

## Chemical Safety Data Sheet MSDS / SDS

## Ammonium hydrogen difluoride

Revision Date:2026-05-31 Revision Number:1

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

## Product identifier

Product name : Ammonium hydrogen difluoride  
CBnumber : CB0273686  
CAS : 1341-49-7  
EINECS Number : 215-676-4  
Synonyms : Ammonium Bifluoride, NH<sub>4</sub>HF<sub>2</sub>

## Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses : For R&D use only. Not for medicinal, household or other use.  
Uses advised against : none

## Company Identification

Company : Chemicalbook  
Address : Building 1, Huihuang International, Shangdi 10th Street, Haidian District, Beijing  
Telephone : 010-86108875

## SECTION 2: Hazards identification

## GHS Label elements, including precautionary statements

Symbol(GHS)



Signal word

Danger

## Precautionary statements

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P270 Do not eat, drink or smoke when using this product.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P303+P361+P353 IF ON SKIN (or hair): Remove/Take off Immediately all contaminated clothing. Rinse SKIN with water/shower.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continuerinsing.

## Hazard statements

H301 Toxic if swallowed

H314 Causes severe skin burns and eye damage

## SECTION 3: Composition/information on ingredients

### Substance

Product name	: Ammonium hydrogen difluoride
Synonyms	: Ammonium Bifluoride, NH <sub>4</sub> HF <sub>2</sub>
CAS	: 1341-49-7
EC number	: 215-676-4
MF	: F <sub>2</sub> H <sub>5</sub> N
MW	: 57.04

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## SECTION 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

### Self-Protection of the First Aider

Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

### Notes to Physician

Treat symptomatically.

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## SECTION 5: Firefighting measures

## Suitable Extinguishing Media

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

## Extinguishing media which must not be used for safety reasons

No information available.

## Specific Hazards Arising from the Chemical

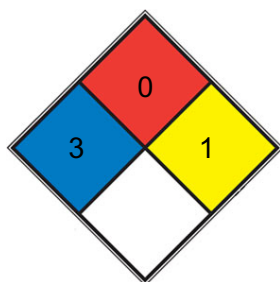
The product causes burns of eyes, skin and mucous membranes.

## 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.

## NFPA 704



**HEALTH 3** Short exposure could cause serious temporary or moderate residual injury (e.g. [liquid hydrogen](#), [sulfuric acid](#), [calcium hypochlorite](#), hexafluorosilicic acid)

**FIRE 0** Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand. Materials that will not burn in air when exposed to a temperature of 820 °C (1,500 °F) for a period of 5 minutes.(e.g. Carbon tetrachloride)

**REACT 1** Normally stable, but can become unstable at elevated temperatures and pressures (e.g. [propene](#))

**SPEC.**

**HAZ.**

## SECTION 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.

### Environmental Precautions

Should not be released into the environment.

### Methods for Containment and Clean Up

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

Refer to protective measures listed in Sections 8 and 13.

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## SECTION 7: Handling and storage

### Handling

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.

### Storage

Keep containers tightly closed in a dry, cool and well-ventilated place. Air sensitive. Corrosives area. Store under an inert atmosphere.

### Specific Use(s)

Use in laboratories

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## SECTION 8: Exposure controls/personal protection

### Control Parameters

Component	China	Taiwan	Thailand	Hong Kong
Ammonium bifluoride	-	TWA: 2.5 mg/m <sup>3</sup>	TWA: 2.5 mg/m <sup>3</sup>	-

Component	ACGIH TLV	OSHA PEL	NIOSH	The United Kingdom	European Union
Ammonium bifluoride	TWA: 2.5 mg/m <sup>3</sup>	(Vacated) TWA: 2.5 mg/m <sup>3</sup>	IDLH: 250 mg/m <sup>3</sup> REL = 2.5 mg/m <sup>3</sup> (TWA)	STEL: 7.5 mg/m <sup>3</sup> 15 min TWA: 2.5 mg/m <sup>3</sup> 8 hr	

### Legend

#### ACGIH

- American Conference of Governmental Industrial Hygienists

#### OSHA

- Occupational Safety and Health Administration

#### NIOSH

NIOSH - National Institute for Occupational Safety and Health

### Monitoring methods

BS EN 14042:2003 Title Identifier: Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents. MDHS14/3 General methods for sampling and gravimetric analysis of respirable and inhalable dust

### Exposure Controls

#### 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. Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation

systems, should be adopted to control hazardous materials at source.

