media** : Not combustible. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Unsuitable extinguishing media** : No special requirements.

#### 5.2. Special hazards arising from the substance or mixture

- Specific hazards during fire-fighting** : Heating above the decomposition temperature can cause formation of hydrogen chloride. Exposure to decomposition products may be a hazard to health.

#### 5.3 Advice for firefighters

- Special protective equipment for fire-fighters** : In the event of fire, wear self-contained breathing apparatus.
- Further information** : If possible remove containers / tanks from the dangerous area.  
Cool containers/tanks with water spray.

### SECTION 6: Accidental release measures

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#### 6.1. Personal precautions, protective equipment and emergency procedures

- Personal precautions** : Handle in accordance with good industrial hygiene and safety practice. Ensure adequate ventilation. For personal protection see section 8. Use qualified, trained responders with the regulatory required level of PPE.

#### 6.2. Environmental precautions

- Environmental precautions** : Do not allow uncontrolled discharge of product into the environment.

#### 6.3. Methods and materials for containment and cleaning up

- Methods for cleaning up** : Clean-up methods - small spillage
- Dilute residues with water and then neutralize with lime or limestone powder to a solid consistency.  
Shovel or sweep up.  
Must be disposed of in accordance with local and national regulations.
- Clean-up methods - large spillage

Remove spill using a vacuum truck.  
Dilute residues with water and then neutralize with lime or limestone powder to a solid consistency.  
Shovel or sweep up remaining material.  
Must be disposed of in accordance with local and national regulations.

#### 6.4. Reference to other sections

See Sections 7 and 8 for proper handling and protective measures and Section 13 for proper waste disposal measures.

## SECTION 7: Handling and storage

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The information in this section contains generic advice and guidance.

### 7.1. Precautions for safe handling

- Technical measures** : Install appropriate equipment and wear appropriate personal protective equipment (see "8. Exposure control/personal protection").
- Advice on safe handling** : The work place and work methods shall be organized in such a way that direct contact with the product is prevented or minimized.  
For personal protection see section 8.  
Ensure adequate ventilation, especially in confined areas.  
Ensure that eyewash stations and safety showers are close to the workstation location.  
Keep away from incompatible materials.  
Contact with certain metals, e.g. aluminium and zinc, may form hydrogen gas, which in turn may form explosive mixtures of gases with air.  
Small amounts of hydrogen chloride may be released at temperatures above the boiling point.
- Advice on general occupational hygiene** : Handle in accordance with good industrial hygiene and safety practice.

### 7.2. Conditions for safe storage, including any incompatibilities.

- Requirements for storage rooms and tanks** : Keep away from incompatible materials.  
For quality reasons: Keep at temperatures above 0 °C. Keep at temperatures below 30 °C.
- Packaging material** : Suitable material: plastic (PE, PP, PVC), fiberglass-reinforced polyester, rubber-coated steel  
Unsuitable material: Avoid contact with unalloyed steel or galvanized surfaces., stainless steel (AISI 304), materials not resistant to acid, Copper, Aluminium, Iron, Zinc, brass, titanium.

### 7.3. Specific end use(s)

- Specific use(s)** : Do not use for other purposes than the identified uses.

## SECTION 8: Exposure controls/personal protection

The information in this section contains generic advice and guidance.

### 8.1. Control parameters

#### Occupational exposure limits

Substance name	End Use	Exposure routes	Potential health effects	Value
Aluminium chloride, basic / Polyaluminium chloride	Workers	Inhalation	Long-term systemic effects	16,4 mg/m <sup>3</sup>
	Workers	Dermal	Long-term systemic effects	4,6 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	4 mg/m <sup>3</sup>
Remarks:Quantitative				
	Consumers	Dermal	Long-term systemic effects	2,32 mg/kg bw/day
Remarks:Semi-quantitative				
	Consumers	Oral	Long-term systemic effects	2,3 mg/kg bw/day

### 8.2. Exposure controls

**Appropriate engineering controls** : Ensure adequate ventilation.

Individual protection measures

**Protective measures** : Eye wash bottle or emergency eye-wash fountain must be found in the work place. Ensure adequate ventilation.

