

Material Safety Data Sheet Aluminum fluoride

Section 1: Chemical Product and Company Identification

Product Name : Aluminum fluoride
Chemical Formula : $\text{AlF}_3 \cdot 3\text{H}_2\text{O}$
Company Identification : Tradeasia International Pte Ltd
Email : contact@chemtradeasia.com

Section 2: Composition and Information on Ingredients

Name	CAS#	LD ₅₀	LC ₅₀	Conc. (%)
Aluminum fluoride	7784-18-1	1800 mg/kg	Unknown	91 - 92

Section 3: Hazards Identification

May emit toxic and corrosive gases at high temperatures. If a spill occurs, there is a surface water contamination hazard.

Section 4: First Aid Measures

INHALATION: If overcome by high dust concentrations, remove to a ventilated area. If discomfort persists, consult a physician.

SKIN CONTACT: Wash skin thoroughly with soap and water.

EYE CONTACT: Flush eyes thoroughly with water, taking care to rinse under eyelids. If irritation persists, continue flushing for 15 minutes, rinsing from time to time under eyelids. If discomfort continues, consult a physician.

INGESTION: Induce vomiting if conscious. Ingest soluble calcium in any form: milk, calcium gluconate solution or calcium lactate solution or tablets of calcium carbonate.

Section 5: Fire-fighting Measures

Non-combustible.

EXTINGUISHING MEDIA: In case of fire do not spray water directly on product.

HAZARDOUS COMBUSTION PRODUCTS: Not applicable

Section 6: Accidental Release Measures

Clean up with vacuum equipment or by wet sweeping to avoid spreading dust. In case of contact with acids, maintain high pH by mixing with slaked lime.

Section 7: Handling and Storage

HANDLING PRECAUTIONS: Avoid generating dust during handling. Promote personal hygiene among workers handling this material. Do not smoke, drink or eat in the working area.

STORAGE CONDITIONS: Store away from strong acids and intense heat.

Section 8: Exposure Controls/Personal Protection

Provide general and local ventilation to maintain concentrations of air contaminants below recommended standards. Eye protection (goggles) and respiratory protection (mask or full-face respirator against the concerned hazard) should be provided if excessive dust concentrations occur.

Exposure limits:

	ACGIH (TLV)		OSHA (PEL)	
	TWA	STEL	TWA	CEILING
Fluorides (as F)	2.5 mg/m ³	None	2.5 mg/m ³	None
Aluminum oxide (total dust)	10 mg/m ³	None	15 mg/m ³	None
- Respirable dust	None	None	5 mg/m ³	None

(ACGIH = American Conference of Governmental Industrial Hygienists; TLV = Threshold Limit Value; OSHA = Occupational Safety and Health Administration [USA]; PEL = Permissible Exposure Limit; TWA = Time-Weighted Average; STEL = Short Term Exposure Limit; Ceiling = Ceiling value)

Section 9: Physical and Chemical Properties

- pH:** Not applicable
- FLASHPOINT:** Not applicable
- AUTOIGNITION TEMPERATURE:** Not applicable
- BOILING POINT:** Not applicable
- MELTING POINT:** 1040°C
- LOWER FLAMMABLE LIMIT:** Not applicable
- HIGHER FLAMMABLE LIMIT:** Not applicable
- VAPOUR PRESSURE:** Not applicable
- VAPOUR DENSITY (AIR = 1):** Not applicable
- EXPLOSIVE PROPERTIES:** Not applicable
- EVAPORATION RATE:** Not applicable
- NFPA FIRE CODE:** 0
- RELATIVE DENSITY (WATER = 1):** 3.1
- OXIDIZING PROPERTIES:** Not applicable
- WATER SOLUBILITY:** Insoluble
- PARTITION COEFFICIENT (N-OCTANOL/WATER):** Not determined
- ODOUR THRESHOLD:** Not determined

Section 10: Stability and Reactivity Data

- STABLE (YES/NO):** Yes
- CONDITIONS AND MATERIAL TO AVOID:** Avoid contact with strong acids and intense heat.
- HAZARDOUS DECOMPOSITION PRODUCTS:** May emit fluoride fumes and hydrogen fluoride, a toxic and corrosive gas, on contact with strong acids or if heated to decomposition. May emit toxic fluorides if strongly heated in the presence of water.