## Personal protective equipment

### Eye Protection

Goggles (European standard - EN 166)

### Hand Protection

Protective gloves

Glove material	Breakthrough time	Glove thickness	EU standard	Glove comments
Natural rubber	See manufacturers	-	EN 374	(minimum requirement)
Nitrile rubber	recommendations			
Neoprene				
PVC				

Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves.

(Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task: Chemical compatibility, Dexterity, Operational conditions, User susceptibility, e.g.

sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.

Remove gloves with care avoiding skin contamination.

### Skin and body protection

Long sleeved clothing

### Respiratory Protection

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly

### Large scale/emergency use

Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced

Recommended Filter type: Particulates filter conforming to EN 143

### Small scale/Laboratory use

Use a NIOSH/MSHA or European Standard EN 149:2001 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Recommended half mask:- Particle filtering: EN149:2001

When RPE is used a face piece Fit Test should be conducted

### Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

### Environmental exposure controls

No information available.

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## SECTION 9: Physical and chemical properties

## Information on basic physicochemical properties

White

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### Physical State

Solid

### Odor

pungent

### Odor Threshold

No data available

### pH

3.5 5% aq. solution

### Melting Point/Range

125 °C / 257 °F

### Softening Point

No data available

### Boiling Point/Range

230 °C / 446 °F @ 760 mmHg

### Flash Point

No information available

Method - No information available

### Evaporation Rate

Not applicable Solid

### Flammability (solid,gas)

No information available

### Explosion Limits

No data available

### Vapor Pressure

1 hPa @ 20 °C

### Vapor Density

Not applicable Solid

### Specific Gravity / Density

1.50

### Bulk Density

1,5 g/cm<sup>3</sup>

#### **Water Solubility**

630 g/L (20°C)

#### **Solubility in other solvents**

630g/l

#### **Partition Coefficient (n-octanol/water)**

No data available

#### **Autoignition Temperature**

No data available

#### **Decomposition Temperature**

> 230°C

#### **Viscosity**

Not applicable Solid

#### **Explosive Properties**

No information available

#### **Oxidizing Properties**

No information available

#### **Molecular Formula**

H5 F2 N

#### **Molecular Weight**

57.04

#### **Colour**

White

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## SECTION 10: Stability and reactivity

#### **Stability**

Hygroscopic.

#### **Hazardous Reactions**

None under normal processing.

#### **Hazardous Polymerization**

Hazardous polymerization does not occur.

### **Conditions to Avoid**

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

### **Materials to avoid**

Strong acids. Strong bases.

### **Hazardous Decomposition Products**

Hydrogen fluoride. Ammonia.

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## **SECTION 11: Toxicological information**

### **Product Information**

#### **(a) acute toxicity;**

##### **Component**

LD50 Oral LD50 Dermal LC50 Inhalation

#### **(b) skin corrosion/irritation;**

Category 1 B

#### **(c) serious eye damage/irritation;**

Category 1

#### **(d) respiratory or skin sensitization;**

### **Respiratory**

No data available

### **Skin**

No data available

#### **(e) germ cell mutagenicity;**

No data available

#### **(f) carcinogenicity;**

No data available

There are no known carcinogenic chemicals in this product

#### **(g) reproductive toxicity;**

No data available

#### **(h) STOT-single exposure;**

No data available

**(i) STOT-repeated exposure;**

No data available

**Target Organs**

None known.

**(j) aspiration hazard;**

Not applicable

Solid

**Symptoms / effects,both acute and Ingestion causes severe swelling, severe damage to the delicate tissue and danger of**

**delayed**

perforation: Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated

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## SECTION 12: Ecological information

**Ecotoxicity effects**

Do not empty into drains. .

**Persistence and Degradability**

**Persistence**

Soluble in water, Persistence is unlikely, based on information available.

**Degradability**

Not relevant for inorganic substances.

**Bioaccumulative Potential**

Bioaccumulation is unlikely

**Mobility in soil**

The product is water soluble, and may spread in water systems Will likely be mobile in the environment due to its water solubility Highly mobile in soils

**Endocrine Disruptor Information**

This product does not contain any known or suspected endocrine disruptors

**Persistent Organic Pollutant**

This product does not contain any known or suspected substance

**Ozone Depletion Potential**

This product does not contain any known or suspected substance

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## SECTION 13: Disposal considerations

### **Waste from Residues/Unused Products**

Waste is classified as hazardous. Dispose of in accordance with the European Directives on waste and hazardous waste. Dispose of in accordance with local regulations.

