

## SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH) as amended

### Aluminium chloride hexahydrate

|               |                 |         |     |
|---------------|-----------------|---------|-----|
| Creation date | 03rd March 2022 | Version | 3.0 |
| Revision date | 30th April 2024 |         |     |

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

- 1.1. Product identifier**  
 Substance / mixture Aluminium chloride hexahydrate substance  
 Chemical name Aluminium chloride hexahydrate  
 CAS number 7784-13-6  
 Index number 013-003-00-7  
 EC (EINECS) number 231-208-1  
 Registration number 01-2119459371-39-xxxx
- 1.2. Relevant identified uses of the substance or mixture and uses advised against**  
**Substance's intended use**  
 Chemical production, analytical chemistry, laboratory synthesis, industrial applications.  
**Substance uses advised against**  
 The product should not be used in ways other than those referred in Section 1.
- 1.3. Details of the supplier of the safety data sheet**  
**Supplier**  
 Name or trade name Ing. Petr Švec - PENTA s.r.o.  
 Address Radiová 1122/1, Praha 10, 102 00  
 Czech Republic  
 Identification number (CRN) 02096013  
 VAT Reg No CZ02096013  
 Phone +420 226 060 681  
 E-mail info@pentachemicals.eu  
 Web address www.pentachemicals.eu
- Competent person responsible for the safety data sheet**  
 Name Ing. Petr Švec - PENTA s.r.o.  
 E-mail info@pentachemicals.eu
- 1.4. Emergency telephone number**  
 European emergency number: 112 112

#### SECTION 2: Hazards identification

- 2.1. Classification of the substance or mixture**  
**Classification of the substance in accordance with Regulation (EC) No 1272/2008**  
 The substance is classified as dangerous.

Skin Corr. 1B, H314  
 Eye Dam. 1, H318

**Most serious adverse effects on human health and the environment**

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

- 2.2. Label elements**

**Hazard pictogram**



**Signal word**

Danger

**Dangerous substance**

Aluminium chloride hexahydrate  
 (Index: 013-003-00-7; CAS: 7784-13-6)

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#### Hazard statements

H314 Causes severe skin burns and eye damage.

#### Precautionary statements

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 doctor.

#### 2.3. Other hazards

The substance does not have endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605. Substance does not meet the criteria for PBT or vPvB in accordance with Annex XIII of Regulation (EC) No. 1907/2006 (REACH) as amended. Dust may form explosive mixture with air.

### SECTION 3: Composition/information on ingredients

#### 3.1. Substances

##### Chemical characterization

The substance specified below.

| Identification numbers  | Substance name  | Content in % weight | Classification according to Regulation (EC) No 1272/2008 | Note |
|---|---|---------------------|--|------|
| Index: 013-003-00-7<br>CAS: 7784-13-6<br>EC: 231-208-1<br>Registration number:<br>01-2119459371-39-<br>xxxx | <b>substance main component</b><br>Aluminium chloride hexahydrate | ≥99                 | Skin Corr. 1B, H314<br>Eye Dam. 1, H318                  |      |

Full text of all classifications and hazard statements is given in the section 16.

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

Take care of your own safety. If any health problems are manifested or if in doubt, inform a doctor and show him information from this safety data sheet. If unconscious, put the person in the stabilized (recovery) position on his side with his head slightly bent backwards and make sure that airways are free; never induce vomiting. If the person vomits by himself, make sure that the vomit is not inhaled. In life threatening conditions first of all provide resuscitation of the affected person and ensure medical assistance. Respiratory arrest - provide artificial respiration immediately. Cardiac arrest - provide indirect cardiac massage immediately.

##### If inhaled

Terminate the exposure immediately; move the affected person to fresh air. Take care of your own safety, do not let the affected person walk! Beware of the contaminated clothes. Depending on the situation, call the medical rescue service and ensure medical treatment considering the frequent need of further observation for at least 24 hours.

##### If on skin

Remove contaminated clothes. Take off any rings, watches, bracelets before or during washing if worn in the contaminated areas of the skin. Rinse contaminated areas with a flow of water, lukewarm at best, for 10-30 minutes; do not use any brush, soap or neutralizers. Depending on the situation, call the medical rescue service and always ensure medical treatment. Rinse cautiously with water for several minutes. Rinse skin with water or shower.

