



### 3. Composition/information on ingredients

#### 3.1 Substances

Synonyms: Etching powder, ammonium bifluoride

Formula:  $H_5F_2N$

Molecular weight: 57.04 g/mol

Component	Concentration
Ammonium bifluoride	
CAS No.	1341-49-7 <=100%

### 4. First aid measures

#### 4.1 Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled /breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact - Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician. In case of eye contact Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed - Do NOT induce vomiting. Never give anything by mouth to an unconscious person.

Rinse mouth with water. Consult a physician.

#### 4.2 Most important symptoms and effects, both acute and delayed

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin.

Cough, Shortness of breath, Headache, Nausea.

#### 4.3 Indication of any immediate medical attention and special treatment needed

No data available

### 5. Firefighting measures

#### 5.1 Extinguishing media

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

#### 5.2 Special hazards arising from the substance or mixture

Nitrogen oxides (NOx), Hydrogen fluoride

#### 5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

#### 5.4 Further information

No data available

### 6. Accidental release measures

#### 6.1 Personal precautions, protective equipment and emergency procedures

Wear respiratory protection. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

#### 6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

#### 6.3 Methods and materials for containment and cleaning up

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

### 7. Handling and storage

#### 7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed.

#### 7.2 Conditions for safe storage, including any incompatibilities

Store in cool place. Keep container tightly closed in a dry and well-ventilated place.

#### 7.3 Specific end use(s)

No data available

### 8. Exposure controls/personal protection

#### 8.1 Control parameters

##### Occupational Exposure Limits

Component	CAS No	Value	Control parameters	Basis	Remarks
Ammonium bifluoride	1341-49-7	WES-TWA	2.5 mg/m <sup>3</sup>	New Zealand. Workplace Exposure Standards for Atmospheric Contaminants	Exposure can also be estimated by biological monitoring

##### Biological Exposure Limits

Component	CAS No.	Parameters	Value	Biological specimen	Basis
Ammonium bifluoride	1341-49-7	Fluoride	160 micromol per litre	Urine	New Zealand. Biological Exposure Indices
		Fluoride	3.0000 mg/l	Urine	New Zealand. Biological Exposure Indices
		Fluoride	530 micromol per litre	Urine	New Zealand. Biological Exposure Indices

#### 8.2 Exposure controls

Appropriate engineering controls

Avoid contact with skin, eyes and clothing.

Wash hands before breaks and immediately after handling the product.

Personal protective equipment

Eye/face protection

Face shield and safety glasses. Use equipment for eye protection tested and approved under appropriate government standards

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Body Protection

Complete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator or respirator cartridges as a backup to engineering controls. If the respirator is the sole

means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards.

## **9. Physical and chemical properties**

### 9.1 Information on basic physical and chemical properties

#### a) Appearance

Form: crystalline

Colour: white

#### b) Odour

No data available

#### c) Odour Threshold

No data available

#### d) pH

No data available

#### e) Melting point/freezing point

Melting point/range: 125 °C - lit.

#### f) Initial boiling point and boiling range

No data available

#### g) Flash point

Not applicable

#### h) Evaporation rate

No data available

#### i) Flammability (solid, gas)

No data available

#### j) Upper/lower flammability or explosive limits

No data available

#### k) Vapour pressure

No data available

#### l) Vapour density

No data available

#### m) Relative density

1.500 g/cm<sup>3</sup>

#### n) Water solubility

No data available

#### o) Partition coefficient: n-octanol/water

No data available

#### p) Auto-ignition temperature

No data available

#### q) Decomposition temperature

No data available

#### r) Viscosity

No data available

## **10. Stability and reactivity**

### 10.1 Reactivity

No data available

### 10.2 Chemical stability

No data available

### 10.3 Possibility of hazardous reactions

No data available

### 10.4 Conditions to avoid

Avoid moisture.

10.5 Incompatible materials

Strong oxidizing agents

10.6 Hazardous decomposition products

Other decomposition products

No data available

## **11. Toxicological information**

11.1 Information on toxicological effects

Acute toxicity

No data available

Skin corrosion/irritation

No data available

Serious eye damage/eye irritation

No data available

Respiratory or skin sensitisation

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

IARC: 3 - Group 3: Not classifiable as to its carcinogenicity to humans (Ammonium bifluoride)

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

Potential health effects

Inhalation

May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.

Ingestion

Toxic if swallowed. Causes burns. Skin May be harmful if absorbed through skin. Causes skin burns.

Eyes

Causes eye burns.

Signs and Symptoms of Exposure

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. Cough, Shortness of breath, Headache, Nausea

Additional Information

RTECS: BQ9200000

## **12. Ecological information**

12.1 Toxicity

No data available

12.2 Persistence and degradability

No data available

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

No data available

12.6 Other adverse effects

No data available

### 13. Disposal considerations

13.1 Waste treatment methods

Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging

Dispose of as unused product.

### 14. Transport Information Table

		<b>ADR/RID – European packaging certification</b>	<b>IMDG International Maritime Dangerous Goods Code</b>	<b>IATA – DGR International Air Travel Association – Dangerous Goods Regulations</b>
<b>14.1</b>	<b>UN Number</b>	1727	1727	1727
<b>14.2</b>	<b>UN Proper Shipping name</b>	AMMONIUM HYDROGENDIFLUORIDE, SOLID	AMMONIUM HYDROGENDIFLUORIDE, SOLID	Ammonium hydrogendifluoride, solid
<b>14.3</b>	<b>Transport Hazard Class</b>	8	8	8
<b>14.4</b>	<b>Packaging group</b>	II	II	II
<b>14.5</b>	<b>Environmental Hazards</b>	No	No	No
<b>14.6</b>	<b>Special precautions for user</b>	No data available.		

### 15. Regulatory information

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

National regulatory information

HSNO Approval Code: HSR003970

HSNO Group Standard Approval: HSR002596 - Laboratory Chemicals and Reagent Kits Group  
Standard 2006

Tracking Required: not required

Approved Handler Cert.: 6.1C

### 16. Disclaimer

The information above is believed to be accurate and represents the best information currently available to us. However, the information is not a guarantee expressed or implied, with respect to such information, and we assume no liability resulting from its use. Anyone using the chemical described here should ensure that he or she has the appropriate training and has the expertise and any equipment required for safe handling. If clarification or further information is required, please contact ECP Ltd or refer to the official handler of dangerous goods within your own company. The user should also make their own investigations to determine the suitability of the product for their

particular purposes. In no event shall the company 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 the company has been advised of the possibility of such damages.

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