

## Safety Data Sheet

Classified According to OSHA Hazard Communication Standard (HCS)

### SECTION 1: Identification

#### 1.1. Product Identifier

**Trade Name or Designation:** Ammonium Bifluoride, Technical

**Product Number:** RDCA0420

**Other Identifying Product Numbers:** RDCA0420-2.5A5, RDCA0420-500B1

#### 1.2. Recommended Use and Restrictions on Use

General Laboratory Reagent

#### 1.3. Details of the Supplier of the Safety Data Sheet

**Company:** Ricca Chemical Company

**Address:** 448 West Fork Drive

Arlington, TX 76012 USA

**Telephone:** 888-467-4222

#### 1.4. Emergency Telephone Number (24 hours)

CHEMTREC (USA) 800-424-9300

CHEMTREC (International) 1+ 703-527-3887

### SECTION 2: Hazard(s) Identification

#### 2.1. Classification of the Substance or Mixture

For the full text of the Hazard and Precautionary Statements listed below, see Section 16.

Hazard Class	Category	Hazard Statements	Precautionary Statements:
Skin Corrosion / Irritation	Category 1	H314	P260, P264, P280, P301+P330+P331, P303+P361+P353, P363, P304+P340, P310, P321, P305+P351+P338, P405, P501
Eye Damage / Irritation	Category 1	H318	P280, P305+P351+P338, P310
Specific Target Organs/Systemic Toxicity Following Single Exposure	Category 3	H335, H336	P261, P271, P304+P340, P312, P403+P233, P405, P501

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### 2.2. GHS Label Elements

Pictograms:



Signal Word: **Danger**

Hazard Statements:

Hazard Number	Hazard Statement
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.

Precautionary Statements:

Precautionary Number	Precautionary Statement
P260	Do not breathe dust/fumes.
P261	Avoid breathing dust/fumes.
P264	Wash arms, hands and face thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves and eye protection.
P301+P330+P331	IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
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 physician.
P312	Call a POISON CENTER or physician if you feel unwell.
P321	Specific treatment (Wash areas of contact with water immediately).
P363	Wash contaminated clothing before reuse.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents in accordance with local, state, federal and international regulations.

### 2.4. Hazards not Otherwise Classified or Covered by GHS

Data not available.

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## SECTION 3: Composition / Information on Ingredients

### 3.1. Components of Substance or Mixture

Chemical Name	Formula	Molecular Weight	CAS Number	Weight%
Ammonium Bifluoride	NH <sub>4</sub> F·HF	57.04 g/mol	1341-49-7	100.00

## SECTION 4: First-Aid Measures

### 4.1. General First Aid Information

**Eye Contact:** IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. May cause severe irritation with possible permanent damage.

**Inhalation:** IF INHALED: Remove person to fresh air and keep comfortable for breathing.

**Skin Contact:** IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. May cause irritation and possible burns to the skin. May be absorbed through the skin. Effects may not appear immediately.

**Ingestion:** IF SWALLOWED: rinse mouth. Do NOT induce vomiting. Administer with milk, chewable calcium carbonate tablets or milk of magnesia. Vomiting may occur spontaneously. Do not induce. Call a physician immediately.

### 4.2. Most Important Symptoms and Effects, Acute and Delayed

Causes severe skin burns and eye damage. Causes serious eye damage. May cause respiratory irritation. May cause drowsiness or dizziness. Vomiting may occur spontaneously. Call a physician immediately. Wash areas of contact with plenty of water for 15 minutes. For eyes, get medical attention. Causes severe burns, although contact may not be felt immediately. Can be absorbed through the skin, causing subcutaneous burns. If contact with skin is suspected, wash immediately with large amount of water. Inhaled dust can cause burns or poisoning. Wash hands thoroughly after handling. EYE CONTACT: May cause severe irritation with possible permanent damage. SKIN CONTACT: May cause irritation and possible burns to the skin. May be absorbed through the skin. Effects may not appear immediately. CHRONIC EFFECTS / CARCINOGENICITY: Chronic exposures may cause mottling of teeth and bone damage and fluorosis. Symptoms of fluorosis include brittle bones, weight loss, anemia, calcified ligaments, general ill health and joint stiffness.

