

## Safety Data Sheet

according to Regulation (EC) No 1907/2006

### Aluminium chloride hexahydrate for analysis chrystalline

Revision date: 21.07.2023

Product code: 25203

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

##### 1.1. Product identifier

Aluminium chloride hexahydrate for analysis chrystalline

CAS No: 311-28-4

EC No: 206-220-5

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

###### Use of the substance/mixture

Laboratory chemical

Industrial uses: Uses of substances as such or in preparations at industrial sites

Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

###### Uses advised against

Do not use for private purposes (household).

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

Company name: AnalytiChem GmbH

Street: Stempelstraße 6

Place: D-47167 Duisburg

Telephone: 0203/5194-0

Telefax: 0203/5194-290

E-mail: info@analytichem.de

Contact person: Abteilung Produktsicherheit

Telephone: 0203/5194-107/117

E-mail: produktsicherheit@analytichem.de

Internet: www.analytichem.de

Responsible Department: Abteilung Produktsicherheit

##### 1.4. Emergency telephone number:

For Hazardous Materials [or Dangerous Goods] Incidents Spill, Leak, Fire, Exposure, or Accident Call CHEMTREC Day or Night Within USA and Canada: 1-800-424-9300 Outside USA and Canada: +1 703-741-5970 (collect calls accepted)

##### Further Information

A registration number is not available for this substance as the substance or its use are exempted from registration according to Article 2 REACH Regulation (EC) No 1907/2006, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

#### SECTION 2: Hazards identification

##### 2.1. Classification of the substance or mixture

###### Regulation (EC) No 1272/2008

Acute Tox. 4; H302

Skin Irrit. 2; H315

Eye Irrit. 2; H319

STOT SE 3; H335

Full text of hazard statements: see SECTION 16.

##### 2.2. Label elements

###### Regulation (EC) No 1272/2008

Signal word: Warning

Pictograms:



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**Hazard statements**

- H302 Harmful if swallowed.
- H315 Causes skin irritation.
- H319 Causes serious eye irritation.
- H335 May cause respiratory irritation.

**Precautionary statements**

- P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
- P302+P352 IF ON SKIN: Wash with plenty of water.
- P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P337+P313 If eye irritation persists: Get medical advice/attention.

**2.3. Other hazards**

No data available

**SECTION 3: Composition/information on ingredients**

**3.1. Substances**

- Sum formula: C16H36IN
- Molecular weight: 369,38 g/mol

**Hazardous components**

| CAS No   | Chemical name   | Quantity |
|----------|---|----------|
|          | EC No   |          |
|          | Index No  |          |
|          | REACH No  |          |
|          | Classification (Regulation (EC) No 1272/2008)                             |          |
| 311-28-4 | tetrabutylammonium iodide   | 100 %    |
|          | 206-220-5   |          |
|          | Acute Tox. 4, Skin Irrit. 2, Eye Irrit. 2, STOT SE 3; H302 H315 H319 H335 |          |

Full text of H and EUH statements: see section 16.

**Specific Conc. Limits, M-factors and ATE**

| CAS No   | EC No     | Chemical name                            | Quantity |
|----------|-----------|--|----------|
|          |           | Specific Conc. Limits, M-factors and ATE |          |
| 311-28-4 | 206-220-5 | tetrabutylammonium iodide                | 100 %    |
|          |           | oral: LD50 = 1990 mg/kg                  |          |

**Further Information**

This product does not contain substances of very high concern according to Regulation (EC) No 1907/2006 (REACH), Article 57 above the respective regulatory concentration limit of = 0.1 % (w/w).

**SECTION 4: First aid measures**

**4.1. Description of first aid measures**

**General information**

No data available

**After inhalation**

- Provide fresh air.
- Call a doctor if you feel unwell.

**After contact with skin**

- Wash immediately with: Water
- Take off immediately all contaminated clothing and wash it before reuse.
- In case of skin irritation, consult a physician.

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#### **After contact with eyes**

Rinse immediately carefully and thoroughly with eye-bath or water.  
In case of eye irritation consult an ophthalmologist.

#### **After ingestion**

Rinse mouth immediately and drink plenty of water.  
Call a physician immediately.