**Eye/face protection** : Tightly fitting safety goggles. Eye wash bottle with pure water . (EN 166)

#### Hand protection

Material : PVC and neoprene gloves

Break through time : > 480 min

Rate of permeability : > 480 min

: Protective gloves complying with EN 374.  
Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. Gloves should be removed and replaced immediately if there is any indication of degradation or chemical breakthrough.

**Skin and body protection** : Wear protective clothing if necessary. Use rubber boots.

**Respiratory protection** : If significant amounts of vapour, mist or aerosol are present use respiratory protection. (filter P2)

**Environmental exposure controls**

- Soil** : Prevent product from entering the environment. Restrict the spread of the spillage by using inert absorbent material (sand, gravel). Cover the drains. Must be disposed of in accordance with local and national regulations.
- Water** : If the product contaminates rivers and lakes or drains inform respective authorities.

**SECTION 9: Physical and chemical properties**

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**9.1. Information on basic physical and chemical properties**

- Physical state : liquid
- Color : light yellow
- Odor : not significant
- Odor threshold : No data available
- Melting point/freezing point : -20 °C
- pH : < 1,0 (20 °C) Concentration: 100 %
- Initial boiling point and boiling range : 105 - 116 °C
- Flammability : The product is not flammable.
- Flash point : Not applicable, inorganic compound. In accordance with column 2 of REACH Annex VII, the study does not need to be conducted.
- Upper/lower flammability or explosive limits : Not applicable
- Density : 1,34 - 1,42 g/cm<sup>3</sup> (20 °C)
- Relative density : No data available
- Relative vapour density : similar to water
- Evaporation rate : similar to water
- Solubility in water at room temperature (20 °C) : miscible
- Partition coefficient: n-octanol/water : Not applicable inorganic compound
- Vapour pressure : < 1 bar (22 °C)
- Auto-ignition temperature : not auto-flammable
- Decomposition temperature : > 200 °C
- Viscosity, dynamic : 25 - 45 mPa.s (20 °C)
- Viscosity, kinematic : 22 mm<sup>2</sup>/s - 29 mm<sup>2</sup>/s

**9.2. Other information**

- Metal corrosion rate : May be corrosive to metals.
- Oxidizing properties : Not oxidizing
- Surface tension : Not relevant

## SECTION 10: Stability and reactivity

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### 10.1. Reactivity

Corrosive to metals.

Bases cause exothermic reactions.

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3. Possibility of hazardous reactions

Hazardous reactions : Bases cause exothermic reactions. Contact with certain metals (e.g. aluminium, zinc) may form explosive gas mixtures with air.

### 10.4. Conditions to avoid

Conditions to avoid : Avoid freezing. Avoid storage at high temperatures. Do not expose to temperatures above 200 °C.

### 10.5. Incompatible materials

Materials to avoid : chlorites  
hypochlorites  
sulphites  
galvanized surfaces  
Iron  
Strong bases

### 10.6 Hazardous decomposition products

Small amounts of hydrogen chloride may be released at temperatures above the boiling point.

## SECTION 11: Toxicological information

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

#### Acute toxicity

#### Product

Acute oral toxicity : Remarks: Based on available data, the classification criteria are not met.

#### Components

#### Aluminium chloride, basic / Polyaluminium chloride:

Acute oral toxicity : LD50 (Rat): > 2 000 mg/kg  
Method: OECD Test Guideline 401  
GLP: yes

Acute inhalation toxicity : LC50 (Rat): > 5,0 mg/l  
Exposure time: 4 h  
Test atmosphere: aerosol  
Method: OECD Test Guideline 403  
Test substance: Read-across (Analogy)

Acute dermal toxicity : LD50 (Rat): > 2 000 mg/kg  
Method: OECD Test Guideline 402  
Remarks: Read-across (Analogy)  
CAS-No. 39290-78-3



**Skin corrosion/irritation****Product**

Species : Rabbit  
Method : OECD Test Guideline 404  
Result : Not irritating.  
Remarks : Based on available data, the classification criteria are not met.

