

## SAFETY DATA SHEET AMMONIUM BIFLUORIDE

### SECTION 1 : CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

<b>Product Name</b>	<b>Ammonium Bifluoride</b>	
<b>SYNONYMS</b>	: Ammonium Bifluoride; Ammonium Hydrofluoride; Ammonium Difluoride Ammonium hydrogen fluoride; ammonium difluoride; acid ammonium Fluoride	
<b>CAS No</b>	: 1341-49-7	
<b>Molecular Weight</b>	: 57.04	
<b>Chemical Designation</b>	: $\text{NH}_4\text{HF}_2$	
<b>General Use</b>	Industrial / Chemical Manufacturing	
<b>Contact Information</b>	<b>OFFICE :</b> <b>Madras Fluorine Private Ltd</b> No.71, 4 <sup>th</sup> Main Road Gandhi Nagar, Adyar Chennai 600 020, India E-mail : exim@mfplfluorine.com	<b>FACTORY</b> <b>Madras Fluorine Private Ltd</b> Express Highway Manali Chennai – 600 068, India E-mail: sales@mfplfluorine.com
<b>Emergency Telephone No:</b>	<b>+91 44 2442 0654</b>  <b>MON – FRI : 9.00 AM – 5.00 PM</b>	<b>+91 8925095650</b>  <b>MON – SAT : 9.00 AM – 5.30 PM</b>

### SECTION 2 : HAZARDS IDENTIFICATION

#### DANGER

Keep out of reach of children  
Read label and SDS thoroughly before use.

**HSNO Classifications:** 6.1C (All), 6.1C (O), 8.2C, 8.3A , 9.3B

**Transport: 8**

**Hazard statements:** Toxic if swallowed. Causes burns. Risk of serious damage to eyes.

**Pictograms:**



**Precautionary statements:** Do not breathe dust. Avoid contact with skin and eyes. In case of contact with yes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label whenever possible).



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## SECTION 3 : COMPOSITION/INFORMATION ON INGREDIENT

Components	CAS Number	Proportion
Ammonium bifluoride	1341-49-7	>=98%

## SECTION 4 : FIRST AID MEASURES

**EYES:** Get medical aid immediately. Do NOT allow victim to rub or keep eyes closed. Extensive irrigation with water is required (at least 30 minutes).

**SKIN:** Get medical aid immediately. Immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Destroy contaminated shoes.

**INGESTION:** Do NOT induce vomiting. If victim is conscious and alert, give 2-4 cup full of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.

**INHALATION:** get medical aid immediately. Remove from exposure to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Do NOT use mouth-to-mouth resuscitation. If breathing has ceased apply artificial respiration using oxygen and a suitable mechanical device such as a bag or mask.

## SECTION 5 : FIRE-FIGHTING MEASURES

**GENERAL INFORMATION:** As in any fire, wear self-contained breathing apparatus in pressure demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Use water spray to keep fire-exposed containers cool. Wear appropriate (SCBA) to prevent contact with thermal decomposition products. Contact with metals may evolve flammable hydrogen gas. Containers may explode when heated. Noncombustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes.

**EXTINGUISHING NOTES:** Use water spray to cool fire-exposed containers. Substance is noncombustible; use agent most appropriate to extinguish surrounding fire. Do NOT get water inside containers. For small fires, use dry chemical, carbon dioxide or water spray. For large fires, use dry chemical, carbon dioxide, alcohol-resistant foam, or water spray.

**FLASH POINT:** Not Applicable

**AUTOIGNITION TEMPERATURE:** Not Applicable

**EXPLOSION LIMITS, LOWER:** Not Applicable

**UPPER:** Not Available

**NFPA RATING:** (estimated) Health: 3, Flammability: 0, Instability: 0



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## SECTION 6 : ACCIDENTAL RELEASE MEASURES

**GENERAL INFORMATION:** Use proper personal protective equipment as indicated in Section 8.

**SPILLS/LEAKS:** Vacuum or sweep up material and place into a suitable disposal container. Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Avoid generating dusty conditions. Provide ventilation.

## SECTION 7 : HANDLING AND STORAGE

**HANDLING:** Wash thoroughly after handling. Use only in a well-ventilated area. Minimize dust generation and accumulation. Do not breathe dust, vapor, mist, or gas. Do not get in eyes, on skin, or on clothing. Keep container tightly closed. Do not ingest or inhale. Use only in a chemical fume hood. Discard contaminated shoes.

**STORAGE:** Keep away from heat and flame. Keep container closed when not in use. Store in a tightly closed container. Corrosive area. Keep away from acids. Keep away from bases. Store protected.

## SECTION 8 : EXPOSURE CONTROLS / PERSONAL PROTECTION

**ENGINEERING CONTROLS:** Facilities storing or utilizing this material should be equipped with an eye wash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

### EXPOSURE LIMITS:

CHEMICAL NAME	ACGIH	NIOSH	OSHA-Final PELs
Ammonium Bifluoride	None listed	None listed	None listed

OSHA VACATED PEL Ls: AMMONIUM BIFLUORIDE: No OSHA Vacated PELs are listed for this chemical.

### PERSONAL PROTECTIVE EQUIPMENT:

**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.

**RESPIRATORS:** A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI z88.2 requirements or European Standard EN149 must be followed whenever workplace conditions warrant a respirator's use.