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

May cause sensitisation especially in sensitive humans.

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

No data available

### SECTION 5: Firefighting measures

#### **5.1. Extinguishing media**

##### **Suitable extinguishing media**

Co-ordinate fire-fighting measures to the fire surroundings.

##### **Unsuitable extinguishing media**

no restriction

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

Combustible solids  
Hazardous combustion products  
In case of fire may be liberated: Nitrogen oxides (NO<sub>x</sub>), Hydrogen iodide (HI)  
Danger of dust explosion.

#### **5.3. Advice for firefighters**

In case of fire: Wear self-contained breathing apparatus.  
Avoid contact with skin, eyes and clothes.

#### **Additional information**

Suppress gases/vapours/mists with water spray jet.  
Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

### SECTION 6: Accidental release measures

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

##### **For non-emergency personnel**

Provide adequate ventilation.  
Use personal protection equipment.  
Avoid contact with skin, eyes and clothes.  
Remove persons to safety.  
Emergency procedures  
Do not breathe dust/fume/gas/mist/vapours/spray.

##### **For emergency responders**

Precautionary statements For emergency responders : Personal protection equipment: see section 8

#### **6.2. Environmental precautions**

Do not allow to enter into surface water or drains.

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

##### **For containment**

Cover drains.  
Prevent spread over a wide area (e.g. by containment or oil barriers).  
Collect in closed and suitable containers for disposal.  
Take up carefully when dry. Take up dust-free and set down dust-free.

##### **For cleaning up**

Clean contaminated articles and floor according to the environmental legislation.

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#### Other information

- Provide adequate ventilation.
- Do not breathe dust/fume/gas/mist/vapours/spray.
- Wear breathing apparatus if exposed to vapours/dusts/aerosols.

#### 6.4. Reference to other sections

- Safe handling: see section 7
- Personal protection equipment: see section 8
- Disposal: see section 13

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

##### Advice on safe handling

- Avoid dust formation.
- Do not breathe dust.

##### Advice on protection against fire and explosion

- Danger of dust explosion.

##### Advice on general occupational hygiene

- Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme.
- Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat or drink.

##### Further information on handling

- Wash hands and face before breaks and after work and take a shower if necessary.
- Take off immediately all contaminated clothing and wash it before reuse.
- Draw up and observe skin protection programme.

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

##### Requirements for storage rooms and vessels

- Keep container tightly closed.
- Store in a dry place.

##### Further information on storage conditions

- storage temperature: < +30°C
- Protect against: Humidity

#### 7.3. Specific end use(s)

- Laboratory chemicals

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

#### 8.2. Exposure controls

##### Appropriate engineering controls

- Technical measures and the application of suitable work processes have priority over personal protection equipment.

##### Individual protection measures, such as personal protective equipment

##### Eye/face protection

- Suitable eye protection: goggles.

##### Hand protection

- When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

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Protective gloves are recommended Company KCL GmbH, D-36124 Eichenzell, email: [vertrieb@kcl.de](mailto:vertrieb@kcl.de) With specification (test according to EN374):

By long-term hand contact

Trade name/designation: KCL 741 Dermatril® L  
Recommended material: NBR (Nitrile rubber) 0,11 mm  
Wearing time with permanent contact: > 480 min

By short-term hand contact

Trade name/designation: KCL 741 Dermatril® L  
Recommended material: NBR (Nitrile rubber) 0,11 mm  
Wearing time with occasional contact (splashes): > 480 min

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types. This recommendation applies only to the product stated in the safety data sheet supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

#### Skin protection

Wear suitable protective clothing.

#### Respiratory protection

Respiratory protection necessary at: dust formation  
Filtering device with filter or ventilator filtering device of type: P2

#### Environmental exposure controls

Do not allow to enter into surface water or drains.