**Components****Aluminium chloride, basic / Polyaluminium chloride:**

Species : Rabbit  
Method : OECD Test Guideline 404  
Result : No skin irritation  
GLP : yes  
Remarks : (45% solution)

**Serious eye damage/eye irritation****Product**

Remarks : Causes serious eye damage.

**Components****Aluminium chloride, basic / Polyaluminium chloride:**

Species : Rabbit  
Method : OECD Test Guideline 405  
Result : Causes serious eye damage.  
GLP : yes  
Remarks : (45% solution)

**Respiratory or skin sensitisation****Product**

Remarks : Based on available data, the classification criteria are not met.

**Components****Aluminium chloride, basic / Polyaluminium chloride:**

Test Type : Magnusson & Kligman test  
Species : Guinea pig  
Assessment : Not sensitizing.  
Method : OECD Test Guideline 406  
Remarks : Read-across (Analogy)  
Test substance : CAS-No. 12042-91-0

**Germ cell mutagenicity****Product**

Genotoxicity in vitro : Remarks: Based on available data, the classification criteria are not met.

**Components****Aluminium chloride, basic / Polyaluminium chloride:**

Genotoxicity in vitro : Test Type: AMES test  
Test system: Mutagenicity (Salmonella mutation assay)  
Metabolic activation: with and without  
Method: OECD Test Guideline 471  
Result: negative

Test Type: micronucleus test  
Test system: In vitro mammalian cells  
Metabolic activation: with and without  
Method: OECD Test Guideline 487  
Result: negative

Test Type: Lymphoma  
Test system: In vitro gene mutation study in mammalian cells  
Metabolic activation: with and without  
Method: OECD Test Guideline 476  
Result: negative

### **Carcinogenic**

#### **Product**

Remarks : Based on available data, the classification criteria are not met.

#### **Components**

##### **Aluminium chloride, basic / Polyaluminium chloride:**

Species : Mouse  
Application Route : Oral  
NOAEL : 850 mg/kg bw/day

#### **Reproductive toxicity**

#### **Product**

Effects on fertility : Remarks: Based on available data, the classification criteria are not met.

#### **Components**

##### **Aluminium chloride, basic / Polyaluminium chloride:**

Effects on fertility : Test Type: Screening test  
Species: Rat, male and female  
Application Route: Oral  
General Toxicity - Parent: NOAEL: 1 000 mg/kg body weight  
Method: OECD Test Guideline 422  
Result: Not believed to be toxic for reproduction.  
GLP: yes  
Remarks: No known effect.

#### **Specific target organ toxicity - single exposure**

#### **Product**

Remarks : Based on available data, the classification criteria are not met.

**Components****Aluminium chloride, basic / Polyaluminium chloride:**

Assessment : The substance or mixture is not classified as specific target organ toxicant, single exposure.

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

Remarks : Based on available data, the classification criteria are not met.

**Components****Aluminium chloride, basic / Polyaluminium chloride:**

Assessment : The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

**Repeated dose toxicity****Product**

Remarks : Based on available data, the classification criteria are not met.

**Components****Aluminium chloride, basic / Polyaluminium chloride:**

Species : Rat  
NOAEL : 1 000 mg/kg  
Application Route : Oral  
Method : OECD 422  
Remarks : Systemic toxicity bw/day

NOAEL : 90 mg/kg  
Remarks : bw/day Calculated as Al

Species : Rat  
NOAEL : 200 mg/kg  
Application Route : Oral  
Method : OECD Test Guideline 422  
Remarks : bw/day Local effects

NOAEL : 18 mg/kg  
Remarks : bw/day Calculated as Al

Species : Rat  
NOAEL : 0,0153 mg/l  
Application Route : Inhalation  
Remarks : Read-across (Analogy)  
CAS-No. 12042-91-0

NOAEL : 0,0047 mg/l  
Application Route : Inhalation

Remarks : Calculated as Al

#### Aspiration toxicity

**Product** : No aspiration toxicity classification

#### Components

Aluminium chloride, basic /  
Polyaluminium chloride: : No aspiration toxicity classification

### 11.2 Information on other hazards

#### Endocrine disrupting properties

**Product** : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

#### Experience with human exposure

##### Product

General Information : Target Organs: Mucous membranes  
Remarks: Ingestion may cause nausea, vomiting, sore throat and stomach-ache.

