1. Identification

Product Name: Ammonium hydrogen difluoride

Cat No.: AC208820000, AC208820010, AC208820050, AC208820250, AC208822500

CAS No: 1341-49-7

Synonyms: Ammonium bifluoride

Recommended Use: Laboratory chemicals.

Uses advised against: Food, drug, pesticide or biocidal product use.

2. Hazard(s) identification

Classification:
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

<table>
<thead>
<tr>
<th>Hazard Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute oral toxicity</td>
<td>Category 3</td>
</tr>
<tr>
<td>Skin Corrosion/Irritation</td>
<td>Category 1A</td>
</tr>
<tr>
<td>Serious Eye Damage/Eye Irritation</td>
<td>Category 1</td>
</tr>
<tr>
<td>Specific target organ toxicity (single exposure)</td>
<td>Category 3</td>
</tr>
<tr>
<td>Target Organs - Respiratory system</td>
<td>Category 3</td>
</tr>
</tbody>
</table>

Label Elements

Signal Word: Danger

Hazard Statements: 

Page 1 / 8
Ammonium hydrogen difluoride

Toxic if swallowed
Causes severe skin burns and eye damage
May cause respiratory irritation

Precautionary Statements
Prevention
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Do not breathe dust/fume/gas/mist/vapors/spray
Wear protective gloves/protective clothing/eye protection/face protection
Use only outdoors or in a well-ventilated area
Response
Immediately call a POISON CENTER or doctor/physician
Inhalation
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Skin
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
Wash contaminated clothing before reuse
Eyes
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Ingestion
Rinse mouth
Do NOT induce vomiting
Storage
Store locked up
Store in a well-ventilated place. Keep container tightly closed
Disposal
Dispose of contents/container to an approved waste disposal plant
Hazards not otherwise classified (HNOC)
None identified

3. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS No</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium bifluoride</td>
<td>1341-49-7</td>
<td>&gt;95</td>
</tr>
</tbody>
</table>

4. First-aid measures

General Advice
Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

Eye Contact
In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Skin Contact
Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.

Inhalation
Remove to fresh air. If not breathing, give artificial respiration. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a
pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required.

Ingestion

Do NOT induce vomiting. Call a physician or poison control center immediately.

Most important symptoms and effects

Causes burns by all exposure routes. Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation. Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated.

Notes to Physician

Treat symptomatically

5. Fire-fighting measures

Suitable Extinguishing Media

Substance is nonflammable; use agent most appropriate to extinguish surrounding fire. CO₂, dry chemical, dry sand, alcohol-resistant foam.

Unsuitable Extinguishing Media

No information available

Flash Point

No information available

Method -

No information available

Autoignition Temperature

No information available

Explosion Limits

Upper

No data available

Lower

No data available

Sensitivity to Mechanical Impact

No information available

Sensitivity to Static Discharge

No information available

Specific Hazards Arising from the Chemical

The product causes burns of eyes, skin and mucous membranes.

Hazardous Combustion Products

Hydrogen fluoride. Ammonia.

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

6. Accidental release measures

Personal Precautions

Use personal protective equipment as required. Evacuate personnel to safe areas. Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Avoid dust formation. Should not be released into the environment.

Environmental Precautions

Sweep up and shovel into suitable containers for disposal. Avoid dust formation.

Methods for Containment and Clean Up

Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Use only under a chemical fume hood. Do not ingest. If swallowed then seek immediate medical assistance. Do not breathe (dust, vapor, mist, gas). Avoid dust formation.

7. Handling and storage

Handling

8. Exposure controls / personal protection

Exposure Guidelines

<table>
<thead>
<tr>
<th>Component</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH IDLH</th>
<th>Mexico OEL (TWA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium bifluoride</td>
<td>TWA: 2.5 mg/m³</td>
<td>(Vacated) TWA: 2.5 mg/m³</td>
<td>IDLH: 250 mg/m³</td>
<td>TWA: 2.5 mg/m³</td>
</tr>
</tbody>
</table>

Legend

ACGIH - American Conference of Governmental Industrial Hygienists
OSHA - Occupational Safety and Health Administration
NIOSH IDLH: NIOSH - National Institute for Occupational Safety and Health

