

# SAFETY DATA SHEET

## 1. Identification

**Product identifier:** AMMONIUM FLUORIDE

**Other means of identification**

**Product No.:** 0698

**Recommended use and restriction on use**

**Recommended use:** Not available.

**Restrictions on use:** Not known.

**Manufacturer/Importer/Supplier/Distributor information**

**Manufacturer**

**Company Name:** Avantor Performance Materials, Inc.  
**Address:** 3477 Corporate Parkway, Suite 200  
Center Valley, PA 18034

**Telephone:** Customer Service: 855-282-6867

**Fax:**  
**Contact Person:** Environmental Health & Safety  
**e-mail:** info@avantormaterials.com

**Emergency telephone number:**

24 Hour Emergency: 908-859-2151

Chemtrec: 800-424-9300

## 2. Hazard(s) identification

**Hazard classification**

**Health hazards**

Acute toxicity (Oral)	Category 3
Acute toxicity (Dermal)	Category 3
Acute toxicity (Inhalation - vapor)	Category 3
Specific target organ toxicity - single exposure	Category 3

**Label elements**

**Hazard symbol:**



**Signal word:** Danger

**Hazard statement:** Toxic in contact with skin.  
Toxic if inhaled.  
Toxic if swallowed.  
May cause respiratory irritation.  
May cause drowsiness or dizziness.

**Precautionary statement**

**Prevention:** Wear protective gloves/protective clothing/eye protection/face protection. Avoid breathing dust/fume/gas/mist/vapors/spray. Use only outdoors or in a well-ventilated area. Wash hands thoroughly after handling.

**Response:** IF ON SKIN: Wash with plenty of soap and water. Call a POISON CENTER or doctor/physician if you feel unwell. Take off immediately all contaminated clothing and wash it before reuse. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/physician. Rinse mouth.

**Other hazards which do not result in GHS classification:** None.

### 3. Composition/information on ingredients

#### Substances

Chemical identity	Common name and synonyms	CAS number	Content in percent (%)*
AMMONIUM FLUORIDE		12125-01-8	100%

\* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

### 4. First-aid measures

**General information:** Get medical advice/attention if you feel unwell. Show this safety data sheet to the doctor in attendance.

**Ingestion:** Rinse mouth. Call a physician or poison control center immediately. Do not induce vomiting without advice from poison control center. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

**Inhalation:** Move to fresh air. Call a POISON CENTER or doctor/physician.

**Skin contact:** Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash contaminated clothing before reuse. Call a POISON CENTER or doctor/physician if you feel unwell.

**Eye contact:** Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention immediately.

#### Most important symptoms/effects, acute and delayed

**Symptoms:** Irritating to eyes, respiratory system and skin.

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

**Treatment:** Treat symptomatically. Symptoms may be delayed.

### 5. Fire-fighting measures

**General fire hazards:** In case of fire and/or explosion do not breathe fumes.

### Suitable (and unsuitable) extinguishing media

**Suitable extinguishing media:** Use fire-extinguishing media appropriate for surrounding materials.

**Unsuitable extinguishing media:** None known.

**Specific hazards arising from the chemical:** Contact with metals may evolve flammable hydrogen gas. Fire may produce irritating, corrosive and/or toxic gases.

### Special protective equipment and precautions for firefighters

**Special fire fighting procedures:** Move containers from fire area if you can do so without risk. Use water spray to keep fire-exposed containers cool. Cool containers exposed to flames with water until well after the fire is out.

**Special protective equipment for fire-fighters:** Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

## 6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures:** Keep unauthorized personnel away. Use personal protective equipment. See Section 8 of the MSDS for Personal Protective Equipment. Ventilate closed spaces before entering them. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

**Methods and material for containment and cleaning up:** Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Clean surface thoroughly to remove residual contamination. Dike far ahead of larger spill for later recovery and disposal.

**Notification Procedures:** Dike for later disposal. Prevent entry into waterways, sewer, basements or confined areas. Stop the flow of material, if this is without risk. Inform authorities if large amounts are involved.

**Environmental precautions:** Do not contaminate water sources or sewer. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

## 7. Handling and storage

**Precautions for safe handling:** Wash hands thoroughly after handling. Do not taste or swallow. Avoid contact with skin. Avoid contact with eyes. Do not breathe dust/fume/mist. Do not eat, drink or smoke when using the product. Use only with adequate ventilation. Wash hands after handling. See Section 8 of the MSDS for Personal Protective Equipment.

**Conditions for safe storage, including any incompatibilities:** Keep container tightly closed. Store in a well-ventilated place. Keep away from acids. Do not store in metal containers.

