

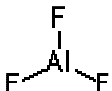
NAVIN FLUORINE INTERNATIONAL LTD		web: http://www.nfil.in mailto: bulkfluoride@nfil.in
		2nd Floor, Suntek Centre, 37/40, Subhash Road, Vile Parle (East), Mumbai-400057. India.

PRODUCT SPECIFICATION	
Title: ALUMINUM FLUORIDE (AlF ₃)	Document No. : NFIL/QC/SPEC/FP/053/00 Effective Date : 05/11/2008

Material Code : FLU008003

Packing : 25kg, 50kg HDPE Bags. 15kg Paper Bags, 1.0Ton HDPE Jumbo bags.

Storage Specifications : Storage in dry condition at Room temperature.

Structural Formula : 

Molecular Formula : AlF₃

Molecular Weight : 84

Synonyms : Aluminum Trifluoride

Sr. No.	TEST	SPECIFICATION
Product Specification:		
1	Appearance/Description	white to off-white colored powder
2	Bulk density	1.300 kg/lit. Min.
3	Loss on ignition (at 550°C)	1.00% Max.
4	AlF ₃	90% Min.
5	Fluorine (F)	61.08% Min.
6	Phosphorous as P ₂ O ₅	80 ppm Max..
7	Al ₂ O ₃ + Na ₂ O (by difference)	9.00% Max.
8	Free alumina Al ₂ O ₃ (by calculation)	9.0% Max.
9	Angle of repose	35° Max.
10	Flowability	60 Sec./kg. Max.
11	Sieve size +20 mesh	NIL
12	Sieve size +100 mesh	8.00% Max.
13	Sieve size - 325 mesh	9.00% Max.

- Customer should discuss with business unit at bulkfluoride@nfil.in for the other requirements than specified.
- Analytical Method No. **NFIL/QC/WI/FP/053**



NAVIN FLUORINE
INTERNATIONAL LIMITED

MATERIAL SAFETY DATA SHEET (MSDS)

Aluminum fluoride, 99.9+%

1. CHEMICAL IDENTITY

Chemical Name	Aluminum fluoride
Synonym	Aluminum trifluoride
Formula	AlF ₃

2. COMPOSITION / INFORMATION ON INGREDIENTS

Ingredients name: Aluminum fluoride, 99.9+%	C.A.S. No 7784-18-1
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3. PHYSICAL / CHEMICAL DATA

Boiling Point	Not available	Vapour Pressure	Not available
Melting Point	Not available	Solubility in water	0.559 g/100 ml @ 25°C
Vapour Density (Air = 1)	Not available	Appearance	white
Specific Gravity (Water=1)	2.88	Odour	odorless
pH (5% Soln.)	Not applicable	Other	----
Physical state	Crystals		

4. FIRE / EXPLOSION HAZARD DATA

Flammability :	Non Flammable	LEL%	Not applicable	Flash Point :	Not flammable
Auto Ignition Temp.	Not applicable	UEL%	Not applicable		
Hazardous Combustion Product	Emits toxic fumes of fluorine				
Hazardous Polymerization	Will not occur.				
Combustible liquid	No	Oxidizer	No		
Flammable material	No	Organic Peroxide	No		
Pyrophoric material	No	Corrosive	No		
Explosive material	No	Other	-		

5. STABILITY & REACTIVITY DATA

Chemical stability	Stable at room temperature in closed containers under normal storage and handling conditions. If temperature of use for aluminum fluoride exceeds the sublimation temperature (1260C), hydrogen fluoride gas may be generated. In the presence of water vapor and temperature in excess of 300C, HF gas may be generated.
Incompatibility	No significant incompatibilities identified with common materials and contaminants.
Conditions to avoid	Dust generation, excess heat.
Hazardous reaction/decomposition products	Hydrogen fluoride gas, aluminum oxide.

6. HEALTH HAZARD DATA

Effects of exposure/ Symptoms	Skin, Eyes, Inhalation ,Ingestion
	Eye: Causes eye irritation. Skin: Causes skin irritation. Ingestion: Ingestion of large amounts of fluoride may cause salivation, nausea, vomiting, abdominal pain, fever, labored breathing. Exposure to fluoride compounds can result in systemic toxic effects on the heart, liver, and kidneys. It may also deplete calcium levels in the body leading to hypocalcaemia and death. Aluminum may be readily absorbed from the gastrointestinal tract. The oral human LDLo for the fluoride ion (CAS= 16984-48-8) is 50 mg/kg. Acute fluoride intoxication produces nausea, vomiting, abdominal pain, diarrhea and tetany, often resulting in death from cardiovascular collapse. Inhalation: Causes respiratory tract irritation

7. TOXICOLOGICAL INFORMATION		
LD 50 / LC50	Draize test, rabbit, eye: 500 mg/24H Mild; Oral, mouse: LD50 = 103 mg/kg; Oral, rat: LD50 = 1800 mg/kg;	
Permissible Exposure Limit	2.5 mg/m ³	
NFPA hazard signal	Health: 2; Flammability: 0; Instability: 0	
8. ECOLOGICAL INFORMATION		
No information available.		
9. PREVENTIVE MEASURES/EXPOSURE CONTROL/PERSONAL PROTECTION		
Engineering Controls	Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.	
Personal Protective Equipments	Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166. Skin: Wear appropriate protective gloves to prevent skin exposure. Clothing: Wear appropriate protective clothing to prevent skin exposure. Respirators: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.	
10. HANDLING & STORAGE		
Normal Handling	Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Use with adequate ventilation. Avoid breathing dust.	
Storage Recommendation	Store in a cool, dry, well-ventilated area away from incompatible substances.	
11. EMERGENCY / FIRST AID MEASURE		
Fire	Fire extinguishing medium	Not flammable. Use fire fighting media suitable for surrounding.
Exposure/first aid measures	Inhalation	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.
	Skin / Eyes	Eye: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical aid. . Skin In case of contact, flush skin with plenty of water. Remove contaminated clothing and shoes. Get medical aid if irritation develops and persists. Wash clothing before reuse.
	Ingestion	If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical aid. .
Special procedure	Use NIOSH approved self contained positive pressure breathing apparatus with full face piece and protective clothing.	
12. ACCIDENTAL RELEASE MEASURES		
General Information	Always use proper personal protective equipment as indicated in section 9	
Spills / Release	Vacuum or sweep up material and place into a suitable disposal container. Avoid generating dusty conditions. Provide ventilation.	
13. DISPOSAL CONSIDERAIONS		
Seal all waste in vapour tight plastic bags. Dispose of in a manner consistent with federal, state, and local regulations.		

14. TRANSPORT INFORMATION		
		US (DOT) / Canada (TDG)
	Shipping Name	Not Regulated
	Hazard Class	
	UN Number	
	Packing Group	
	Hazard Class label	
15. REGULATORY INFORMATION		
	Federal, state & International Regulations.	
16. NAME OF FIRM - NAVIN FLUORINE INTERNATIONAL LIMITED		
	Mailing address	Post Office - Bhestan, Surat, PIN 395 023, Gujarat, India
	Telephone	+91-261-2890325 to 2890329
	Fax	+91-261-2890288
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