# SAFETY DATA SHEET
# Aluminum Chlorohydrate, ACH

**Commission Regulation (EU) 2020/878 of 18 June 2020.**
**According to Regulation (EC) No 1907/2006, Annex II, as amended.**
**According to the REACH etc. (Amendment etc.) (EU Exit) Regulations 2020 No. 1577, as amended.**

## SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

### 1.1. Product identifier

| | |
|---|---|
| **Product name** | **Aluminum Chlorohydrate, ACH** |
| **Other names** | Aluminum Chlorohydrate Aqueous Solution<br>Aluminium Chloride Hydroxide |
| **CAS No** | 12042-91-0 |
| **Chemical formula** | $Al_2ClH_5O_5$ |

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

| | |
|---|---|
| **Identified uses** | Flocculation/coagulation (e.g. drinking and wastewater treatment). |
| **Uses advised against** | Do not use for other purposes than the identified uses. |

## SECTION 2: HAZARDS IDENTIFICATION

### 2.1. Classification of the substance or mixture

**Classification (EC 1272/2008)**

| | |
|---|---|
| Physical and Chemical Hazards | Corrosive to Metals, Category 1-H290 |
| Human Health Hazards | Not classified |
| Environment Hazards | Not classified. |
| | The Full Text for all Hazard Statements are Displayed in Section 16. |

### 2.2. Label elements

**Label In Accordance With (EC) No. 1272/2008 CAS No:** 12042-91-0

| | |
|---|---|
| **Signal Word** | Warning |

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**Hazard Statements**

| | |
|---|---|
| H290 | May be corrosive to metals. |

**Precautionary Statements**

| | |
|---|---|
| P234 | Keep only in original container. |
| P390 | Absorb spillage to prevent material damage. |
| P406 | Store in corrosive resistant container with a resistant inner liner. |
| P501 | Dispose of contents/ container to an approved waste disposal plant |

**2.3. Other hazards**

The substance does not meet the criteria for PBT or vPvB in accordance with Annex XIII of the regulation.
There are no other hazards than the ones listed above.

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

**3.1. Substances**

| | |
|---|---|
| **Product Name** | Aluminum Chlorohydrate |
| **Content** | 100 % |
| **CAS-No.** | 12042-91-0 |
| **EC No.** | 234-933-1 |

**Composition Comments**

- The data shown are in accordance with the latest EC Directives.

**3.2. Mixture**

Not Applicable. This product is a substance.

## SECTION 4: FIRST AID MEASURES

**4.1. Description of first aid measures**

**Inhalation**
Place victims in fresh air, rinse nose and mouth with water. Get medical assistance..

**Ingestion**
Rinse the mouth with water and drink plenty of water. Avoid vomiting. Get medical assistance immediately.

**Skin contact**
Remove polluted clothing and wash thoroughly with soap and water.

**Eye contact**
Rinse immediately with water (10-15 minutes). Get medical assistance.

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

Acute: Pain because of burning.
Delayed: The burning will continue if you do not rinse long enough with water.

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

Look at section 4.1.

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## SECTION 5: FIREFIGHTING MEASURES

**5.1. Extinguishing media**
The product is not inflammable.

**5.2. Special hazards arising from the substance or mixture**
When heated the product may develop HCl fumes.

**5.3. Advice for firefighters**

**Special Protective Actions for Fire-fighters**
A respirator is to be used during indoor fire.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

**6.1. Personal precautions, protective equipment and emergency procedures**
Refer to protective measures listed in section “Handling and storage”. Wear protective suit and boots. If dust, aerosols or mist are formed, use a half mask with combination filter B/P2.

**6.2. Environmental precautions**
Cover the drains to prevent the product from entering the environment.
If the product contaminates rivers and lakes or drains inform the relevant authorities.

**6.3. Methods and material for containment and cleaning up**
Remove larger spills using a vacuum truck. Sweep or shovel up smaller spills and residues. Must be disposed of in accordance with local and national regulations.

**6.4. Reference to other sections**
For personal protection, see section 8.
See section 11 for additional information on health hazards. For waste disposal, see section 13.

