



Fisher Scientific

Part of Thermo Fisher Scientific

Material Safety Data Sheet

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Revision Number 1

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name	Ammonium hydrogen difluoride
Cat No.	A664-3, A664-500
Synonyms	Ammonium bifluoride
Recommended Use	Laboratory chemicals
Company Fisher Scientific One Reagent Lane Fair Lawn, NJ 07410 Tel: (201) 796-7100	Emergency Telephone Number CHEMTREC®, Inside the USA: 800-424-9300 CHEMTREC®, Outside the USA: 001-703-527-3887

2. HAZARDS IDENTIFICATION

DANGER!

Emergency Overview

Toxic if swallowed. Causes burns by all exposure routes. May cause skeletal effects and bone destruction. Hygroscopic.

Appearance White

Physical State Solid

odor pungent

Target Organs Respiratory system, Eyes, Skin, Gastrointestinal tract (GI), skeletal system

Potential Health Effects

Acute Effects

Principle Routes of Exposure

Eyes	Causes burns.
Skin	Causes burns. May be harmful in contact with skin.
Inhalation	Causes burns. May be harmful if inhaled.
Ingestion	Toxic if swallowed. Causes burns.

Chronic Effects May cause skeletal effects and bone destruction.

See Section 11 for additional Toxicological information.

Aggravated Medical Conditions No information available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Haz/Non-haz

Component	CAS-No	Weight %
Ammonium bifluoride	1341-49-7	>95

4. FIRST AID MEASURES

Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.
Skin Contact	Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.
Inhalation	Move to fresh air. If breathing is difficult, give oxygen. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with a respiratory medical device. Immediate medical attention is required.
Ingestion	Do not induce vomiting. Call a physician or Poison Control Center immediately.
Notes to Physician	Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Flash Point	No information available.
Method	No information available.
Autoignition Temperature	No information available.
Explosion Limits	
Upper	No data available
Lower	No data available
Suitable Extinguishing Media	Substance is nonflammable; use agent most appropriate to extinguish surrounding fire..
Unsuitable Extinguishing Media	No information available.
Hazardous Combustion Products	No information available.
Sensitivity to mechanical impact	No information available.
Sensitivity to static discharge	No information available.

Specific Hazards Arising from the Chemical

Corrosive Material. Thermal decomposition can lead to release of irritating gases and vapors.

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

NFPA Health 3 Flammability 0 Instability 0 Physical hazards N/A

6. ACCIDENTAL RELEASE MEASURES

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Personal Precautions	Use personal protective equipment. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Avoid dust formation. Do not get in eyes, on skin, or on clothing.
Environmental Precautions	Should not be released into the environment.
Methods for Containment and Clean Up	Sweep up or vacuum up spillage and collect in suitable container for disposal. Avoid dust formation.

7. HANDLING AND STORAGE

Handling	Use only under a chemical fume hood. Wear personal protective equipment. Avoid dust formation. Do not get in eyes, on skin, or on clothing. Do not breathe dust.
Storage	Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from moisture. Corrosives area.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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.
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Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH
Ammonium bifluoride	TWA: 2.5 mg/m ³	(Vacated) TWA: 2.5 mg/m ³	TWA: 2.5 mg/m ³

Component	Quebec	Mexico OEL (TWA)	Ontario TWAEV
Ammonium bifluoride	TWA: 2.5 mg/m ³		TWA: 2.5 mg/m ³

NIOSH IDLH: Immediately Dangerous to Life or Health

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.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Solid
Appearance	White
odor	pungent
Odor Threshold	No information available.
pH	3.5 5% aq. solution
Vapor Pressure	1 hPa @ 20 °C
Vapor Density	No information available.
Viscosity	No information available.
Boiling Point/Range	230°C / 446°F @ 760 mmHg
Melting Point/Range	125°C / 257°F
Decomposition temperature	> 230°C
Flash Point	No information available.