Engineering Measures

Use only under a chemical fume hood. Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal Protective Equipment

Eye/face Protection

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 and body protection

Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

<table>
<thead>
<tr>
<th>Physical State</th>
<th>Solid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>White</td>
</tr>
<tr>
<td>Odor</td>
<td>Pungent</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>No information available</td>
</tr>
<tr>
<td>pH</td>
<td>3.5 5% aq. solution</td>
</tr>
<tr>
<td>Melting Point/Range</td>
<td>125 °C / 257 °F</td>
</tr>
<tr>
<td>Boiling Point/Range</td>
<td>230 °C / 446 °F @ 760 mmHg</td>
</tr>
<tr>
<td>Flash Point</td>
<td>No information available</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flammability (solid,gas)</td>
<td>No information available</td>
</tr>
<tr>
<td>Flammability or explosive limits</td>
<td></td>
</tr>
<tr>
<td>Upper</td>
<td>No data available</td>
</tr>
<tr>
<td>Lower</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>1 hPa @ 20 °C</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>1.50</td>
</tr>
<tr>
<td>Solubility</td>
<td>Soluble in water</td>
</tr>
<tr>
<td>Partition coefficient; n-octanol/water</td>
<td>No data available</td>
</tr>
<tr>
<td>Autoignition Temperature</td>
<td>No information available</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>&gt; 230°C</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Molecular Formula</td>
<td>H5F2N</td>
</tr>
<tr>
<td>Molecular Weight</td>
<td>57.04</td>
</tr>
</tbody>
</table>

10. Stability and reactivity
Reactive Hazard: None known, based on information available.

Stability: Hygroscopic.

Conditions to Avoid: Avoid dust formation. Incompatible products. Excess heat. Exposure to moisture. Exposure to moist air or water.

Incompatible Materials: Strong acids, Strong bases.

Hazardous Decomposition Products: Hydrogen fluoride, Ammonia.

Hazardous Polymerization: Hazardous polymerization does not occur.

Hazardous Reactions: None under normal processing.

### 11. Toxicological information

#### Acute Toxicity

**Product Information**

**Component Information**

<table>
<thead>
<tr>
<th>Component</th>
<th>LD50 Oral</th>
<th>LD50 Dermal</th>
<th>LC50 Inhalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium bifluoride</td>
<td>LD50 = 130 mg/kg (Rat)</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
</tbody>
</table>

**Toxicologically Synergistic Products**

No information available.

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**Irritation**

Causes burns by all exposure routes.

**Sensitization**

No information available.

**Carcinogenicity**

The table below indicates whether each agency has listed any ingredient as a carcinogen.

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS No</th>
<th>IARC</th>
<th>NTP</th>
<th>ACGIH</th>
<th>OSHA</th>
<th>Mexico</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium bifluoride</td>
<td>1341-49-7</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
</tbody>
</table>

**Mutagenic Effects**

No information available.

**Reproductive Effects**

No information available.

**Developmental Effects**

No information available.

**Teratogenicity**

No information available.

**STOT - single exposure**

Respiratory system.

**STOT - repeated exposure**

None known.

**Aspiration hazard**

No information available.

**Symptoms / effects, both acute and delayed**

Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation. Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated.

**Endocrine Disruptor Information**

No information available.

**Other Adverse Effects**

The toxicological properties have not been fully investigated.

### 12. Ecological information

**Ecotoxicity**

Do not empty into drains.
Ammonium hydrogen difluoride

Persistence and Degradability
Soluble in water. Persistence is unlikely based on information available.

Bioaccumulation/ Accumulation
No information available.

Mobility
Will likely be mobile in the environment due to its water solubility.