## SECTION 7: HANDLING AND STORAGE

**7.1. Precautions for safe handling**
The workplace and work methods shall be organized in such a way that direct contact with the product is prevented or minimized. Wear gloves in suitable material such as PVC, Neoprene or Natural rubber. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also consider the specific local conditions under which the product is used, such as the danger of cuts, abrasion and contact time. Wear safety goggles.

**7.2. Conditions for safe storage, including any incompatibilities**
Keep away from incompatible products. Avoid freezing. Avoid high temperatures.
Packaging material
Plastic (PE, PP, PVC), Fiberglass-reinforced polyester, Epoxy-coated concrete, Titanium, Acidproof or rubber-coated steel.
Materials to avoid
Nonacid-proof metals (such as aluminum, copper and iron), Bases, Unalloyed steel, Galvanized surfaces.

**7.3. Specific end use(s)**
Flocculation/coagulation (e.g., drinking and wastewater treatment).

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## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1. Control parameters

Threshold limiting value: Aluminium, dissolved salts, measured as Al: 1 mg/m3.
Hydrogen chloride: 7 mg/m3 (peak value).
Carry out exposure control measures to observe limiting value.

### 8.2. Exposure controls

**Engineering measures**
The workplace and work methods shall be organized in such a way that direct contact with the product is prevented or minimized.

**Respiratory equipment**
When handling generated steam/aerosols, sufficient ventilation is required. If sufficient ventilation is not obtainable, approved respirator with filter type E-[P2] is required..

**Hand protection**
Wear protective gloves. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

**Eye protection**
Protect eyes with approved goggles or face shield. Access to eye wash stations and, if relevant, an emergency shower is required.

**Protective measures**
Handle in accordance with good industrial hygiene and safety practice. Wear suitable protective clothing, gloves and eye/face protection. Avoid protective gloves, clothes and shoes made from the following materials: Leather

**Skin protection**
Protect skin with chemical resistant protective gloves, clothes with long sleeves and long legs, protective shoes and if necessary, an apron.

**Termal hazards**
When heated the product may develop HCl fumes. A respirator is to be used during indoor fire.

**Environmental exposure controls**
Avoid all outlets into drainage system / ground – e.g., by establishing a drip plate or basin.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

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

| | |
|---|---|
| **Appearance** | Liquid |
| **Colour** | Clear |
| **Odour** | Faint of hydrogen chloride |
| **Melting point** | No information available |
| **Initial boiling point and range** | No information available |
| **pH Value** | min :0,8 |
| **Decomposition temperature** | No information available |

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| | |
|---|---|
| **Flash point** | The product is not flammable. |
| **Flammability (solid, gas)** | Not applicable |
| **Upper flammability limit (UFL)** | Not applicable |
| **Lower flammability limit (LFL)** | Not applicable |
| **Relative density / Density** | min 1,4 g/cm$^3$ |
| **Solubility** | Soluble in water. |
| **Vapour pressure** | No information available |
| **Viscosity, kinematic** | No information available |
| **Viscosity, dynamic** | No information available |
| **Partition coefficient n-octanol/water** | No information available |
| **Explosive properties** | Explosion danger: |
| | Remarks: With certain materials (see section 10). |
| | Remarks: In case of heating: |
| **Oxidising properties** | Remarks: Strong oxidizer |
| **Particle characteristics** | No data available. |

**9.2. Other information**

| | |
|---|---|
| **Bulk density** | No data available. |
| **Specific gravity (20°C/4°C)** | 1.20 |
| **Molecular weight** | 34.01 g/mol |

## SECTION 10: STABILITY AND REACTIVITY

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

**10.2. Chemical stability**
Stable under normal conditions.

**10.3. Possibility of hazardous reactions**
Refer to section 10.1 and 10.5..

**10.4. Conditions to avoid**
Excessive heating after water evaporation for long persiods of time can result in the evolution of HCl.

**10.5. Incompatible materials**
Will react with caustics to form aluminium hydroxides. Can corrode ordinary grades of steel.