##### If in eyes

Do not rub your eyes - it could lead to mechanical damage of the cornea. Rinse eyes immediately with a flow of running water, open the eyelids (also using force if needed); remove contact lenses immediately if worn by the affected person. No neutralization should be performed in any case! Rinsing should be continued for 10-30 minutes from the inner to the outer eye corner to make sure that the other eye is not involved. Depending on the situation, call medical rescue service or ensure medical treatment as promptly as possible. Everyone must be referred for treatment even if affected only a little.

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**If swallowed**

RINSE THE MOUTH WITH WATER IMMEDIATELY AND LET THE PERSON DRINK 2-5 dl of cold water to reduce the heating effect of the corrosive substance. Consuming larger amounts of liquid is not advisable as it may induce vomiting and potential inhaling of the corrosive substances in the lungs. The affected person must not be forced to drink, particularly if already feeling pain in the mouth or throat. In this case let the affected person only rinse the mouth with water. DO NOT PROVIDE ACTIVATED CARBON! Depending on the situation, call medical rescue service or ensure medical treatment as promptly as possible.

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

**If inhaled**

Inhaling dust can cause corrosion of the breathing system.

**If on skin**

Causes severe skin burns.

**If in eyes**

Causes serious eye damage.

**If swallowed**

Corrosion of the digestion system can occur.

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

Symptomatic treatment.

#### SECTION 5: Firefighting measures

**5.1. Extinguishing media**

**Suitable extinguishing media**

Alcohol-resistant foam, carbon dioxide, powder, water spray jet, water mist.

**Unsuitable extinguishing media**

Water - full jet.

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

In the event of fire, carbon monoxide, carbon dioxide and other toxic gases may arise. Inhalation of hazardous degradation (pyrolysis) products may cause serious health damage.

**5.3. Advice for firefighters**

Self-Contained Breathing Apparatus (SCBA) with a chemical protection suit only where personal (close) contact is likely. Use a self-contained breathing apparatus and full-body protective clothing. Do not allow run-off of contaminated fire extinguishing material to enter drains or surface and ground water.

#### SECTION 6: Accidental release measures

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

Use personal protective equipment for work. Follow the instructions in the Sections 7 and 8. Do not inhale dust. Prevent contact with skin and eyes.

**6.2. Environmental precautions**

Prevent contamination of the soil and entering surface or ground water.

**6.3. Methods and material for containment and cleaning up**

Place the product mechanically in an appropriate manner. Dispose of the collected material according to the instructions in the section 13.

**6.4. Reference to other sections**

See the Section 7, 8 and 13.

#### SECTION 7: Handling and storage

**7.1. Precautions for safe handling**

Do not inhale dust. Prevent contact with skin and eyes. Wash hands and exposed parts of the body thoroughly after handling. Use personal protective equipment as per Section 8. Observe valid legal regulations on safety and health protection.

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

Store in tightly closed containers in cold, dry and well ventilated areas designated for this purpose. Store locked up.

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**7.3. Specific end use(s)**  
not available

#### SECTION 8: Exposure controls/personal protection

**8.1. Control parameters**  
**DNEL**

| Aluminium chloride hexahydrate |                   |                     |                          |                     |        |
|--------------------------------|-------------------|---------------------|--------------------------|---------------------|--------|
| Workers / consumers            | Route of exposure | Value               | Effect                   | Value determination | Source |
| Workers                        | Inhalation        | 1 mg/m <sup>3</sup> | Chronic effects local    |                     |        |
| Workers                        | Inhalation        | 2 mg/m <sup>3</sup> | Acute effects local      |                     |        |
| Consumers                      | Oral              | 0.3 mg/kg bw/day    | Chronic effects systemic |                     |        |

**8.2. Exposure controls**

Follow the usual measures intended for health protection at work and especially for good ventilation. This can be achieved only by local suction or efficient general ventilation. Do not eat, drink and smoke during work. Wash your hands thoroughly with water and soap after work and before breaks for a meal and rest.

**Eye/face protection**

Protective goggles or face shield (based on the nature of the work performed).

**Skin protection**

Hand protection: Protective gloves resistant to the product (nitrile rubber). When choosing appropriate thickness, material and permeability of the gloves, observe recommendations of their particular manufacturer. Observe other recommendations of the manufacturer. Other protection: protective workwear. Contaminated skin should be washed thoroughly.

**Respiratory protection**

Use a mask with anti-dust filter when the exposition limits of the substances are exceeded or at the place with insufficient ventilation.

