

# Safety Data Sheet

according to 1907/2006/EC, Article 31

Printing date 27.11.2010

Revision: 27.11.2010

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

- **Product details**

- **Trade name:** aluminium chloride, anhydrous

- **Registration number** 05-2116195721-41-0000 (Pre-Registration Number)

- **Application of the substance / the preparation**

*It finds widespread application in the chemical industry as the classic catalyst for Friedel-Crafts reactions, both acylations and alkylations.*

- **Manufacturer/Supplier:**

*Aditya Birla Chemicals (India) Ltd.*

*Garhwa Road, P.O. Rehla,*

*Palamau-822124 (JH.)*

*Ph: 06584-262211 / 262221*

- **Further information obtainable from:**

*Mr. Rakesh S. Baghel .*

*E-mail : rakesh.baghel@adityabirla.com*

- **Information in case of emergency:**

*Contact details of European importer*

*Emergency telephone number:*

*Telephone number of EU importer:*

*Opening hours:*

*Other Comments (e.g. language(s) of the phone service): English*

## 2 Hazards identification

- **Classification of the substance or mixture**

- **Classification according to Regulation (EC) No 1272/2008**



GHS05 corrosion

*Skin Corr. 1B H314 Causes severe skin burns and eye damage.*

- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**



C; Corrosive

*R34: Causes burns.*

- **Information concerning particular hazards for human and environment: Not applicable.**

- **Label elements**

- **Labelling according to Regulation (EC) No 1272/2008**

- **Hazard pictograms**



GHS05

- **Signal word** *Danger*

- **Hazard-determining components of labelling:** *Void*

- **Hazard statements**

*H314 Causes severe skin burns and eye damage.*

- **Precautionary statements**

*P260 Do not breathe dust/fume/gas/mist/vapours/spray.*

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**Trade name: aluminium chloride, anhydrous**

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**P303+P361+P353 IF ON SKIN (or hair):** Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

**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 or doctor/physician.

**P405** Store locked up.

**P501** Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Labelling according to EU guidelines:**

The product has been classified and marked in accordance with EU Directives / Ordinance on Hazardous Materials.

· **Code letter and hazard designation of product:**



C Corrosive

· **Risk phrases:**

34 Causes burns.

· **Safety phrases:**

1/2 Keep locked up and out of the reach of children.

7/8 Keep container tightly closed and dry.

28 After contact with skin, wash immediately with plenty of soap and water.

45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

### 3 Composition/information on ingredients

· **Chemical characterization:**

· **CAS No. Description**

7446-70-0 aluminium chloride, anhydrous

· **Identification number(s)**

· **EINECS Number:** 231-208-1

· **Index number:** 013-003-00-7

· **Additional information:**

Molecular Formula :  $AlCl_3$

Molecular Weight : 133.34

### 4 First aid measures

· **General information:** Immediately remove any clothing soiled by the product.

· **After inhalation:**

In case of unconsciousness place patient stably in side position for transportation.

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

· **After skin contact:**

In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

· **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.

· **After swallowing:**

If swallowed, wash out mouth with water provided person is conscious. Call a physician immediately. Do not induce vomiting.

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· **Information for doctor:** Treat symptomatically and supportively.

## 5 Firefighting measures

- **Suitable extinguishing agents:**  
CO<sub>2</sub>, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards caused by the substance, its products of combustion or resulting gases:**  
Emits toxic fumes under fire conditions.
- **Protective equipment:**  
Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

## 6 Accidental release measures

- **Person-related safety precautions:**  
Wear protective equipment. Keep unprotected persons away.  
Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.
- **Measures for environmental protection:** Do not allow to enter sewers/ surface or ground water.
- **Measures for cleaning/collecting:**  
Use neutralizing agent.  
Dispose contaminated material as waste according to item 13.  
Sweep up, place in a bag and hold for waste disposal. Ventilate area and wash spill site after material pickup is complete.

## 7 Handling and storage

- **Handling:**
- **Information for safe handling:**  
Thorough dedusting.  
Do not breathe dust. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.
- **Information about fire - and explosion protection:** Keep ignition sources away - Do not smoke.
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Store in tightly closed containers.
- **Information about storage in one common storage facility:** Do not allow contact with water.
- **Further information about storage conditions:**  
Keep container tightly sealed.  
Store in cool, dry conditions in well sealed receptacles.  
Store under inert gas. Vent periodically. May develop pressure. Open carefully.
- **Specific applications**  
It finds widespread application in the chemical industry as the classic catalyst for Friedel-Crafts reactions, both acylations and alkylations.

## 8 Exposure controls/personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.
- **Ingredients with limit values that require monitoring at the workplace:** Not required.
- **Additional information:** The lists valid during the making were used as basis.

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- **Personal protective equipment:**
- **General protective and hygienic measures:**  
 Keep away from foodstuffs, beverages and feed.  
 Immediately remove all soiled and contaminated clothing  
 Wash hands before breaks and at the end of work.  
 Avoid contact with the eyes and skin.
- **Respiratory protection:** Government approved respirator.
- **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

- **Material of gloves**  
 The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.
- **Penetration time of glove material**  
 The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye protection:**



Tightly sealed goggles

Chemical safety goggles

- **Body protection:** Protective work clothing

## 9 Physical and chemical properties

### · General Information

#### · Appearance:

**Form:** Powder

**Colour:** White

· **Odour:** Strong odour of hydrogen chloride

#### · Change in condition

**Melting point/Melting range:** 193°C

**Boiling point/Boiling range:** 180.2°C

· **Flash point:** Not applicable.

· **Flammability (solid, gaseous):** Product is not flammable.