**10.6. Hazardous decomposition products**
HCl can be evolved during high temperature heating for extended persiods of time.

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## SECTION 11: TOXICOLOGICAL INFORMATION

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

**1272/2008 Acute toxicity**
Based on available data the classification criteria are not met.

**Acute Oral toxicity:**
- LD50 = 9187 mg/kg bw (OECD 401, Key, rel.2)
- LD50 > 2000 mg/kg bw (OECD 401, Supp, rel.2)

**Acute dermal toxicity**
LD50 > 2000 mg/kg bw (OECD 402, Key, rel.2)

**Acute inhalation toxicity:**
An aqueous suspension in deionised water was tested. 1 < LC50(aqueous suspension) < 5 mg/L (OECD 403, GLP, Supp, rel.4).

**Skin corrosion/irritation**
- Not irritating (OECD 404, Rel.2, K)

**Serious eye damage/irritation**
- Not irritating (OECD 405, GLP, Rel. 1, K)

**Respiratory or skin sensitisation**
Based on available data the classification criteria are not met.
Not a skin sensitiser (OECD406 GPMT, GLP, Key, rel.1

**Germ cell mutagenicity (In Vitro/ In Vivo)**
Based on available data the classification criteria are not met.
Ames bacterial mutation test: not mutagenic with and without metabolic activation.
Mouse lymphoma mammalian cell mutation test: not mutagenic with and without metabolic activation.
Micronucleus in mammalian cells: not clastogenic and not aneugenic.

**Carcinogenicity**
In agreement with the general scientific concensus, the available data on carcinogenicity provides sufficient evidence that aluminium chloride hydroxide sulphate is not carcinogenic to animals or to humans.

**Reproductive Toxicity**
Based on the available data, Dialuminium chloride pentahydroxide is not classified for the toxicity to reproduction according to the Regulation (EC) No. 1272/2008 (CLP) and to the GHS.
Dialuminium chloride pentahydroxide is not classified for the lactation according to the Regulation (EC) No. 1272/2008 (CLP) and to the GHS.

**STOT Specific target organ toxicity - single exposure**
Based on available data the classification criteria are not met

**STOT Specific target organ toxicity - repeated exposure**
Based on available data the classification criteria are not met.

**Aspiration hazard**
Based on available data the classification criteria are not met.

### 11.2. Information on other hazards
No further information is available

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## SECTION 12: ECOLOGICAL INFORMATION

**12.1. Ecotoxicity effects**

According to the available read-across studies, the most sensitive aquatic organism seems to be the fish Salvelinus fontinali (long-term toxicity test), with a 60-days NOEC of 13 µg/L based on geometric mean of measured concentrations of aluminium sulphate (Cleveland, 1989).

Both key studies (activated sludge respiration inhibition tests) available to evaluate the toxicity on microorganisms (using polyaluminium chloride hydroxide sulphate and aluminium chloride) did not show any effect on microorganisms. An EC10 of 200 mg/L was obtained with aluminium chloride

**12.2. Persistence and degradability**

The substance is inorganic. By reaction with water insoluble Al(OH)3 and Cl- is formed. In wastewater treatment plants the substance precipitates as Al(OH)3 or AlPO4.

**12.3. Bioaccumulative potential**

No data available. On behalf of known data about aluminium it has been estimated that the bio-accumulative potential in water environments at neutral pH is low (estimated steady state bio-concentration factor (BCFs) for Al is 215 at pH 5.3, 123 at pH 6.1 and 36 at pH 7.2).

The bio-accumulative potential for Al in soil is also expected to be low.

**12.4. Mobility in soil**

The substance is not stable in nature. By reaction with water insoluble Al(OH)3 and Cl- is formed.

**12.5. Results of PBT and vPvB 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.

**12.6. Endocrine disrupting properties**

This product does not contain any known or suspected endocrine disruptors.

**12.7. Other adverse effects**

## SECTION 13: DISPOSAL CONSIDERATIONS

**13.1. Waste treatment methods**

The product is to be disposed of according to regulations on chemical disposal, and therefore it must not be led into the sewer. The product may be returned to the manufacturer if a previous arrangement has been made. Packing (cans and tanks) is to be recycled or incinerated.