## SECTION 9: Physical and chemical properties

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

|   |                   |
|---|-------------------|
| Physical state:   | solid             |
| Colour:   | yellow            |
| Odour:  | odourless         |
| Melting point/freezing point:                             | 143-146 °C        |
| Boiling point or initial boiling point and boiling range: | No data available |
| Flammability:   | No data available |
| Lower explosion limits:                                   | No data available |
| Upper explosion limits:                                   | No data available |
| Flash point:  | No data available |
| Auto-ignition temperature:                                | No data available |
| Decomposition temperature:                                | No data available |
| pH-Value:   | No data available |
| Viscosity / kinematic:                                    | No data available |
| Water solubility:   | poorly soluble    |
| Solubility in other solvents                              | No data available |
| Partition coefficient n-octanol/water:                    | log Pow: 0,869    |
| Vapour pressure:  | No data available |
| Vapour pressure:  | No data available |
| Density:  | No data available |
| Bulk density:   | No data available |

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Relative vapour density: No data available

#### **9.2. Other information**

##### **Information with regard to physical hazard classes**

Explosive properties

Danger of dust explosion.

Sustaining combustion:

No data available

Self-ignition temperature

Solid:

No data available

Gas:

No data available

Oxidizing properties

Not oxidising.

##### **Other safety characteristics**

Evaporation rate:

No data available

Solvent separation test:

No data available

Solvent content:

No data available

Solid content:

No data available

Sublimation point:

No data available

Softening point:

No data available

Pour point:

No data available

No data available:

Viscosity / dynamic:

No data available

Flow time:

No data available

##### **Further Information**

No data available

## SECTION 10: Stability and reactivity

### **10.1. Reactivity**

Danger of dust explosion.

### **10.2. Chemical stability**

The product is stable under storage at normal ambient temperatures.

Protect against: Humidity

### **10.3. Possibility of hazardous reactions**

Violent reaction with:

Oxidising agent, strong

### **10.4. Conditions to avoid**

Humidity

### **10.5. Incompatible materials**

No data available

### **10.6. Hazardous decomposition products**

In case of fire may be liberated: Nitrogen oxides (NO<sub>x</sub>), Hydrogen iodide (HI)

##### **Further information**

No data available

## SECTION 11: Toxicological information

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

#### **Toxicokinetics, metabolism and distribution**

No data available

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**Acute toxicity**

Harmful if swallowed.

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|----------|---------------------------|---------------|-------------|--|-----------------|
|          | Exposure route            | Dose          | Species     | Source                                       | Method          |
| 311-28-4 | tetrabutylammonium iodide |               |             |  |                 |
|          | oral                      | LD50<br>mg/kg | 1990<br>Rat | ChemIDplus, A Toxnet<br>Database - 2017 (20) | other: as below |

**Irritation and corrosivity**

Causes skin irritation.

Causes serious eye irritation.

**Sensitising effects**

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

May cause sensitisation especially in sensitive humans.

**Carcinogenic/mutagenic/toxic effects for reproduction**

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

**STOT-single exposure**

May cause respiratory irritation. (tetrabutylammonium iodide)

**STOT-repeated exposure**

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

**Aspiration hazard**

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

**Specific effects in experiment on an animal**

No data available

**Additional information on tests**

No data available

**Practical experience**

No data available

**11.2. Information on other hazards**

**Endocrine disrupting properties**

No data available

**Other information**

No data available

**Further information**

No data available

**SECTION 12: Ecological information**

**12.1. Toxicity**

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

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| CAS No   | Chemical name             |                    |           |               |                            |                          |
|----------|---------------------------|--------------------|-----------|---------------|----------------------------|--------------------------|
|          | Aquatic toxicity          | Dose               | [h]   [d] | Species       | Source                     | Method                   |
| 311-28-4 | tetrabutylammonium iodide |                    |           |               |                            |                          |
|          | Acute fish toxicity       | LC50 > 100 mg/l    | 96 h      | Danio rerio   | REACH Registration Dossier | OECD Guideline 203       |
|          | Acute algae toxicity      | ErC50 203,268 mg/l | 96 h      | green algae   | REACH Registration Dossier | other: Modeling database |
|          | Acute crustacea toxicity  | EC50 2,8 mg/l      | 48 h      | Daphnia magna | REACH Registration Dossier | OECD Guideline 202       |

**12.2. Persistence and degradability**

No data available

**12.3. Bioaccumulative potential**

No indication of bioaccumulation potential.

