

# Material Safety Data Sheet

Ammonium Fluoride

ACC# 01230

## Section 1 - Chemical Product and Company Identification

**MSDS Name:** Ammonium Fluoride

**Catalog Numbers:** A665-100, A665-500

**Synonyms:** Neutral Ammonium Fluoride

**Company Identification:**

Fisher Scientific

1 Reagent Lane

Fair Lawn, NJ 07410

**For information, call:** 201-796-7100

**Emergency Number:** 201-796-7100

**For CHEMTREC assistance, call:** 800-424-9300

**For International CHEMTREC assistance, call:** 703-527-3887

## Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
12125-01-8	Ammonium fluoride	100.0	235-185-9

## Section 3 - Hazards Identification

### EMERGENCY OVERVIEW

Appearance: white solid.

**Danger!** Causes eye and skin burns. May cause severe respiratory tract irritation with possible burns. May cause severe digestive tract irritation with possible burns. May cause lung damage. May cause cyanosis (bluish discoloration of skin due to deficient oxygenation of the blood). Hygroscopic (absorbs moisture from the air).

**Target Organs:** Respiratory system, skeletal structures, eyes, skin.

#### Potential Health Effects

**Eye:** Causes eye burns.

**Skin:** Causes skin burns. May cause deep, penetrating ulcers of the skin. Penetration may continue for several days.

**Ingestion:** May cause severe and permanent damage to the digestive tract. May cause vascular collapse and damage. Causes severe digestive tract burns with abdominal pain, vomiting, and possible death. May cause hemorrhaging of the digestive tract.

**Inhalation:** Causes delayed lung injury. Causes chemical burns to the respiratory tract. May cause coughing, choking, chills, fever, tightness in the chest, and cyanosis (bluish discoloration of skin due to deficient oxygenation of the blood).

**Chronic:** Chronic inhalation and ingestion may cause chronic fluoride poisoning (fluorosis) characterized by weight loss, weakness, anemia, brittle bones, and stiff joints. Skeletal effects may include bone brittleness, joint stiffness, teeth discoloration, tendon calcification, and osteosclerosis.

## Section 4 - First Aid Measures

**Eyes:** Get medical aid immediately. Do NOT allow victim to rub eyes or keep eyes closed. Extensive irrigation with water is required (at least 30 minutes).

**Skin:** Get medical aid immediately. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Discard contaminated clothing in a manner which limits further exposure. Destroy contaminated shoes.

**Ingestion:** Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.

**Inhalation:** Get medical aid immediately. Remove from exposure and move to fresh air immediately. If breathing is difficult, give oxygen. Do NOT use mouth-to-mouth resuscitation.

**Notes to Physician:** Treat symptomatically and supportively.

## Section 5 - Fire Fighting Measures

**General Information:** As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Wear appropriate protective clothing to prevent contact with skin and eyes. Wear a self-contained breathing apparatus (SCBA) to prevent contact with thermal decomposition products. Substance is noncombustible. Containers may explode in the heat of a fire. Vapors may be heavier than air. They can spread along the ground and collect in low or confined areas. Contact with metals may evolve flammable hydrogen gas.

**Extinguishing Media:** Substance is noncombustible; use agent most appropriate to extinguish surrounding fire. Do NOT get water inside containers. For small fires, use dry chemical, carbon dioxide, or water spray. For large fires, use dry chemical, carbon dioxide, alcohol-resistant foam, or water spray. Cool containers with flooding quantities of water until well after fire is out.

**Flash Point:** Not applicable.

**Autoignition Temperature:** Not applicable.

**Explosion Limits, Lower:** Not available.

**Upper:** Not available.

**NFPA Rating:** (estimated) Health: 3; Flammability: 0; Instability: 1

## Section 6 - Accidental Release Measures

**General Information:** Use proper personal protective equipment as indicated in Section 8.

**Spills/Leaks:** Vacuum or sweep up material and place into a suitable disposal container. Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Avoid generating dusty conditions. Provide ventilation. Do not get water inside containers.

## Section 7 - Handling and Storage

**Handling:** Wash thoroughly after handling. Use with adequate ventilation. Do not get in eyes, on skin, or on clothing. Keep container tightly closed. Do not ingest or inhale. Use with adequate ventilation. Discard contaminated shoes.

**Storage:** Keep container closed when not in use. Store in a tightly closed container. Keep from contact with oxidizing materials. Store in a cool, dry, well-ventilated area away from incompatible substances. Keep away from water. Keep away from acids. Do not store in metal or glass containers. Keep away from strong bases.