## SECTION 14: TRANSPORT INFORMATION

| ADR | IMDG | IATA | ADN | RID |
|---|---|---|---|---|
| **14.1. UN Number** | | | | |
| UN3264 | UN3264 | UN3264 | UN3264 | UN3264 |
| **14.2. UN proper shipping name** | | | | |
| CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S | CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S | CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S | CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S | CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S |
| **14.3. Transport hazard class(es)** | | | | |
| 8 | 8 | 8 | 8 | 8 |

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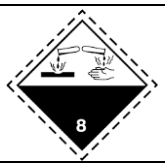
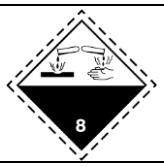
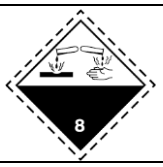
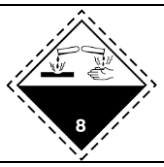
| ADR | IMDG | IATA | ADN | RID |
|---|---|---|---|---|
|  |  |  |  |  |
| **14.4. Packaging group** | | | | |
| III | III | III | III | III |
| **14.5. Environmental hazards** | | | | |
| Dangerous for the environment: No | Dangerous for the environment: No<br>Marine pollutant: No | Dangerous for the environment: No | Dangerous for the environment: No | Dangerous for the environment: No |

**14.6. Special precautions for user**

**IMDG**

EmS: F-A, S-B

Other information

Causes burns to skin, eyes and mucous membranes.

**14.7. Maritime transport in bulk according to IMO instrument**

Not relevant.

## SECTION 15: REGULATORY INFORMATION

**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture UK Regulatory References**

Chemicals (Hazard Information & Packaging) Regulations.

**Statutory Instruments**

The Chemicals (Hazard Information and Packaging for Supply) Regulations 2009 (S.I 2009 No. 716). Control of Substances Hazardous to Health.

**Approved Code Of Practice**

Classification and Labelling of Substances and Preparations Dangerous for Supply.

**Guidance Notes**

Workplace Exposure Limits EH40. Introduction to Local Exhaust Ventilation
HS(G)37. CHIP for everyone HSG(108).

**EU Legislation**

Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures

Commission Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

Commission Regulation (EU) 2020/878 of 18 June 2020

**Restrictions (Annex XVII Regulation 1907/2006)**

There are no known restrictions on the use of this product.

**15.2. Chemical Safety Assessment**

No chemical safety assessment has been carried out.

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## SECTION 16: OTHER INFORMATION

**Abbreviations used in safety data sheet**
ADR: European Agreement on International Carriage of Dangerous Goods by Road.
ADN: European Agreement on the International Carriage of Dangerous Goods by Inland Waterways.
RID: European Agreement on International Carriage of Dangerous Goods by Rail.
IATA: International Air Transport Association.
ICAO-TI: Technical Specification for Safe Transport of Dangerous Goods by Air.
IMDG: International Maritime Dangerous Goods.
TWA: Time weighted average
ATE: Estimated value of acute toxicity
EC No: European Community number
CAS: Chemical Theory Service.
LD50: Substance that causes 50% (half) death in the test animals group (Median Fatal Dose).
LC50: Substance concentration causing 50% (half) death in the test animals group.
EC50: Effective Concentration of the substance causing the maximum of
50%. PBT: Persistent, Bioaccumulative and Toxic substance.
vPvB: Very Permanent, Very Biofriendly.
SEA: Classification, labeling, packaging regulation
DNEL: Derivative Inactive Level
PNEC: Estimated Unaffected Concentration

**Information Sources**
This SDS is written based on the information received from rawmaterial
supplier. European Chemicals Agency (ECHA)

**Revision Comments**
SDS has been revised under the current regulations.

**Hazard Statements in Full**
H290 May be corrosive to metals.

**Prepared by Safety Data Sheet:**
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**Certificate number** TÜV/11.34.08
**Certificate validity date** 09/07/2025
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Safety Data Sheet (SDS), Turkey