ADITYA BIRLA CHEMICALS (INDIA) LIMITED

(Formerly: Bihar Caustic & Chemicals Limited)

(RENUKOOT CHEMICAL WORKS DIVISION)
P.O. RENUKOOT - 231217, SONEBHADRA, (U.P)

MATERIAL SAFETY DATA SHEET

ALUMINIUM CHLORIDE, ANHYDROUS

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1. IDENTIFICATION

Trade Marks and Synonyms (if any)	Aluminum trichloride anhydrous, trichloro aluminum , Chlorure d' aluminum anhydre
Chemical Names and Synonyms	Aluminum trichloride anhydrous , aluminum chloride anhydrous
Physical Form	White to grey or yellow solid with hydrogen chloride odor
Molecular Formula	$ALCl_3$
Molecular Weight	133.34
Manufacturer Name & Address	Aditya Birla Chemicals (India) Limited, Dist. Sonebhadra, Renukoot (UP) 231217, INDIA Telephone: 91-5446-252088 e-mail: abcil.renukoot@adityabirla.com
Responsible Person	Safety Officer; Aditya Birla Chemicals (India) Limited Dist Sonebhadra (UP) 231217, INDIA

2. INFORMATION OF MAJOR INGREDIENTS

Chemical Name	Aluminum chloride , Anhydrous
CAS No	7446 –70-0
Formula	$AlCl_3$
Molecular Weight	133.34

3. HAZARD IDENTIFICATION

Main Risk

Contact with skin	Causes skin irritation
Contact with eyes	Corrosive to eyes
Safety Phrases	Keep out of reach of children. In case of contact with eye, wash immediately with plenty of water for 15-20 minutes. Seek medical aid. Remove contaminated clothes & shoes. Wash affected area with plenty of water. If inhaled, remove the victim to fresh air area & support respiration. Seek Medical Aid immediately for all types of exposure.

4. PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odour	White to grey or yellow solid with pungent odour of hydrogen chloride.
pH	Acidic
Sp.Gravity	2.44 at 25 $^{\circ}$C
Melting Point	178 $^{\circ}$C (Sublimes)
Boiling Point	183 $^{\circ}$C
Flash Point	Not pertinent
Auto ignition	Not occur
Flammable Limit	Not Pertinent
Vapour Pressure (mm Hg)	1 @ 100°C
Solubility in Water	Very soluble , reacts violently with water
Solubility in Organic Solvents	Soluble in alcohol, methanol and glycerol and chlorinated organic solvents
Oxidizing /Explosive Properties	No

5. STABILITY AND REACTIVITY

Stability	As supplied it is stable at normal temperature & pressure. When exposed to air, it reacts with moisture violently releasing toxic fumes of hydrogen chloride
Conditions to avoid	Avoid contact with water. Reacts with water violently. Heat will make the compound unstable.
Material to avoid	Water, moist air , heat , sodium oxide , ethylene oxide and nitro methane

Reactivity

Air	Reactive
Water	Reacts violently
Acids	Reactive
Alkalis	Not known
Hazardous Decomposition Products	Hydrogen chloride and hydrochloric acid

6. TOXICITY DATA

Short term effects (Chronic) when:

In contact with skin	Dust probably causes moderate to severe irritation of moist skin.
In contact with eyes	Moderate to severe irritation or corrosive injury to eye depending upon the duration of contact
Inhalation	Corrosive and irritating to nose , sore throat , pulmonary edema depending upon the concentration of dust , duration of exposure .
Ingestion	Sore throat, vomiting, nausea, abdominal pain, diarrhea. Ingestion isn't a typical route of occupational exposure

Long term effects (Acute) when:

In contact with skin	Very hazardous
In contact with eyes	Visual disturbances
Inhalation	Lung edema & may be fatal.
Ingestion	Burn in mouth , esophagus , gastrointestinal distress

Exposure Limits	2 mg / m^3 OSHA TWA
Acute Toxicity	LD_{50} (Oral –Rat) 3450 mg / kg LD_{50} (Oral – Mouse) 1130 mg/ kg LC50 (Dermal , Rabbit) > 2000 mg / kg
Chronic Toxicity	Chronic effects are due to long – term exposure. Skin irritant, causes damage to the lungs , mucous membranes. Corrosive to eyes.
Carcinogenic Toxicity	No
Mutagenic Toxicity	No
Reproductive Toxicity	No

7. FIRST AID MEASURES

Skin Contact	Wipe off excess material properly then wash the affected area with plenty of water and soap.. Remove contaminated clothing. Seek medical aid immediately
Eye Contact	Wash with plenty of water for 15 minutes holding the eyelids apart Seek medical Aid immediately.
Inhalation	Remove the victim from area of exposure to area of fresh air. Support respiration, gives oxygen if necessary. Seek medical aid
Ingestion	Do not induce vomiting. Give large amount of water. Never give anything to an unconscious person . Seek medical aid
Further Medical Advice	Seek medical aid immediately

8. FIRE / EXPLOSION HAZARD DATA

Fire Extinguishing Data	Not combustible but may react slowly in a fire. Not explosive but may react violently if comes in contact with water.
Would any material saturated with this product be subject to spontaneous combustion?	No
Fire Fighting Protective Equipment	Wear full protective clothing, goggles, masks
Unusual Fire and Explosive Hazards	Special Hazard. During a fire in which this material is involved, oxides of aluminum , hydrogen chloride may be liberated. Shovel dry material into suitable container . Keep out of water supplies and sewers. Never allow the material to come in contact with water as it will react violently .