**Thermal hazard**

Not available.

**Environmental exposure controls**

Observe usual measures for protection of the environment, see Section 6.2.

#### SECTION 9: Physical and chemical properties

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

|  |                           |
|--|---------------------------|
| Physical state   | solid                     |
| Colour   | white                     |
| Odour  | without fragrance         |
| Melting point/freezing point                             | 100 °C                    |
| Boiling point or initial boiling point and boiling range | data not available        |
| Flammability   | data not available        |
| Lower and upper explosion limit                          | data not available        |
| Flash point  | data not available        |
| Auto-ignition temperature                                | data not available        |
| Decomposition temperature                                | data not available        |
| pH   | 2.5-3.5 (50g/l% solution) |
| Kinematic viscosity                                      | data not available        |
| Solubility in water                                      | data not available        |
| Partition coefficient n-octanol/water (log value)        | data not available        |
| Vapour pressure  | 1 at 20 °C                |
| Density and/or relative density                          |                           |

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|                          |                         |
|--------------------------|-------------------------|
| Density                  | 2.398 g/cm <sup>3</sup> |
| Relative vapour density  | data not available      |
| Particle characteristics | data not available      |
| Form                     | crystalline substance   |

**9.2. Other information**  
not available

#### SECTION 10: Stability and reactivity

**10.1. Reactivity**

The substance is non-flammable.

**10.2. Chemical stability**

The product is stable under normal conditions.

**10.3. Possibility of hazardous reactions**

Unknown.

**10.4. Conditions to avoid**

The product is stable and no degradation occurs under normal use. Protect against flames, sparks, overheating and against frost.

**10.5. Incompatible materials**

Protect against strong acids, bases and oxidizing agents.

**10.6. Hazardous decomposition products**

Not developed under normal uses. Dangerous outcomes such as carbon monoxide and carbon dioxide are formed at high temperature and in fire.

#### SECTION 11: Toxicological information

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

No toxicological data is available for the substance.

**Acute toxicity**

Based on available data the classification criteria are not met.

| Aluminium chloride hexahydrate |                  |             |               |                         |     |
|--------------------------------|------------------|-------------|---------------|-------------------------|-----|
| Route of exposure              | Parameter        | Value       | Exposure time | Species                 | Sex |
| Oral                           | LD <sub>50</sub> | 3311 mg/kg  |               | Rat (Rattus norvegicus) |     |
| Dermal                         | LD <sub>50</sub> | >2000 mg/kg |               | Rabbit                  |     |

**Skin corrosion/irritation**

Causes severe skin burns and eye damage.

**Serious eye damage/irritation**

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

**Respiratory or skin sensitisation**

No data available for the substance. Based on available data the classification criteria are not met.

**Germ cell mutagenicity**

No data available for the substance. Based on available data the classification criteria are not met.

**Carcinogenicity**

No data available for the substance. Based on available data the classification criteria are not met.

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**Reproductive toxicity**

No data available for the substance. Based on available data the classification criteria are not met.

**Toxicity for specific target organ - single exposure**

No data available for the substance. Based on available data the classification criteria are not met.

**Toxicity for specific target organ - repeated exposure**

No data available for the substance. Based on available data the classification criteria are not met.

**Aspiration hazard**

No data available for the substance. Based on available data the classification criteria are not met.

**11.2. Information on other hazards**

The substance does not have endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605.

**SECTION 12: Ecological information**

**12.1. Toxicity**

No data available for the substance. Based on available data the classification criteria are not met.

**12.2. Persistence and degradability**

No data available for the substance.

**12.3. Bioaccumulative potential**

No data available for the substance.

**12.4. Mobility in soil**

No data available for the substance.

**12.5. Results of PBT and vPvB assessment**

Product does not contain any substance meeting the criteria for PBT or vPvB in accordance with the Annex XIII of Regulation (EC) No 1907/2006 (REACH) as amended.

**12.6. Endocrine disrupting properties**

This substance does not have endocrine disrupting properties with respect to non-target organisms as it does not meet the criteria set out in section B of Regulation (EU) No 2017/2100.

**12.7. Other adverse effects**

Not available.