## Section 8 - Exposure Controls, Personal Protection

**Engineering Controls:** Local exhaust ventilation may be necessary to control any air contaminants to within their TLVs during the use of this product. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

### Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Ammonium fluoride	2.5 mg/m <sup>3</sup> TWA (as F) (listed under Fluorides).	2.5 mg/m <sup>3</sup> TWA (inorganic solids, as F) (listed under Fluorides, inorganic).	2.5 mg/m <sup>3</sup> TWA (as dust) (listed under Fluorides).2.5 mg/m <sup>3</sup> TWA (as F) (listed under Fluorides).

**OSHA Vacated PELs:** Ammonium fluoride: No OSHA Vacated PELs are listed for this chemical.

### Personal Protective Equipment

**Eyes:** 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:** Wear appropriate protective gloves to prevent skin exposure.

**Clothing:** Wear appropriate protective clothing to minimize contact with skin.

**Respirators:** A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use. 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.

## Section 9 - Physical and Chemical Properties

**Physical State:** Solid

**Appearance:** white

**Odor:** odorless

**pH:** Acidic

**Vapor Pressure:** Negligible.

**Vapor Density:** 1.3

**Evaporation Rate:** Negligible.

**Viscosity:** Not available.

**Boiling Point:** Not available.

**Freezing/Melting Point:** Decomposes.

**Decomposition Temperature:** 100 deg C

**Solubility:** Soluble in water.

**Specific Gravity/Density:** 1.009

**Molecular Formula:** NH<sub>4</sub>F

**Molecular Weight:** 37.04

## Section 10 - Stability and Reactivity

**Chemical Stability:** Hygroscopic: absorbs moisture or water from the air. Dissolves and forms dilute solution of Hydrofluoric acid.

**Conditions to Avoid:** Dust generation, excess heat.

**Incompatibilities with Other Materials:** Metals, strong acids, glass, caustics (e.g. ammonia,

ammonium hydroxide, calcium hydroxide, potassium hydroxide, sodium hydroxide).

**Hazardous Decomposition Products:** Oxides of nitrogen, hydrogen fluoride gas, ammonia and/or derivatives.

**Hazardous Polymerization:** Has not been reported.

## Section 11 - Toxicological Information

**RTECS#:**

**CAS#** 12125-01-8: BQ6300000

**LD50/LC50:**

Not available.

**Carcinogenicity:**

CAS# 12125-01-8: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

**Epidemiology:** No information available.

**Teratogenicity:** No information available.

**Reproductive Effects:** No information available.

**Mutagenicity:** No information available.

**Neurotoxicity:** No information available.

**Other Studies:**

## Section 12 - Ecological Information

No information available.

## Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3.

Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

**RCRA P-Series:** None listed.

**RCRA U-Series:** None listed.

## Section 14 - Transport Information

	US DOT	Canada TDG
<b>Shipping Name:</b>	AMMONIUM FLUORIDE	No information available.
<b>Hazard Class:</b>	6.1	
<b>UN Number:</b>	UN2505	
<b>Packing Group:</b>	III	

## US FEDERAL

### TSCA

CAS# 12125-01-8 is listed on the TSCA inventory.

### Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

### Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

### Section 12b

None of the chemicals are listed under TSCA Section 12b.

### TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

### CERCLA Hazardous Substances and corresponding RQs

CAS# 12125-01-8: 100 lb final RQ; 45.4 kg final RQ

### SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

### SARA Codes

CAS # 12125-01-8: immediate, delayed.

### Section 313

No chemicals are reportable under Section 313.

### Clean Air Act:

This material does not contain any hazardous air pollutants.

This material does not contain any Class 1 Ozone depletors.

This material does not contain any Class 2 Ozone depletors.

### Clean Water Act:

CAS# 12125-01-8 is listed as a Hazardous Substance under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

### OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

### STATE

CAS# 12125-01-8 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, (listed as Fluorides), Minnesota, (listed as Fluorides, inorganic), Massachusetts.

### California Prop 65

California No Significant Risk Level: None of the chemicals in this product are listed.

## European/International Regulations

### European Labeling in Accordance with EC Directives

#### Hazard Symbols:

T

#### Risk Phrases:

R 23/24/25 Toxic by inhalation, in contact with skin and if swallowed.

#### Safety Phrases:

S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

### WGK (Water Danger/Protection)

CAS# 12125-01-8: 1

### Canada - DSL/NDSL

CAS# 12125-01-8 is listed on Canada's DSL List.

**Canada - WHMIS**

This product has a WHMIS classification of D1B, D2B.

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

**Canadian Ingredient Disclosure List**

CAS# 12125-01-8 (listed as Fluorides, inorganic) is listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information
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**MSDS Creation Date:** 6/15/1999

**Revision #5 Date:** 4/27/2007

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