· **Danger of explosion:** Product does not present an explosion hazard.

· **Vapour pressure at 20°C:** 1 hPa

· **Density at 20°C:** 2.44 g/cm<sup>3</sup>

· **Solubility in / Miscibility with water at 20°C:** 450 g/l

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**10 Stability and reactivity**· **Thermal decomposition / conditions to be avoided:**

No decomposition if used according to specifications.

Do not allow water to enter container.

· **Materials to be avoided:**

Strong oxidizing agents, Alcohols Mixtures of nitrobenzene and aluminum chloride are thermally unstable and may lead to explosive decomposition due to a multi-step decomposition reaction occurring above 90 degrees C, which self-accelerates with high exothermicity producing azo- and azoxy polymers.

· **Dangerous reactions** No dangerous reactions known.· **Dangerous decomposition products:**

Hazardous Decomposition Products: Aluminum oxide, Hydrogen chloride gas.

Hazardous Decomposition Products Formed Upon Contact with Water: Hydrogen chloride gas

**11 Toxicological information**· **Acute toxicity:**· **LD/LC50 values relevant for classification:**

Oral	LD50	3730 mg/kg (rat)
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· **Primary irritant effect:**· **on the skin:** Caustic effect on skin and mucous membranes.· **on the eye:** Strong caustic effect.· **Sensitization:** No sensitizing effects known.· **Additional toxicological information:**

Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

· **Acute effects (acute toxicity, irritation and corrosivity)**

Irritation :

Skin, human- mild irritating, corrosive

Skin, mammal- irritating

Eye, human- highly corrosive

Buehler test, guinea pig- not sensitising

**12 Ecological information**· **Ecotoxic effects:**· **Acquatic toxicity:**

EC50	27.3mg/l/48 hrs (Daphnia magna)
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· **Additional ecological information:**· **General notes:**

Water hazard class 1 (German Regulation) (Assessment by list): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

Must not reach sewage water or drainage ditch undiluted or unneutralized.

· **Results of PBT and vPvB assessment TO BE PROVIDED IN THE REGISTRATION DOSSIER**

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**13 Disposal considerations**

- **Product:**
- **Recommendation**  
Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.
- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.

**14 Transport information**

- **Land transport ADR/RID (cross-border)**



- **ADR/RID class:** 8 Corrosive substances.
- **Danger code (Kemler):** 80
- **UN-Number:** 1726
- **Packaging group:** II
- **Hazard label:** 8
- **Description of goods:** 1726 ALUMINIUM CHLORIDE, ANHYDROUS
- **Tunnel restriction code** E

- **Maritime transport IMDG:**



- **IMDG Class:** 8
- **UN Number:** 1726
- **Label** 8
- **Packaging group:** II
- **EMS Number:** F-A,S-B
- **Marine pollutant:** No
- **Segregation groups** Acids
- **Proper shipping name:** ALUMINIUM CHLORIDE, ANHYDROUS

- **Air transport ICAO-TI and IATA-DGR:**



- **ICAO/IATA Class:** 8
- **UN/ID Number:** 1726
- **Label** 8
- **Packaging group:** II
- **Proper shipping name:** ALUMINIUM CHLORIDE, ANHYDROUS

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· **UN "Model Regulation": UN1726, ALUMINIUM CHLORIDE, ANHYDROUS, 8, II**

## 15 Regulatory information

- **Labelling according to Regulation (EC) No 1272/2008**
- **Hazard pictograms** Please refer section 2
- **Hazard statements** Please refer section 2
- **Precautionary statements** Please refer section 2
- **Labelling according to EU guidelines:**
- **Risk phrases:** Please refer section 2
- **Safety phrases:** Please refer section 2
- **Chemical safety assessment** A Chemical Safety Assessment has not been carried out.
- **National regulations:**
- **Other regulations, limitations and prohibitive regulations** Not applicable
- **Substances of very high concern (SVHC) according to REACH, Article 57**  
The substance is not listed as SVHC.

## 16 Other information

*This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.*

- **Department issuing MSDS:** Product safety department.
- **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)  
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)  
IMDG: International Maritime Code for Dangerous Goods  
IATA: International Air Transport Association  
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association"  
(IATA) ICAO: International Civil Aviation Organization  
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization"  
(ICAO) GHS: Globally Harmonized System of Classification and Labelling of Chemicals  
EINECS: European Inventory of Existing Commercial Chemical Substances  
CAS: Chemical Abstracts Service (division of the American Chemical Society) LC50: Lethal concentration, 50 percent  
LD50: Lethal dose, 50 percent
- **Sources**
  - **REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL** on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006
  - **Data from IUCLID dataset:**  
<http://ecb.jrc.ec.europa.eu/IUCLID-DataSheets/7446700.pdf>
  - **MSDS of Sigma Aldrich Pty. Ltd.**  
<http://www.lookchem.com/msds/2009-6/Aluminium%20chloride.pdf>
  - **TOXNET :**  
<http://toxnet.nlm.nih.gov/cgi-bin/sis/search/f?./temp/~lqptXC:1:FULL>
  - **Lookchem:**  
<http://www.lookchem.com/Aluminium-Chloride/Uses>
- **\* Data compared to the previous version altered.**
  - **Section 2 : Hazard Identification – Changes in classification and Labelling**
  - **Section 6 : Accidental Release Measures**
  - **Section 7 : Handling and Storage**

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- Section 8 : Exposure Controls / Personal Protection
- Section 9 : Physical and Chemical Properties
- Section 10 : Stability and Reactivity
- Section 11 : Toxicological Information
- Section 12 : Ecological Information
- Section 13 : Disposal Considerations

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