### 4.3. Medical Attention or Special Treatment Needed

Immediately call a POISON CENTER or physician. Specific treatment (Wash areas of contact with water immediately). Irrigate immediately with large quantity of water for at least 15 minutes. Call a physician if irritation develops. Remove to fresh air. Give artificial respiration if necessary. If breathing is difficult, give oxygen. Wipe off any excess material from skin and then immediately flush with plenty of soap and water for at least 15 minutes. Apply bandages soaked in Magnesium Sulfate. Administer with milk, chewable calcium carbonate tablets or milk of magnesia. Vomiting may occur spontaneously. Do not induce. Call a physician immediately.

## SECTION 5: Fire-Fighting Measures

### 5.1. Extinguishing Media

Use dry chemical, alcohol foam, or carbon dioxide for extinguishing the surrounding fire.



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### 5.2. Specific Hazards Arising from the Substance or Mixture

Not considered to be a fire or explosion hazard. May react with metals to release flammable Hydrogen gas.

### 5.3. Special Protective Equipment for Firefighters

Use protective clothing and NIOSH-approved breathing equipment appropriate for the surrounding fire.

## SECTION 6: Accidental Release Measures

### 6.1. Personal Precautions, Protective Equipment and Emergency Procedures

Wear protective gloves and eye protection.

### 6.2. Cleanup and Containment Methods and Materials

Pick up in a manner that does not generate dust. Powder may be moistened with water to aid in the clean-up.

## SECTION 7: Handling and Storage

### 7.1. Precautions for Safe Handling and Storage Conditions

Store locked up. Keep in a tightly closed container. Store in a cool, dry, ventilated area. Protect against physical damage. Separate from acids and alkalis. Do not store in metal containers, as contact with moisture and metal at the same time may release flammable hydrogen gas.

Containers of this material may be hazardous when empty since they retain product

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## SECTION 8: Exposure Controls / Personal Protection

### 8.1 Control Parameters

Chemical Name	Limit Type	Country	Exposure Limit	Information Source
Ammonium Bifluoride (1341-49-7)	TWA	USA	"2.5 mg/m <sup>3</sup> TWA (as F)" As Fluorides [RR-02792-9]	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Ammonium Bifluoride (1341-49-7)	TLV-TWA	USA	"2.5 mg/m <sup>3</sup> TWA (as F)" As Fluorides [RR-02792-9]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Ammonium Bifluoride (1341-49-7)	TLV-TWA	USA	"2.5 mg/m <sup>3</sup> TWA (as F)" As Fluorides [RR-02792-9]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
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Ammonium Bifluoride (1341-49-7)	TLV-TWA	USA	"2.5 mg/m <sup>3</sup> TWA (as F)" As Fluorides [RR-02792-9]	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)

### 8.2. Exposure Controls

**Engineering Controls:** Use only outdoors or in a well-ventilated area. No specific controls are needed. Normal room ventilation is adequate.

**Respiratory Protection:** A system of local or general exhaust is recommended to keep exposure levels below the Airborne Exposure Limits. If necessary, wear a dust mask respirator to minimize exposure to dust particles.

**Skin Protection:** Wear protective gloves and eye protection. Chemical resistant gloves.

**Eye Protection:** Wear protective gloves and eye protection. Safety glasses or goggles.

### 8.3. Personal Protective Equipment

Wear protective gloves and eye protection. A system of local or general exhaust is recommended to keep exposure levels below the Airborne Exposure Limits. If necessary, wear a dust mask respirator to minimize exposure to dust particles. Chemical resistant gloves. Safety glasses or goggles.



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### SECTION 9: Physical and Chemical Properties

#### 9.1. Basic Physical and Chemical Properties

**Appearance:** Colorless/white solid

**Physical State:** Solid

**Odor:** Data not available.

**Odor Threshold:** Data not available.

**pH:** 3.5 (5% solution)

**Melting/Freezing Point:** 124.6°C

**Initial Boiling Point/Range:** Approximately 240°C - Approximately 240°C

**Flash Point:** Data not available.

**Evaporation Rate:** Data not available.

**Flammability:** Data not available.

**Flammability/Explosive Limits:** Data not available.

**Vapor Pressure:** 1 hPa at 20°C

**Vapor Density:** Data not available.

**Relative Density:** 1.50

**Solubility:** 630 G/L at 20°C

**Partition Coefficient:** Data not available.

**Auto-Ignition Temperature:** Data not available.

**Decomposition Temperature:** Data not available.

**Viscosity:** Data not available.

**Explosive Properties:** Data not available.

**Oxidizing Properties:** Data not available.

### SECTION 10: Stability and Reactivity

#### 10.1. Reactivity and Chemical Stability

Stable under normal conditions of use and storage.