Inhalation : Target Organs: Respiratory organs  
Symptoms: Inhalation may provoke the following symptoms:, cough and difficulties in breathing  
Remarks: dust/mist  
May cause irritation of respiratory tract.

Skin contact : Symptoms: Repeated or prolonged skin contact may cause:, dry skin, irritation

Eye contact : Symptoms: Contact with eyes causes a smarting pain and a flood of tears.

Ingestion : Symptoms: Ingestion may provoke the following symptoms:, nausea, irritation of mouth, oesophagus and stomach

## SECTION 12: Ecological information

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### 12.1. Toxicity

#### Product

Toxicity to fish : Remarks: This material is not classified as dangerous for the environment.  
At environmentally relevant pH 5,5 – 8, the solubility of aluminium is low. Aluminium salts dissociate with water resulting in rapid formation and precipitation of aluminium hydroxides. At pH <5.5, the free ion (Al<sup>3+</sup>) becomes the prevalent form, the increased availability at this pH is reflected in higher toxicity. At pH 6.0–7.5, solubility declines due to the presence of insoluble Al(OH)<sub>3</sub>. At higher pH (pH >8.0), the more soluble Al(OH)<sub>4</sub><sup>-</sup> species predominate, which again increases availability.

Aluminum salts must not be released to rivers and lakes in an uncontrolled way and pH variations around 5 - 5.5 should be avoided.

Toxicity to terrestrial organisms : Remarks: No data is available on the product itself.

## Components

### Aluminium chloride, basic / Polyaluminium chloride:

Toxicity to fish : NOEC (Danio rerio): > 1 000 mg/l  
Exposure time: 96 h  
Test Type: semi-static test  
Method: OECD Test Guideline 203  
GLP: yes

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 98 mg/l  
Test Type: semi-static test  
Method: OECD Test Guideline 202  
GLP: yes

Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (green algae)): 14 mg/l  
Exposure time: 72 h  
Test Type: static test  
Method: OECD Test Guideline 201  
Remarks: Read-across (Analogy)  
CAS-No. 39290-78-3

EC50 (Pseudokirchneriella subcapitata (green algae)): 0,24 mg/l  
Exposure time: 72 h  
Test Type: static test  
Method: OECD Test Guideline 201

NOEC (Pseudokirchneriella subcapitata (green algae)): 1 mg/l  
Exposure time: 72 h  
Test Type: static test  
Method: OECD Test Guideline 201  
Remarks: Read-across (Analogy)  
CAS-No. 39290-78-3

NOEC (Pseudokirchneriella subcapitata (green algae)): < 0,02 mg/l  
Exposure time: 72 h  
Test Type: static test  
Method: OECD Test Guideline 201

EC10 (Lemna minor (duckweed)): 2,175 mg/l  
Test Type: rate of growth

## 12.2 Persistence and degradability

### Product

Biodegradability : Remarks: When reacting with water on pH range 6 - 9 precipitates of aluminium hydroxides are formed.  
The methods for determining biodegradability are not applicable to inorganic substances.

### Components

#### Aluminium chloride, basic / Polyaluminium chloride:

Biodegradability : Remarks: The methods for determining the biological degradability are not applicable to inorganic substances.

Stability in water : Remarks: When reacting with water on pH range 5,8 - 8 precipitates of aluminium hydroxides are formed.

## 12.3 Bioaccumulative potential

### Product

Bioaccumulation : Remarks: No bioaccumulation is expected.