Section 11: Toxicological Information

ROUTES OF EXPOSURE:

INHALATION: Yes
SKIN CONTACT: Yes

INGESTION: No
SKIN ABSORPTION: No

EYE CONTACT: Yes

ACUTE EFFECTS:

INHALATION: Acute overexposure can cause respiratory tract irritation and nausea.

SKIN CONTACT: Prolonged or repeated contact may lead to irritation.

EYE CONTACT: Irritation.

INGESTION: Can cause diffuse abdominal pain, diarrhoea, vomiting, excessive salivation, thirst, perspiration, painful spasms of the limbs and in some cases, albuminuria. Hypocalcaemia at high dose. Lethal dose: 1 - 4 g.

CHRONIC EFFECTS:

Prolonged overexposure to fluorides may increase fluoride content of bones and teeth, and may result in fluorosis, with mottling of teeth (in children) and brittleness of bones. Respiratory diseases.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE TO THE PRODUCT: Respiratory diseases.

CARCINOGENICITY / MUTAGENICITY / REPRODUCTIVE TOXICITY: None of the ingredients present at concentrations equal to or greater than 0.1% are listed as a carcinogen or potential carcinogen by IARC, NTP or OSHA.

[IARC = International Agency for Research on Cancer; NTP = National Toxicology Program (USA); OSHA = Occupational Safety and Health Administration (USA)]

Supplementary information: A recommended practice for persons with continual high exposure to this dust is, aside from appropriate protective clothing and use of a NIOSH-approved respiratory protective device, to undergo a periodic medical examination which includes measurement of urinary fluoride levels. (NIOSH = National Institute for Occupational Safety and Health) ACGIH (American Conference of Governmental Industrial Hygienists) recommends that pre-shift urinary fluorides levels should not exceed 3 mg/g of creatinine and post-shift should not exceed 10 mg/g of creatinine for an 8 hour shift.

Section 12: Ecological Information

If a spill occurs, there is a surface water contamination hazard. Avoid contaminating surface water, waterways or sewers leading to surface water.

Section 13: Disposal Considerations

Recycle if possible. Waste should be tested to determine their hazardous characteristics. Do not incinerate. Use disposal methods which prevent leaching. Dispose of waste in accordance with federal, state, or local regulations.

Section 14: Transport Information

TDGR: not regulated CFR 49: not regulated IMO: not regulated ICAO: not regulated IATA: not regulated.

[TDGR = Transport of Dangerous Good Regs.(Canada). CFR 49 = Code of Federal Regs.(USA). IMO = International Maritime Organization. ICAO = International Civil Aviation Organization. IATA = International Air Transport Association)]

Section 15: Other Regulatory Information

WHMIS CLASSIFICATION (CANADA): D2B Toxic material causing other toxic effects.

EUROPEAN UNION CLASSIFICATION:

WARNING SYMBOL: None

WARNING WORD: None

RISK PHRASES: None

SAFETY PHRASES: None

USA REGULATIONS:

Section 313 Supplier Notification

This product does not contain any chemicals in concentrations subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 (Title III of SARA) and of 40 CFR 372.

TSCA - DSL [USA - Canada]

This substance or all the ingredients of this product are on the Domestic Substances List (DSL - Canadian Environmental Protection Act [Canada]) as well as on the Chemical Substances Inventory of the Toxic Substances Control Act (TSCA Inventory [USA]). The presence on these lists does not require any legal reporting.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no way shall Tradeasia International Pte. Ltd. be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Tradeasia International Pte. Ltd. has been advised of the possibility of such damages.