#### 10.2. Possibility of Hazardous Reactions

Data not available.

#### 10.3. Conditions to Avoid and Incompatible Materials

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



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### 10.4. Hazardous Decomposition Products

Will not occur.

## SECTION 11: Toxicological Information

### 11.1. Information on Toxicological Effects

#### Acute Toxicity - Oral Exposure:

Not applicable.

#### Acute Toxicity - Dermal Exposure:

Not applicable.

#### Acute Toxicity - Inhalation Exposure:

Not applicable.

#### Acute Toxicity - Other Information:

LD50, Oral, Rat: No information available for Ammonium Bifluoride.

#### Skin Corrosion and Irritation:

Causes severe skin burns and eye damage. Do not breathe dust/fumes. Wash arms, hands and face thoroughly after handling. Wear protective gloves and eye protection. IF SWALLOWED: rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Wash contaminated clothing before reuse. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or physician. Specific treatment (Wash areas of contact with water immediately). IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Store locked up. Dispose of contents in accordance with local, state, federal and international regulations.

#### Serious Eye Damage and Irritation:

Causes serious eye damage. Wear protective gloves and eye protection. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or physician.

#### Respiratory Sensitization:

Not applicable.

#### Skin Sensitization:

Not applicable.

#### Germ Cell Mutagenicity:

Not applicable.

#### Carcinogenicity:

Not applicable.

#### Reproductive Toxicity:

Not applicable.

#### Specific Target Organ Toxicity from Single Exposure:

May cause respiratory irritation. May cause drowsiness or dizziness. Avoid breathing dust/fumes. Use only outdoors or in a well-ventilated area. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. Store in a well-ventilated place. Keep container tightly closed. Store locked up. Dispose of contents in accordance with local, state, federal and international regulations.



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**Specific Target Organ Toxicity from Repeated Exposure:**

Not applicable.

**Aspiration Hazard:**

Not applicable.

**Additional Toxicology Information:**

Data not available.

### SECTION 12: Ecological Information

**12.1. Ecotoxicity**

Not applicable.

**12.2. Persistence and Degradability**

Data not available.

**12.3. Bioaccumulative Potential**

Data not available.

**12.4. Mobility in Soil**

Data not available.

**12.5. Other Adverse Ecological Effects**

Data not available.

### SECTION 13: Disposal Considerations

**13.1. Waste Treatment Methods**

Data not available.





## Safety Data Sheet

### SECTION 14: Transportation Information

#### 14.1. Transportation by Land-Department of Transportation (DOT, United States of America)

**Sizes:** 2.5 K, 500 g

**UN Number:** UN1727

**Proper Shipping Name:** Ammonium hydrogendifluoride, solid

**Hazard Class:** 8

**Packing Group:** II

**Hazard Label(s):**



#### 14.2. Transportation by Air - International Air Transport Association (IATA)

**Sizes:** 2.5 K, 500 g

**UN Number:** UN1727

**Proper Shipping Name:** Ammonium hydrogendifluoride, solid

**Hazard Class:** 8

**Packing Group:** II

**Hazard Label(s):**



#### 14.3 Transportation of Dangerous Goods (TDG, Canada)

**Sizes:** 2.5 K, 500 g

**UN Number:** UN1727

**Proper Shipping Name:** AMMONIUM HYDROGENDIFLUORIDE, SOLID

**Hazard Class:** 8

**Packing Group:** II

**Hazard Label(s):**



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## SECTION 15: Regulatory Information

### 15.1. Occupational Safety and Health Administration (OSHA) Hazards

Not listed.

### 15.2. Superfund Amendments and Reauthorization Act (SARA) 302 Extremely Hazardous Substances

Not listed.