## 8. Exposure controls/personal protection

### Control parameters

#### Occupational exposure limits

Chemical identity	Type	Exposure Limit values	Source
AMMONIUM FLUORIDE - as F	TWA	2.5 mg/m <sup>3</sup>	US. ACGIH Threshold Limit Values (2011)
	REL	2.5 mg/m <sup>3</sup>	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	PEL	2.5 mg/m <sup>3</sup>	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
AMMONIUM FLUORIDE - Dust.	TWA	2.5 mg/m <sup>3</sup>	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	TWA	2.5 mg/m <sup>3</sup>	US. OSHA Table Z-2 (29 CFR 1910.1000) (02 2006)

#### Biological limit values

Chemical identity	Exposure Limit values	Source
AMMONIUM FLUORIDE (fluorides: Sampling time: Prior to shift.)	2 mg/l (Urine)	ACGIH BEL (02 2012)
AMMONIUM FLUORIDE (fluorides: Sampling time: End of shift.)	3 mg/l (Urine)	ACGIH BEL (02 2012)

**Appropriate engineering controls** No data available.

### Individual protection measures, such as personal protective equipment

**General information:** Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. An eye wash and safety shower must be available in the immediate work area.

**Eye/face protection:** Wear safety glasses with side shields (or goggles) and a face shield.

#### Skin protection

**Hand protection:** Chemical resistant gloves

**Other:** Wear suitable protective clothing.

**Respiratory protection:** In case of inadequate ventilation use suitable respirator.

**Hygiene measures:** Provide eyewash station and safety shower. Observe good industrial hygiene practices. Wash contaminated clothing before reuse. Avoid contact with skin. Wash hands before breaks and immediately after handling the product. Do not eat, drink or smoke when using the product. Wash hands after handling. Avoid contact with eyes.

## 9. Physical and chemical properties

### Appearance

**Physical state:** Solid  
**Form:** Crystals  
**Color:** Colorless  
**Odor:** Odorless  
**Odor threshold:** No data available.

<b>pH:</b>	No data available.
<b>Melting point/freezing point:</b>	Sublimes upon heating.
<b>Initial boiling point and boiling range:</b>	Not applicable
<b>Flash Point:</b>	Not applicable
<b>Evaporation rate:</b>	No data available.
<b>Flammability (solid, gas):</b>	No data available.
<b>Upper/lower limit on flammability or explosive limits</b>	
<b>Flammability limit - upper (%):</b>	
<b>Flammability limit - lower (%):</b>	
<b>Explosive limit - upper (%):</b>	No data available.
<b>Explosive limit - lower (%):</b>	No data available.
<b>Vapor pressure:</b>	Estimated < 0.01 kPa (25 °C)
<b>Vapor density:</b>	No data available.
<b>Relative density:</b>	1.01 (20 °C)
<b>Solubility(ies)</b>	
<b>Solubility in water:</b>	1,000 g/l (0 °C)
<b>Solubility (other):</b>	No data available.
<b>Partition coefficient (n-octanol/water):</b>	No data available.
<b>Auto-ignition temperature:</b>	No data available.
<b>Decomposition temperature:</b>	No data available.
<b>Viscosity:</b>	No data available.
<b>Other information</b>	
<b>Molecular weight:</b>	37.04 g/mol (FH4N)

## 10. Stability and reactivity

<b>Reactivity:</b>	No dangerous reaction known under conditions of normal use.
<b>Chemical stability:</b>	Material is stable under normal conditions.
<b>Possibility of hazardous reactions:</b>	Hazardous polymerization does not occur.
<b>Conditions to avoid:</b>	Heat. Moisture. Contact with incompatible materials.
<b>Incompatible materials:</b>	Strong oxidizing agents. Acids.
<b>Hazardous decomposition products:</b>	Nitrogen Oxides Hydrogen fluoride.

## 11. Toxicological information

### Information on likely routes of exposure

<b>Ingestion:</b>	Toxic if swallowed.
<b>Inhalation:</b>	Toxic if inhaled. Irritating to respiratory system.
<b>Skin contact:</b>	Toxic in contact with skin. Causes skin irritation.
<b>Eye contact:</b>	Causes eye irritation.

### Information on toxicological effects

#### Acute toxicity (list all possible routes of exposure)

<b>Oral Product:</b>	No data recorded.
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**Dermal**

**Product:** No data available.

**Inhalation**

**Product:** No data available.

**Repeated dose toxicity**

**Product:** No data available.

**Skin corrosion/irritation**

**Product:** Irritating to skin.

**Serious eye damage/eye irritation**

**Product:** Irritating to eyes.

**Respiratory or skin sensitization**

**Product:** Not a skin sensitizer.

**Carcinogenicity**

**Product:** This substance has no evidence of carcinogenic properties.

**IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:**

No carcinogenic components identified

**US. National Toxicology Program (NTP) Report on Carcinogens:**

No carcinogenic components identified

**US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):**

No carcinogenic components identified

**Germ cell mutagenicity**

**In vitro**

**Product:** No mutagenic components identified

**In vivo**

**Product:** No mutagenic components identified

**Reproductive toxicity**

**Product:** No components toxic to reproduction

**Specific target organ toxicity - single exposure**

**Product:** Respiratory tract irritation., Eyes., Bones, Teeth

**Specific target organ toxicity - repeated exposure**

**Product:** None known.

**Aspiration hazard**

**Product:** Not classified

**Other effects:** None known.

<b>12. Ecological information</b>
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**Ecotoxicity:**