9. PERSONAL PROTECTION

General Precaution	Provide local exhaust ventilation where dust or mist may be generated. Ensure applicable exposure limits.
Ventilation Requirements	Provide local exhaust ventilation where dust or mist may be generated. Ensure applicable exposure limits.
Respiratory Protection	A NIOSH approved respirator with N95 (dust, fume, mist) filters may be permissible under certain circumstances where air borne concentrations are expected to exceed exposure limits, or when symptoms have been observed that are indicative of over-exposure. A half face piece air-purifying respirator may be used in concentrations up to 10X the acceptable exposure level and a full face piece air-purifying respirator may be used in concentrations upto 50X the acceptable exposure level. Supplied air should be used when the level is expected to be above 50X the acceptable level, or when there is a potential for uncontrolled release.
Protective Clothing	Wear protective clothing to minimize skin contact. When potential for contact with wet material exists, wear Tychem (R) SL or a similar chemical protective suit . When potential for contact with dry material exists, wear disposable overalls such as Tyvek (R)
Eye Protection	Wear chemical resistant safety goggles if eye contact is likely. When wet mixing, wear splash resistant safety goggles with a face shield. Provide an emergency eye wash fountain and quick drench.
Gloves	Wear suitable gloves. Discard contaminated leather goods. When wet mixing, wear chemical resistant gloves such as butyl rubber, natural rubber, neoprene or nitrile.
Protective Material Types	Butyl rubber, canvas, leather, natural rubber , neoprene , nitrile,Tychem (R) and Tyvek (R)

10. HANDLING AND STORAGE

Handling	Store in a cool, dry and well-ventilated place. Keep containers closed. Keep away from heat, sparks and flames, moistures and other in compatibilities. Use only with adequate ventilation. Avoid contact with eyes, skin or clothing.

Storage	Store and handle in accordance with all current regulations and standards. Keep container tightly closed and properly labeled. Protect from physical damage. Containers of this product may be hazardous when empty as the container retains the residues. Keep separated from incompatible substances. The filled container is kept on wooden pellets.

11. SPILLAGE/ACCIDENTAL RELEASE

Spillage	Do not touch spilled material. Prevent it entering sewers. Dry manual lifting of the spilled material is suggested without making dust Neutralize the area with soda ash , lime stone , lime .Avoid contact with water or moisture .
Personal Precautions	Avoid generation of dust. Avoid eyes & skin contact. Avoid inhalation. Avoid ingestion. Wear appropriate personal protective equipments.
Environmental Precautions	Prevent contamination of soil and water.

12 WASTE DISPOSAL

Waste Disposal	Seal all waste in airtight plastic bags. for eventual disposal as per the guidelines of National/Regional Regulations. Packing materials gets contaminated. Before disposal wash thoroughly with water and then dispose off by appropriate methods in accordance with National / Regional requirement.

13. ENVIRONMENTAL INFORMATION

Bio - Accumulation	No bio-accumulation
Biodegradability	This material is inorganic and not subject to biodegradation.
Persistence	This material will exist in the dissociated state
Toxicity	This material has exhibited slight toxicity to terrestrial organisms and moderate toxicity to aquatic flora & fauna.
Mobility	Avoid release in water bodies as it reacts violently producing fumes of hydrogen chloride.

14. REGULATORY INFORMATION

Danger Symbol

- C Corrosive

Risk Phrases	**R14 :** Reacts violently with water. **R20/R21/R22:** Harmful by inhalation, in contact with skin and if swallowed. **R34:** Causes burns **R36/37/38:** Irritating to eyes ,respiratory system & skin.. **R41:** Risk of serious damage to eyes. **R66**: Repeated exposure may cause skin dryness or cracking
Safety Phrases	**S2:** Keep out of the reach of children. **S7/8:** Keep container tightly closed and dry. **S14/15:** Keep away from heat. **S22/23:** Do not breathe dust, do not breathe gas /fumes/vapor/spray **S24/S25**:Avoid contact with skin, eyes. **S26:**In case of contact with eyes ,rinse immediately with plenty o water and seek medical advice. **S27:** Take off immediately all contaminated clothing. **S28:** After contact with skin ,wash immediately with plenty of water and soap. **S36/37/39:** Wear suitable protective clothing, gloves and eye/face protection. **S45:** In case of accident or if you feel unwell, seek medical advice immediately and show the label where possible **S46:**If swallowed, seek medical advice immediately and show this label or container**.** **S61:** Avoid release to the environment **S62:** If swallowed , do not induce vomiting; seek medical advice immediately and show the label.

15. TRANSPORT INFORMATION

UN No. & Symbols	" 1726, " Corrosive Substance"
Proper Shipping Name	Aluminum chloride anhydrous , solid
Hazard Class or Division	8
Packing Group	II
Labeling Requirements	8
Danger Code (Kemler)	80

16. **OTHER INFORMATION**

Disclaimer:

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process unless specified in the text.

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