### 15.3. Superfund Amendments and Reauthorization Act (SARA) 311/312 Hazardous Chemicals

Ammonium Bifluoride (CAS # 1341-49-7): 100 lb final RQ; 45.4 kg final RQ

### 15.4. Superfund Amendments and Reauthorization Act (SARA) 313 Toxic Release Inventory (TRI)

Ammonium Bifluoride (CAS # 1341-49-7): "1.0 % de minimis concentration (10% of total aqueous Ammonia is reportable under this listing)" As Aqueous ammonia from water dissociable ammonium salts and other sources [RR-47925-4]

Ammonium Bifluoride (CAS # 1341-49-7): 1.0 % de minimis concentration (10% of total aqueous Ammonia is reportable under this listing)

### 15.5. Massachusetts Right-to-Know Substance List

Ammonium Bifluoride (CAS # 1341-49-7): Present

### 15.6. Pennsylvania Right-to-Know Hazardous Substances

Ammonium Bifluoride (CAS # 1341-49-7): Environmental hazard

Ammonium Bifluoride (CAS # 1341-49-7): Present

### 15.7. New Jersey Worker and Community Right-to-Know Components

Ammonium Bifluoride (CAS # 1341-49-7): "sn 0936" As Fluorides [RR-02792-9]

Ammonium Bifluoride (CAS # 1341-49-7): corrosive

Ammonium Bifluoride (CAS # 1341-49-7): sn 0089

Ammonium Bifluoride (CAS # 1341-49-7): sn 0936

### 15.8. California Proposition 65

Not listed.

### 15.9. Canada Domestic Substances List / Non-Domestic Substances List (DSL/NDSL)

Ammonium Bifluoride (CAS # 1341-49-7): Present (DSL)

### 15.10. United States of America Toxic Substances Control Act (TSCA) List

All components of this solution are listed as active on the TSCA Inventory or are mixtures (hydrates) of active items listed on the TSCA Inventory.

Ammonium Bifluoride (CAS # 1341-49-7): Present (ACTIVE)

### 15.11. European Inventory of Existing Commercial Chemical Substances (EINECS), European List of Notified Chemical Substances (ELINCS), and No Longer Polymers (NLP)

Ammonium Bifluoride (CAS # 1341-49-7): 215-676-4

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## SECTION 16: Other Information

### 16.1. Full Text of Hazard Statements and Precautionary Statements

Causes severe skin burns and eye damage. May cause respiratory irritation. May cause drowsiness or dizziness.

Do not breathe dust/fumes. Wash arms, hands and face thoroughly after handling. Use only outdoors or in a well-ventilated area. Wear protective gloves and eye protection.

IF SWALLOWED: rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or physician. Specific treatment (Wash areas of contact with water immediately). Wash contaminated clothing before reuse.

Store in a well-ventilated place. Keep container tightly closed. Store locked up.

Dispose of contents in accordance with local, state, federal and international regulations.

### 16.2. Miscellaneous Hazard Classes

**Canadian Carcinogenicity Hazard Class:** Not Applicable.

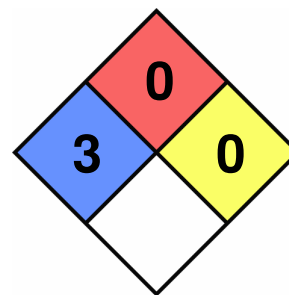
**Physical Hazards Not Otherwise Classified (PHNOC):** Not Applicable.

**Health Hazards Not Otherwise Classified (HHNOC):** Not Applicable.

**Biohazardous Infectious Materials Hazard Class:** Not Applicable.

### 16.3. National Fire Protection Association (NFPA) Rating

**Health:** 3  
**Flammability:** 0  
**Reactivity:** 0  
**Special Hazard:**



### 16.4. Document Revision

**Last Revision Date:** 2023-09-11

## DISCLAIMER

When handled properly by qualified personnel, the product described herein does not present a significant health or safety hazard. Alteration of its characteristics by concentration, evaporation, addition of other substances, or other means may present hazards not specifically addressed herein and which must be evaluated by the user. The information furnished herein is believed to be accurate and represents the best data currently available to us. No warranty, expressed or implied, is made and RICCA CHEMICAL COMPANY assumes no legal responsibility or liability whatsoever resulting from its use.