**Acute hazards to the aquatic environment:**

**Fish**

**Product:** No data available.

**Aquatic invertebrates**

**Product:** No data available.

**Chronic hazards to the aquatic environment:**

**Fish**

**Product:** No data available.

**Aquatic invertebrates**

**Product:** No data available.

**Toxicity to Aquatic Plants**

**Product:** No data available.

**Persistence and degradability**

**Biodegradation**

**Product:** There are no data on the degradability of this product.

**BOD/COD ratio**

**Product:** No data available.

**Bioaccumulative potential**

**Bioconcentration factor (BCF)**

**Product:** No data available on bioaccumulation.

**Partition coefficient n-octanol / water (log Kow)**

**Product:** No data available.

**Mobility in soil:**

The product is water soluble and may spread in water systems.

**Other adverse effects:**

No data on possible environmental effects have been found.

<b>13. Disposal considerations</b>
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**Disposal instructions:**

Discharge, treatment, or disposal may be subject to national, state, or local laws. Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

**Contaminated packaging:**

Since emptied containers retain product residue, follow label warnings even after container is emptied.

<b>14. Transport information</b>
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**DOT**

UN number:	UN 2505
UN proper shipping name:	Ammonium fluoride
Transport hazard class(es)	
Class(es):	6.1
Label(s):	6.1
Packing group:	III
Marine Pollutant:	No

**IMDG**

UN number: UN 2505  
 UN proper shipping name: AMMONIUM FLUORIDE  
 Transport hazard class(es)  
   Class(es): 6.1  
   Label(s): 6.1  
   EmS No.: F-A, S-A  
 Packing group: III  
 Marine Pollutant: No

**IATA**

UN number: UN 2505  
 Proper Shipping Name: Ammonium fluoride  
 Transport hazard class(es):  
   Class(es): 6.1  
   Label(s): 6.1  
 Marine Pollutant: No  
 Packing group: III

**15. Regulatory information**

**US federal regulations**

**TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**  
**US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)**  
 None present or none present in regulated quantities.

**CERCLA Hazardous Substance List (40 CFR 302.4):**  
 AMMONIUM FLUORIDE Reportable quantity: 100 lbs.

**Superfund amendments and reauthorization act of 1986 (SARA)**

**Hazard categories**

Acute (Immediate)  Chronic (Delayed)  Fire  Reactive  Pressure Generating

**SARA 302 Extremely hazardous substance**  
 None present or none present in regulated quantities.

**SARA 304 Emergency release notification**

Chemical identity	RQ
AMMONIUM FLUORIDE	100 lbs.

**SARA 311/312 Hazardous chemical**

Chemical identity	Threshold Planning Quantity
AMMONIUM FLUORIDE	500 lbs

**SARA 313 (TRI reporting)**

Chemical identity	Reporting threshold for other users	Reporting threshold for manufacturing and processing
AMMONIUM FLUORIDE	10000 lbs	25000 lbs.

**Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)**  
 AMMONIUM FLUORIDE Reportable quantity: 100 lbs.

**Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):**  
 None present or none present in regulated quantities.

## US state regulations

### US. California Proposition 65

No ingredient regulated by CA Prop 65 present.

### US. New Jersey Worker and Community Right-to-Know Act

AMMONIUM FLUORIDE Listed

### US. Massachusetts RTK - Substance List

AMMONIUM FLUORIDE Listed

### US. Pennsylvania RTK - Hazardous Substances

AMMONIUM FLUORIDE Listed

### US. Rhode Island RTK

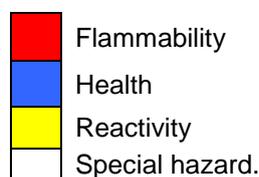
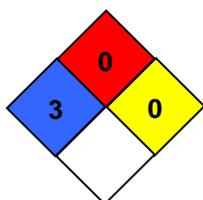
AMMONIUM FLUORIDE Listed

## Inventory Status:

Australia AICS:	On or in compliance with the inventory
Canada DSL Inventory List:	On or in compliance with the inventory
EINECS, ELINCS or NLP:	On or in compliance with the inventory
Japan (ENCS) List:	On or in compliance with the inventory
China Inv. Existing Chemical Substances:	Not in compliance with the inventory.
Korea Existing Chemicals Inv. (KECI):	On or in compliance with the inventory
Canada NDSL Inventory:	Not in compliance with the inventory.
Philippines PICCS:	On or in compliance with the inventory
US TSCA Inventory:	On or in compliance with the inventory
New Zealand Inventory of Chemicals:	On or in compliance with the inventory
Japan ISHL Listing:	On or in compliance with the inventory
Japan Pharmacopoeia Listing:	Not in compliance with the inventory.

## 16. Other information, including date of preparation or last revision

## NFPA Hazard ID



Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe

<b>Issue date:</b>	07-10-2014
<b>Revision date:</b>	No data available.
<b>Version #:</b>	1.0
<b>Further information:</b>	No data available.

**Disclaimer:**

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