**SECTION 13: Disposal considerations**

**13.1. Waste treatment methods**

Hazard of environmental contamination; dispose of the waste in accordance with the local and/or national regulations. Proceed in accordance with valid regulations on waste disposal. Any unused product and contaminated packaging should be put in labelled containers for waste collection and submitted for disposal to a person authorised for waste removal (a specialized company) that is entitled for such activity. Do not empty unused product in drainage systems. The product must not be disposed of with municipal waste. Empty containers may be used at waste incinerators to produce energy or deposited in a dump with appropriate classification. Perfectly cleaned containers can be submitted for recycling.

**Waste management legislation**

Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste, as amended. Decision 2000/532/EC establishing a list of wastes, as amended.

**SECTION 14: Transport information**

**14.1. UN number or ID number**

not subject to transport regulations

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- 14.2. UN proper shipping name**  
not relevant
- 14.3. Transport hazard class(es)**  
not relevant
- 14.4. Packing group**  
not relevant
- 14.5. Environmental hazards**  
not relevant
- 14.6. Special precautions for user**  
not available
- 14.7. Maritime transport in bulk according to IMO instruments**  
not relevant

#### SECTION 15: Regulatory information

- 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**  
Regulation (EC) No. 1907/2006 of the European Parliament and of the Council of 18th December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing the European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No. 793/93 and Commission Regulation (EC) No. 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, as amended. REGULATION (EC) No. 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL as amended. Commission Regulation (EU) 2020/878 of 18 June 2020 amending Annex II to Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).
- 15.2. Chemical safety assessment**  
A chemical safety assessment has not been carried out.

#### SECTION 16: Other information

##### A list of standard risk phrases used in the safety data sheet

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

##### Guidelines for safe handling used in the safety data sheet

- 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 doctor.

##### Other important information about human health protection

The product must not be - unless specifically approved by the manufacturer/importer - used for purposes other than as per the Section 1. The user is responsible for adherence to all related health protection regulations.

##### Key to abbreviations and acronyms used in the safety data sheet

- ADR European agreement concerning the international carriage of dangerous goods by road
- BCF Bioconcentration Factor
- CAS Chemical Abstracts Service
- CLP Regulation (EC) No 1272/2008 on classification, labelling and packaging of substance and mixtures
- EC Identification code for each substance listed in EINECS
- EINECS European Inventory of Existing Commercial Chemical Substances
- EmS Emergency plan
- EU European Union
- EuPCS European Product Categorisation System
- IATA International Air Transport Association

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|                  |   |
|------------------|---|
| IBC              | International Code For The Construction And Equipment of Ships Carrying Dangerous Chemicals       |
| ICAO             | International Civil Aviation Organization   |
| IMDG             | International Maritime Dangerous Goods  |
| IMO              | International Maritime Organization   |
| INCI             | International Nomenclature of Cosmetic Ingredients  |
| ISO              | International Organization for Standardization  |
| IUPAC            | International Union of Pure and Applied Chemistry   |
| LD <sub>50</sub> | Lethal dose of a substance in which it can be expected death of 50% of the population             |
| log Kow          | Octanol-water partition coefficient   |
| OEL              | Occupational Exposure Limits  |
| PBT              | Persistent, Bioaccumulative and Toxic   |
| ppm              | Parts per million   |
| REACH            | Registration, Evaluation, Authorisation and Restriction of Chemicals                              |
| RID              | Agreement on the transport of dangerous goods by rail   |
| UN               | Four-figure identification number of the substance or article taken from the UN Model Regulations |
| UVCB             | Substances of unknown or variable composition, complex reaction products or biological materials  |
| VOC              | Volatile organic compounds  |
| vPvB             | Very Persistent and very Bioaccumulative  |
| Eye Dam.         | Serious eye damage  |
| Skin Corr.       | Skin corrosion  |

#### Training guidelines

Inform the personnel about the recommended ways of use, mandatory protective equipment, first aid and prohibited ways of handling the product.

#### Recommended restrictions of use

not available

#### Information about data sources used to compile the Safety Data Sheet

REGULATION (EC) No. 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL (REACH) as amended. REGULATION (EC) No. 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL as amended. Data from the manufacturer of the substance / mixture, if available - information from registration dossiers.

#### The changes (which information has been added, deleted or modified)

The version 3.0 replaces the SDS version from 28 March 2023. Changes were made in sections 2 and 16.

#### More information

Classification procedure - calculation method.

#### Statement

The safety data sheet provides information aimed at ensuring safety and health protection at work and environmental protection. The provided information corresponds to the current status of knowledge and experience and complies with valid legal regulations. The information should not be understood as guaranteeing the suitability and usability of the product for a particular application.