**Partition coefficient n-octanol/water**

| CAS No   | Chemical name             | Log Pow |
|----------|---------------------------|---------|
| 311-28-4 | tetrabutylammonium iodide | 0,869   |

**BCF**

| CAS No   | Chemical name             | BCF   | Species | Source               |
|----------|---------------------------|-------|---------|----------------------|
| 311-28-4 | tetrabutylammonium iodide | 70,79 | Fish    | REACH Registration D |

**12.4. Mobility in soil**

No data available

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

This substance does not meet the PBT/vPvB criteria of REACH, annex XIII.

**12.6. Endocrine disrupting properties**

This substance does not have endocrine disrupting properties with respect to non-target organisms.

**12.7. Other adverse effects**

Discharge into the environment must be avoided.

**Further information**

Do not allow to enter into surface water or drains.

**SECTION 13: Disposal considerations****13.1. Waste treatment methods****Disposal recommendations**

Waste disposal according to directive 2008/98/EC, covering waste and dangerous waste.

Do not mix with other wastes.

Do not empty into drains.

**Contaminated packaging**

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

**SECTION 14: Transport information****Land transport (ADR/RID)****14.1. UN number or ID number:**

No dangerous good in sense of this transport regulation.

**14.2. UN proper shipping name:**

No dangerous good in sense of this transport regulation.



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**14.3. Transport hazard class(es):** No dangerous good in sense of this transport regulation.

**14.4. Packing group:** No dangerous good in sense of this transport regulation.

#### Inland waterways transport (ADN)

**14.1. UN number or ID number:** No dangerous good in sense of this transport regulation.

**14.2. UN proper shipping name:** No dangerous good in sense of this transport regulation.

**14.3. Transport hazard class(es):** No dangerous good in sense of this transport regulation.

**14.4. Packing group:** No dangerous good in sense of this transport regulation.

#### Marine transport (IMDG)

**14.1. UN number or ID number:** No dangerous good in sense of this transport regulation.

**14.2. UN proper shipping name:** No dangerous good in sense of this transport regulation.

**14.3. Transport hazard class(es):** No dangerous good in sense of this transport regulation.

**14.4. Packing group:** No dangerous good in sense of this transport regulation.

#### Air transport (ICAO-TI/IATA-DGR)

**14.1. UN number or ID number:** No dangerous good in sense of this transport regulation.

**14.2. UN proper shipping name:** No dangerous good in sense of this transport regulation.

**14.3. Transport hazard class(es):** No dangerous good in sense of this transport regulation.

**14.4. Packing group:** No dangerous good in sense of this transport regulation.

#### 14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: No

#### 14.6. Special precautions for user

No dangerous good in sense of this transport regulation.

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

not applicable

### SECTION 15: Regulatory information

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

##### EU regulatory information

Information according to 2012/18/EU (SEVESO III): Not subject to 2012/18/EU (SEVESO III)

##### National regulatory information

Employment restrictions: Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

Water hazard class (D): 3 - highly hazardous to water

### SECTION 16: Other information

#### Changes

This data sheet contains changes from the previous version in section(s): 11,12.

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#### Abbreviations and acronyms

ADR: Accord européen sur le transport des marchandises dangereuses par Route  
(European Agreement concerning the International Carriage of Dangerous Goods by Road)  
IMDG: International Maritime Code for Dangerous Goods  
IATA: International Air Transport Association  
GHS: Globally Harmonized System of Classification and Labelling of Chemicals  
EINECS: European Inventory of Existing Commercial Chemical Substances  
ELINCS: European List of Notified Chemical Substances  
CAS: Chemical Abstracts Service  
LC50: Lethal concentration, 50%  
LD50: Lethal dose, 50%  
Acute Tox: Acute toxicity  
Skin Irrit: Skin irritation  
Eye Irrit: Eye irritation  
STOT SE: Specific target organ toxicity - single exposure

#### Relevant H and EUH statements (number and full text)

|      |                                   |
|------|-----------------------------------|
| H302 | Harmful if swallowed.             |
| H315 | Causes skin irritation.           |
| H319 | Causes serious eye irritation.    |
| H335 | May cause respiratory irritation. |

#### Further Information

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material. The receiver of our product is singularly responsible for adhering to existing laws and regulations.