9. PHYSICAL AND CHEMICAL PROPERTIES

Evaporation Rate	No information available.
Specific Gravity	1.50
Solubility	Soluble in water
log Pow	No data available
Molecular Weight	57.04
Molecular Formula	H5 F2 N

10. STABILITY AND REACTIVITY

Stability	Hygroscopic.
Conditions to Avoid	Avoid dust formation. Incompatible products. Excess heat. Exposure to moisture.
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 INFORMATIONAcute ToxicityComponent Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Ammonium bifluoride	130 mg/kg (Rat)	Not listed	Not listed

Irritation	Causes burns by all exposure routes
Toxicologically Synergistic Products	No information available.
<u>Chronic Toxicity</u>	
Carcinogenicity	There are no known carcinogenic chemicals in this product
Sensitization	No information available.
Mutagenic Effects	No information available.
Reproductive Effects	No information available.
Developmental Effects	No information available.
Teratogenicity	No information available.

Other Adverse Effects See actual entry in RTECS for complete information.

Endocrine Disruptor Information No information available

12. ECOLOGICAL INFORMATION

Ecotoxicity

Do not empty into drains.

Persistence and Degradability No information available

Bioaccumulation/ Accumulation No information available

Mobility No information available

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 HYDROGENDIFLUORIDE, SOLID
Hazard Class	8
Packing Group	II

TDG

UN-No	UN1727
Proper Shipping Name	AMMONIUM HYDROGENDIFLUORIDE, SOLID
Hazard Class	8
Packing Group	II

IATA

UN-No	1727
Proper Shipping Name	AMMONIUM HYDROGENDIFLUORIDE, SOLID
Hazard Class	8
Packing Group	II

IMDG/IMO

UN-No	1727
Proper Shipping Name	AMMONIUM HYDROGENDIFLUORIDE, SOLID

14. TRANSPORT INFORMATION

Hazard Class 8
Packing Group II

15. REGULATORY INFORMATION

All of the components in the product are on the following Inventory lists:

International Inventories

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	CHINA	KECL
Ammonium bifluoride	X	X	-	215-676-4	-		X	X	X	X	X

Legend:

X - Listed

E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.

F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.

N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.

P - Indicates a commenced PMN substance

R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.

S - Indicates a substance that is identified in a proposed or final Significant New Use Rule

T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.

XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B)).

Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.

Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b) Not applicable

SARA 313

Component	CAS-No	Weight %	SARA 313 - Threshold Values %
Ammonium bifluoride	1341-49-7	>95	1.0

SARA 311/312 Hazardous Categorization

Acute Health Hazard	No
Chronic Health Hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Ammonium bifluoride	X	100 lb	-	-

Clean Air Act
Not applicable

OSHA
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)

Component	Hazardous Substances RQs	CERCLA EHS RQs
Ammonium bifluoride	100 lb	-

California Proposition 65
This product does not contain any Proposition 65 chemicals.

State Right-to-Know

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Ammonium bifluoride	X	X	X	-	X

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

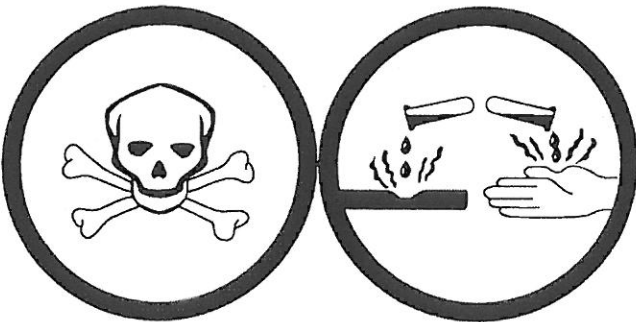
Mexico - Grade No information available

Canada

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

WHMIS Hazard Class

D1B Toxic materials
 E Corrosive material



16. OTHER INFORMATION

Prepared By Regulatory Affairs
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Revision Summary "****", and red text indicates revision

Disclaimer

The information provided on 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 guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as 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 material or in any process, unless specified in the text.

End of MSDS

REVIEWED

DATE:

30 March 2012
Chutterford