### Components

#### Aluminium chloride, basic / Polyaluminium chloride:

Partition coefficient: n-octanol/water : Remarks: Not applicable inorganic compound

## 12.4 Mobility in soil

Soil/water partition coefficient (KOC) : No data available

Mobility : No data available

## 12.5 Results of PBT and vPvB assessment

**Product**  
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.

**Components**  
**Hydrochloric acid**  
Assessment : This substance is not considered to be a PBT (Persistent, Bioaccumulation, Toxic). This substance is not considered to be vPvB (very Persistent nor very Bioaccumulating)

## 12.6 Endocrine disrupting properties

**Product**  
Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

## 12.7 Other adverse effects

**Product**  
Additional ecological information : May lower the pH of water and thus be harmful to aquatic organisms.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

<b>Product</b>	: Classified as hazardous waste. Must be disposed of in accordance with local and national regulations. Do not dispose of waste into sewer.
<b>Contaminated packaging</b>	: Classified as hazardous waste. Must be disposed of in accordance with local and national regulations.

## SECTION 14: Transport information

	ADR/RID	IMDG	IATA
<b>14.1. UN Number</b>	UN 3264	UN 3264	UN 3264
<b>14.2. UN Proper Shipping Name</b>	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Aluminium chloride, basic / Polyaluminium chloride)	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Aluminium chloride, basic / Polyaluminium chloride)	Corrosive liquid, acidic, inorganic, n.o.s. (Aluminium chloride, basic / Polyaluminium chloride)
<b>14.3. Transport Hazard Class(es)</b>	8	8	8
<b>14.4. Packing Group</b>	Packing group : III Classification Code : C1 Hazard Identification Number : 80 Labels : 8 Tunnel restriction code : (E)	Packing group : III Labels : 8 EmS Code : F-A, S-B	Packing instruction (cargo aircraft) : 856 Packing instruction (LQ) : Y841 Packing group : III Labels : Corrosive
<b>14.5. Environmental Hazards</b>	No	No	
<b>14.6. Special Precautions for users</b>	The product is classified as dangerous goods, as it is slightly corrosive to metals. The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.		

### 14.7 Maritime transport in bulk according to IMO instruments.

Not applicable for product as supplied.

## SECTION 15: Regulatory information

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

**Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals:**

Not applicable

**Volatile organic compounds:**

Not applicable

The components of this product are reported in the following inventories:

<b>IECSC</b>	:	All components of this product are included on the Chinese inventory or are not required to be listed on the Chinese inventory.
<b>TSCA</b>	:	All components of this product are included in the United States TSCA Chemical Inventory with Active Status or are not required to be listed on the United States TSCA Chemical Inventory.
<b>DSL</b>	:	All components of this product are included in the Canada Domestic Substance List (DSL) or are not required to be listed on the Canada Domestic Substance List (DSL).
<b>EINECS</b>	:	All components of this product are included in the European Inventory of Existing Chemical Substances (EINECS) or are not required to be listed on EINECS.
<b>TCSI</b>	:	This product's Taiwan Toxic Chemical Substances Control Act Inventory status has NOT been determined.
<b>KECI</b>	:	All components of this product are included in the Korean (ECL) inventory or are not required to be listed on the Korean (ECL) inventory.
<b>ENCS</b>	:	All components of this product are NOT included on the Japanese (ENCS) inventory.
<b>AIIC</b>	:	All components of this product are included in the Australian Inventory of Industrial Chemicals (AIIC) or are not required to be listed on the Australian Inventory of Industrial Chemicals (AIIC).
<b>NZIoC</b>	:	All components of this product are included in the New Zealand inventory (NZIoC) or are not required to be listed on the New Zealand inventory (NZIoC).
<b>PICCS</b>	:	All components of this product are included on the Philippine (PICCS) inventory or are not required to be listed on the Philippine (PICCS) inventory.

#### 15.2 Chemical Safety Assessment:

A Chemical Safety Assessment has been carried out for the main component.

## SECTION 16: Other information

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The data is confirmed based on the state of our knowledge, but does not determine how the production properties and cannot be used to justify legally binding contracts.

Abbreviations; acronyms and full text of H-Statements

<b>H290</b>	:	May be corrosive to metals.
<b>H301</b>	:	Toxic if swallowed.
<b>H302</b>	:	Harmful if swallowed.
<b>H312</b>	:	Harmful in contact with skin.
<b>H314</b>	:	Causes severe skin burns and eye damage.
<b>H315</b>	:	Causes skin irritation.
<b>H317</b>	:	May cause an allergic skin reaction.