### **Contaminated Packaging**

Dispose of this container to hazardous or special waste collection point.

### **Other Information**

Waste codes should be assigned by the user based on the application for which the product was used. Do not empty into drains. Do not flush to sewer. Large amounts will affect pH and harm aquatic organisms.

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## SECTION 14: Transport information

### **Road and Rail Transport**

#### **UN-No**

UN1727

#### **Proper Shipping Name**

AMMONIUM HYDROGENDIFLUORIDE, SOLID

#### **Hazard Class**

8

#### **Packing Group**

II

### **IMDG/IMO**

#### **UN-No**

UN1727

#### **Proper Shipping Name**

AMMONIUM HYDROGENDIFLUORIDE, SOLID

#### **Hazard Class**

8

#### **Packing Group**

II

### **IATA**

#### **UN-No**

UN1727

#### **Proper Shipping Name**

AMMONIUM HYDROGENDIFLUORIDE, SOLID

#### **Hazard Class**

**Packing Group**

II

**Special Precautions for User**

No special precautions required

**SECTION 15: Regulatory information****International Inventories**

China, X = listed, Australia, U.S.A. (TSCA), Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Australia (AICS), Korea (KECL), China (IECSC),

Japan (ENCS), Philippines (PICCS), Taiwan (TCSI), Japan (ISHL), New Zealand (NZIoC), Japan (ISHL).

Component	The Inventory of Hazardous Chemicals (2015 Edition)	List of dangerous goods GB 12268 - 2012	TCSI	IECSC	EINECS	TSCA	DSL	PICCS	ENCS	ISHL	AICS	KECL
Ammonium bifluoride	X	X	X	X	215-676-4	X	X	X	X	X	X	KE-01679

**National Regulations****SECTION 16: Other information****Prepared By**

Health, Safety and Environmental Department

**Revision Summary**

SDS sections updated.

**Training Advice**

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.

Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.

First aid for chemical exposure, including the use of eye wash and safety showers.

**Legend****CAS**

Chemical Abstracts Service

**TSCA**

United States Toxic Substances Control Act Section 8(b)

Inventory

**EINECS/ELINCS**

European Inventory of Existing Commercial Chemical  
Substances/EU List of Notified Chemical Substances

**DSL/NDSL**

Canadian Domestic Substances List/Non-Domestic  
Substances List

**PICCS**

Philippines Inventory of Chemicals and Chemical Substances

**ENCS**

Japanese Existing and New Chemical Substances

**IECSC**

Chinese Inventory of Existing Chemical Substances

**AICS**

Australian Inventory of Chemical Substances

**KECL**

Korean Existing and Evaluated Chemical Substances

**NZIoC**

New Zealand Inventory of Chemicals

**WEL**

Workplace Exposure Limit

**TWA**

Time Weighted Average

**ACGIH**

American Conference of Governmental Industrial Hygienists

**IARC**

International Agency for Research on Cancer

**DNEL**

Derived No Effect Level

**PNEC**

Predicted No Effect Concentration

**RPE**

Respiratory Protective Equipment

**LD50**

Lethal Dose 50%

**LC50**

Lethal Concentration 50%

**EC50**

Effective Concentration 50%

**NOEC**

No Observed Effect Concentration

**POW**

Partition coefficient Octanol:Water

**PBT**

Persistent, Bioaccumulative, Toxic

**vPvB**

very Persistent, very Bioaccumulative

**ICAO/IATA**

International Civil Aviation Organization/International Air

Transport Association

**IMO/IMDG**

International Maritime Organization/International Maritime

Dangerous Goods Code

**ADR**

European Agreement Concerning the International Carriage of

Dangerous Goods by Road

**MARPOL**

International Convention for the Prevention of Pollution from

Ships

**OECD**

Organisation for Economic Co-operation and Development

**ATE**

Acute Toxicity Estimate

**BCF**

Bioconcentration factor

**VOC**

(Volatile Organic Compound)

**Key literature references and sources for data**

<https://echa.europa.eu/information-on-chemicals>

Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

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