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## SECTION 9 : PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE	: Solid
APPEARANCE	: white
ODOR	: Slightly pungent
pH	: 3.5 @ 5% solution
VAPOR PRESSURE	: 1hPa @ 20 deg C
VAPOR DENSITY	: Not available
EVAPORATION RATE	: Not available
VISCOSITY	: Not available
BOILING POINT	: 239.5 deg C
FREEZING/MELTING POINT	: 125 deg C
DECOMPOSITION TEMPERATURE	: Not available
SOLUBILITY	: 630 G/L WATER (20 deg C)
SPECIFIC GRAVITY/ DENSITY	: 1.150
MOLECULAR FORMULA	: H5F2N
MOLECULAR WEIGHT	: 57.04

## SECTION 10 : STABILITY AND REACTIVITY

### Stability:

Stable under ordinary conditions of use and storage.

### Hazardous Decomposition Products:

Emits toxic fumes of hydrogen fluoride, nitric oxides, and ammonia when heated to decomposition. Upon contact with moisture and metal, this material may release hydrogen gas.

### Hazardous Polymerization:

Will not occur.

### Incompatibilities:

Reacts with acids to liberate hydrogen fluoride and base to liberate ammonia. When combined with moisture, will corrode glass, cement and most metals.

### Conditions to Avoid:

No information found.

## SECTION 11 : TOXICOLOGICAL INFORMATION

CAS# 1341-49-7 : BQ9200000

LD50/LC50: Not available

### CARCINOGENICITY:

CAS# 1341-49-7

ACGIH: A4 - Not classified as a Human Carcinogen (as F) (Listed as Fluorides).

IARC: IARC Group 3 - Not classified (Listed as Fluoride compounds, inorganic, n.o.s.)

EPIDEMIOLOGY: No data available

TERATOGENICITY: No data available

REPRODUCTIVE EFFECTS: No data available

NEUROTOXICITY: No data available

MUTAGENICITY: No data available

OTHER STUDIES: No data available



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## SECTION 12 : ECOLOGICAL INFORMATION

### Environmental Fate:

This material is not expected to significantly bio accumulate. When released into water, this material may biodegrade to a moderate extent.

### Environmental Toxicity:

This material is not expected to be toxic to aquatic life. The LC50/96-hour values for fish are over 100 mg/l.

## SECTION 13 : DISPOSAL CONSIDERATIONS

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. U.S. EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3.; Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-SERIES: None listed

RCRA U-SERIES: None listed

## SECTION 14 : TRANSPORT INFORMATION

### Domestic (Land, D.O.T.)

**Proper Shipping Name:** RQ, AMMONIUM HYDROGEN DIFLUORIDE, SOLID

**Hazard Class:** 8 Corrosive

**UN/NA:** UN1727

Packing Group: II

**Information reported for product/size:** 100LB

**International (Water, I.M.O.)**

**Proper Shipping Name:** AMMONIUM HYDROGEN DIFLUORIDE, SOLID

**Hazard Class:** 8 Corrosive

**UN/NA:** UN1727

Packing Group: II

**Information reported for product/size:** 100LB

**International (Air, I.C.A.O.)**

**Proper Shipping Name:** AMMONIUM HYDROGEN DIFLUORIDE, SOLID

**Hazard Class:** 8 Corrosive

**UN/NA:** UN1727

Packing Group: II

**Information reported for product/size:** 100LB



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## SECTION 15 : REGULATORY INFORMATION

For Ingredient: Ammonium Bifluoride (1341-49-7)

-----\Chemical Inventory Status - Part 1\-----

TSCA - Yes

EC - Yes

Japan - Yes

Australia - Yes

-----\Chemical Inventory Status - Part 2\-----

--Canada--

Korea - Yes

DSL - Yes

NDSL - No

Phil. - Yes

-----\Federal, State & International Regulations - Part 1\

-- SARA 302-- RQ - No; TPQ - No

-- SARA 313 -- List - No Chemical Catg. - No

-----\Federal, State & International Regulations - Part 2\

-RCRA- 261.33 - No

TSCA 8(d)- No

CERCLA - 100

Chemical Weapons Convention: Yes TSCA 12(b): No CDTA: No

SARA 311/312: Acute: Yes Chronic: Yes Fire: No Pressure: No

Reactivity: No (Pure / Solid)

**Australian Hazchem Code: 2X**

**Poison Schedule: S6**

**WHMIS:**

This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

## SECTION 16 : OTHER INFORMATION

**NFPA Ratings:** Health: 3 Flammability: 0 Reactivity: 0

**Label Hazard Warning:**

DANGER! MAY BE FATAL IF SWALLOWED OR INHALED. AFFECTS RESPIRATORY SYSTEM, HEART, SKELETON, CIRCULATORY SYSTEM, CENTRAL NERVOUS SYSTEM AND KIDNEYS. CAUSES IRRITATION AND BURNS TO SKIN, EYES AND RESPIRATORY TRACT. IRRITATION AND BURN EFFECTS MAY BE DELAYED. HARMFUL IF ABSORBED THROUGH SKIN.

**Label Precautions:**

Do not breathe dust.

Keep container closed.

Use only with adequate ventilation.

Wash thoroughly after handling.

Do not get in eyes, on skin, or on clothing.



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## **Label First Aid:**

In all cases call a physician immediately. First Aid procedures should be pre-planned for fluoride compound emergencies. If swallowed, administer milk, chewable calcium carbonate tablets or milk of magnesia. Never give anything by mouth to an unconscious person. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing difficult, give artificial respiration. In case of skin contact wipe off any excess material then immediately flush skin with large amounts of soapy water. Remove contaminated clothing and shoes. Wash clothing before re-use. Apply bandages soaked in magnesium sulfate. In case of eye contact, immediately flush eyes with gentle but large stream of water for at least 15 minutes, lifting upper and lower eyelids occasionally.

## **Product Use:**

Laboratory Reagent.

## **Disclaimer:**

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**REVISION : 4**

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