<b>H318</b>	:	Causes serious eye damage.
<b>H331</b>	:	Toxic if inhaled.
<b>H334</b>	:	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
<b>H335</b>	:	May cause respiratory irritation.
<b>H341</b>	:	Suspected of causing genetic defects.
<b>H350i</b>	:	May cause cancer by inhalation.
<b>H360D</b>	:	May damage the unborn child.
<b>H372</b>	:	Causes damage to organs through prolonged or repeated exposure.
<b>H400</b>	:	Very toxic to aquatic life.
<b>H410</b>	:	Very toxic to aquatic life with long lasting effects.
<b>REACH</b>	:	Registration, Evaluation, Authorisation and Restriction of Chemical
<b>MARPOL</b>	:	(from Marine Pollutant) International Convention for the Prevention of Marine Pollution from Ships
<b>N/A</b>	:	Not applicable
<b>N/D</b>	:	Not determined
<b>NE</b>	:	Not established
<b>VOC</b>	:	Volatile Organic Compound
<b>AICS</b>	:	Australian Inventory of Chemical Substances
<b>AIHA WEEL</b>	:	American Industrial Hygiene Association Workplace Environmental Exposure Limits
<b>DSL</b>	:	Domestic Substance List (Canada)
<b>ELINCS</b>	:	European List of Notified Chemical Substances
<b>ENCs</b>	:	Existing and new Chemical Substances (Japanese inventory)
<b>IECSC</b>	:	Inventory of Existing Chemical Substances in China
<b>KECI</b>	:	Korean Existing Chemicals Inventory
<b>NDSL</b>	:	Non-Domestic Substances List (Canada)
<b>NZIoC</b>	:	New Zealand Inventory of Chemicals
<b>PICCS</b>	:	Philippine Inventory of Chemicals and Chemical Substances
<b>TLV</b>	:	Threshold Limit Value (American Conference of Governmental Industrial Hygienists)
<b>TSCA</b>	:	Toxic Substances Control Act (U.S. inventory)
<b>UVCB</b>	:	Substances of Unknown or Variable composition, Complex reaction products or Biological materials
<b>IBC Code</b>	:	International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
<b>UN</b>	:	United Nations (also UNO: United Nations Organization)
<b>NOEC</b>	:	No Observed Effect Concentration
<b>NOELR</b>	:	No Observable Effect Loading Rate
<b>OECD</b>	:	Organization for Economic Co-operation and Development
<b>ASTM</b>	:	American Society for Testing and Materials
<b>WAF</b>	:	Water Accommodated Fraction
<b>ADR</b>	:	Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)
<b>IMDG</b>	:	International Maritime Code for Dangerous Goods
<b>IATA</b>	:	International Air Transport Association

<b>GHS</b>	: Globally Harmonised System of Classification and Labeling of Chemicals
<b>EINECS</b>	: European Inventory of Existing Commercial Chemical Substances
<b>CAS</b>	: Chemical Abstracts Service (division of the American Chemical Society)
<b>DNEL</b>	: Derived No-Effect Level (REACH)
<b>PNEC</b>	: Predicted No-Effect Concentration (REACH)
<b>LC</b>	: Lethal Concentration
<b>LD</b>	: Lethal Dose
<b>LL</b>	: Lethal Loading
<b>EC</b>	: Effective Concentration
<b>EL</b>	: Effective Loading
<b>LC50</b>	: Lethal concentration, 50 percent
<b>LD50</b>	: Lethal dose, 50 percent
<b>PBT</b>	: Persistent, Bioaccumulative and Toxic
<b>vPvB</b>	: very Persistent and very Bioaccumulative
<b>Acute Tox, 4</b>	: Acute toxicity - Category 4
<b>Notice to reader</b>	: The information contained herein is accurate to the latest knowledge and describes the product from the point of view of help and environmental protection as well as safe handling. The information presented in this SDS refers to the technical product only and will not apply to any processed product. Final determination of the suitability of any materials for the chosen application(s) is the sole responsibility of the user"