13. Disposal considerations

Waste Disposal Methods
Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. Transport information

DOT
- UN-No: UN1727
- Proper Shipping Name: AMMONIUM HYDROGEN DIFLUORIDE, SOLID
- Hazard Class: 8
- Packing Group: II

TDG
- UN-No: UN1727
- Proper Shipping Name: AMMONIUM HYDROGEN DIFLUORIDE, SOLID
- Hazard Class: 8
- Packing Group: II

IATA
- UN-No: UN1727
- Proper Shipping Name: AMMONIUM HYDROGEN DIFLUORIDE, SOLID
- Hazard Class: 8
- Packing Group: II

IMDG/IMO
- UN-No: UN1727
- Proper Shipping Name: AMMONIUM HYDROGEN DIFLUORIDE, SOLID
- Hazard Class: 8
- Packing Group: II

15. Regulatory information

United States of America Inventory

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS No</th>
<th>TSCA</th>
<th>TSCA Inventory notification - Active-Inactive</th>
<th>TSCA - EPA Regulatory Flags</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium bifluoride</td>
<td>1341-49-7</td>
<td>X</td>
<td>ACTIVE</td>
<td></td>
</tr>
</tbody>
</table>

Legend:
- TSCA US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)
- X - Listed
- '-' - Not Listed

TSCA 12(b) - Notices of Export
- Not applicable

International Inventories
Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), China (IECSC), Korea (KECL).

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS No</th>
<th>DSL</th>
<th>NDSL</th>
<th>EINECS</th>
<th>PICCS</th>
<th>ENCS</th>
<th>ISHL</th>
<th>AICS</th>
<th>IECSC</th>
<th>KECL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium bifluoride</td>
<td>1341-49-7</td>
<td>X</td>
<td>-</td>
<td>215-676-4</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>KE-01679</td>
</tr>
</tbody>
</table>

KECL - NIER number or KE number (http://ncis.nier.go.kr/en/main.do)

U.S. Federal Regulations
SARA 313

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS No</th>
<th>Weight %</th>
<th>SARA 313 - Threshold Values %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium bifluoride</td>
<td>1341-49-7</td>
<td>&gt;95</td>
<td>1.0</td>
</tr>
</tbody>
</table>

SARA 311/312 Hazard Categories

See section 2 for more information

CWA (Clean Water Act)

<table>
<thead>
<tr>
<th>Component</th>
<th>CWA - Hazardous Substances</th>
<th>CWA - Reportable Quantities</th>
<th>CWA - Toxic Pollutants</th>
<th>CWA - Priority Pollutants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium bifluoride</td>
<td>X</td>
<td>100 lb</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Clean Air Act

Not applicable

OSHA - Occupational Safety and Health Administration

Not applicable

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

<table>
<thead>
<tr>
<th>Component</th>
<th>Hazardous Substances RQs</th>
<th>CERCLA EHS RQs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium bifluoride</td>
<td>100 lb</td>
<td>-</td>
</tr>
</tbody>
</table>

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

<table>
<thead>
<tr>
<th>Component</th>
<th>Massachusetts</th>
<th>New Jersey</th>
<th>Pennsylvania</th>
<th>Illinois</th>
<th>Rhode Island</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium bifluoride</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>X</td>
</tr>
</tbody>
</table>

U.S. Department of Transportation

Reportable Quantity (RQ): Y
DOT Marine Pollutant: N
DOT Severe Marine Pollutant: N

U.S. Department of Homeland Security

This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade

No information available

Authorisation/Restrictions according to EU REACH

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium bifluoride</td>
<td>-</td>
<td>Use restricted. See item 75. (see link for restriction details)</td>
<td>-</td>
</tr>
</tbody>
</table>


Safety, health and environmental regulations/legislation specific for the substance or mixture

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS No</th>
<th>OECD HPV</th>
<th>Persistent Organic Pollutant</th>
<th>Ozone Depletion Potential</th>
<th>Restriction of Hazardous Substances (RoHS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium bifluoride</td>
<td>1341-49-7</td>
<td>Listed</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
<tr>
<td>------------------------</td>
<td>---------</td>
<td>-----------------------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------------</td>
<td>-----------------------------</td>
<td>-----------------------------------</td>
</tr>
<tr>
<td>Ammonium bifluoride</td>
<td>1341-49-7</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

16. Other information

Prepared By
Regulatory Affairs
Thermo Fisher Scientific
Email: EMSDS.RA@thermofisher.com

Creation Date
08-Jul-2009

Revision Date
24-Dec-2021

Print Date
24-Dec-2021

Revision Summary
This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

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 given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. 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.

End of SDS