

SAFETY DATA SHEET

Preparation Date: 10/3/2016

Revision Date: Not Applicable

Revision Number: Not Applicable

1. IDENTIFICATION

Product identifier

Product code: A1180
Product Name: AMMONIUM FLUOBORATE, CRYSTAL, TECHNICAL

Other means of identification

Synonyms: Ammonium borofluoride
 Borate(1-), tetrafluoro-, ammonium
 Ammonium fluoroborate
 Ammonium tetrafluoroborate
 Ammonium tetrafluoroborate(1-)
CAS #: 13826-83-0
RTECS # BQ6100000
CI#: Not available

Recommended use of the chemical and restrictions on use

Recommended use: For manufacturing or laboratory use only.
Uses advised against No information available

Supplier: Spectrum Chemical Mfg. Corp
 14422 South San Pedro St.
 Gardena, CA 90248
 (310) 516-8000.

Order Online At: <https://www.spectrumchemical.com>

Emergency telephone number Chemtrec 1-800-424-9300

Contact Person: Martin LaBenz (West Coast)

Contact Person: Ibad Tirmiz (East Coast)

2. HAZARDS IDENTIFICATION

Classification

This chemical is considered hazardous according to the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Considered a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Skin corrosion/irritation	Category 1 Sub-category B
Serious eye damage/eye irritation	Category 1
Specific target organ toxicity (single exposure)	Category 3
Corrosive to metals	Category 1

Label elements

Danger

Hazard statements

Causes severe skin burns and eye damage

May cause respiratory irritation
May be corrosive to metals



Hazards not otherwise classified (HNOC)

Not Applicable

Other hazards

Not available

Precautionary Statements - Prevention

Do not breathe dust/fume/gas/mist/vapors/spray
Wash face, hands and any exposed skin thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection
Use only outdoors or in a well-ventilated area
Keep only in original container
Absorb spillage to prevent material damage.

Precautionary Statements - Response

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
Wash contaminated clothing before reuse
IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor/physician. Call a POISON CENTER or doctor/physician if you feel unwell.
IF SWALLOWED: Rinse mouth. DO NOT induce vomiting

Precautionary Statements - Storage

Store locked up
Store in a well-ventilated place. Keep container tightly closed
Store in corrosive resistant/ .? container with a resistant inner liner

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS-No.	Weight %
Ammonium Fluoborate	13826-83-0	100

4. FIRST AID MEASURES

First aid measures

Product code: A1180

Product name: AMMONIUM
FLUOBORATE, CRYSTAL,
TECHNICAL

2 / 12

General Advice: National Capital Poison Center in the United States can provide assistance if you have a poison emergency and need to talk to a poison specialist. Call 1-800-222-1222. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves. First aider needs to protect himself.

Skin Contact: Wash off immediately with soap and plenty of water. Continue flushing with plenty of water for at least 15 minutes. Remove all contaminated clothes and shoes. Immediate medical attention is required. Call a physician or Poison Control Centre immediately.

Eye Contact: Flush eyes with water for 15 minutes. Immediate medical attention is required. Call a physician immediately.

Inhalation: Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. **WARNING!** It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled or ingested material is toxic, infectious or corrosive. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce 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 without medical advice. Never give anything by mouth to an unconscious person. Immediate medical attention is required. Call a physician or Poison Control Center immediately.

Most important symptoms and effects, both acute and delayed

Symptoms Severe skin and eye irritation or burns. Irritating to respiratory system. Burning sensation in the mouth and stomach. Can burn mouth, throat, and stomach. May cause perforation of the digestive tract.

Indication of any immediate medical attention and special treatment needed

Notes to Physician: Treat symptomatically.

Protection of first-aiders

First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste.

5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media: Dry chemical. Carbon dioxide (CO₂). Water spray, mist, or foam.

Unsuitable Extinguishing Media: No information available.

Specific hazards arising from the chemical

Hazardous Combustion Products: Nitrogen Oxides. Ammonia. Boron oxides. Hydrogen fluoride.

Specific hazards: No information available.

Special Protective Actions for Firefighters

Specific Methods: No information available.

Special Protective Equipment for Firefighters: As in any fire, wear self-contained breathing apparatus

pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions: Ensure adequate ventilation. Remove all sources of ignition. Keep people away from and upwind of spill/leak. Avoid contact with skin, eyes and clothing. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Use personal protective equipment.

Environmental precautions Prevent further leakage or spillage if safe to do so. Prevent entry into waterways, sewers, basements or confined areas. Prevent product from entering drains.

Methods and material for containment and cleaning up

Methods for containment Stop leak if you can do it without risk. Cover with plastic sheet to prevent spreading.

Methods for cleaning up Sweep up and shovel into suitable containers for disposal. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Precautions for safe handling

Technical Measures/Precautions:

Provide sufficient air exchange and/or exhaust in work rooms. Avoid dust formation. Keep away from incompatible materials.

Safe Handling Advice

Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Do not ingest. Keep away from sources of ignition - no smoking. Do not breathe dust. Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Technical Measures/Storage Conditions:

Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. Moisture sensitive. Store away from incompatible materials. Store in a segregated and approved area.

Incompatible Materials:

Strong oxidizing agents
Strong acids
Strong bases
Metals

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

National occupational exposure limits

United States

Components	CAS-No.	OSHA	NIOSH	ACGIH	AIHA WHEEL
Ammonium Fluoborate	13826-83-0	None	None	None	None

Product code: A1180

Product name: AMMONIUM
FLUOBORATE, CRYSTAL,
TECHNICAL

4 / 12

Canada

Components	CAS-No.	Canada - Alberta	Canada - British Columbia	Canada - Ontario	Canada - Quebec
Ammonium Fluoborate	13826-83-0	None	None	None	None

Australia and Mexico

Components	CAS-No.	Australia	Mexico
Ammonium Fluoborate	13826-83-0	None	None

Appropriate engineering controls

Engineering measures to reduce exposure:

Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Individual protection measures, such as personal protective equipment

Personal Protective Equipment

Eye protection: Goggles or Face-shield

Skin and body protection: Gloves. Long sleeved clothing. Chemical resistant apron.

Respiratory protection: Effective dust mask. or. Wear respirator with dust filter. Use a dust respirator under conditions where exposure to the substance is apparent (e.g. generation of high concentration of dust (dust clouds) , inadequate ventilation, development of respiratory tract irritation), and engineering controls are not feasible. Be sure to use an approved/certified respirator or equivalent.

Hygiene measures: Avoid contact with skin, eyes and clothing. When using, do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:
Solid

Appearance:
Crystalline.

Color:
Colorless.

Odor:
Odorless.

Taste
No information available.

Formula:
NH₄BF₄

Molecular/Formula weight:
104.84

Flammability:
No information available

Flashpoint (°C/°F):
No information available.

Flash Point Tested according to:
Not available

Autoignition Temperature (°C/°F):
No information available

Lower Explosion Limit (%):
No information available

Upper Explosion Limit (%):
No information available

Melting point/range(°C/°F):
230°C (446°F)

Decomposition temperature(°C/°F):
No information available

Boiling point/range(°C/°F):
No information available

Bulk density:
No information available

Density (g/cm³):
1.871

Product code: A1180

Product name: AMMONIUM
FLUOBORATE, CRYSTAL,
TECHNICAL

5 / 12

Specific gravity:
No information available

pH:
3.5 at 5 g/l at 20°C (68°F)

Vapor pressure @ 20°C (kPa):
No information available

Evaporation rate:
No information available

Vapor density:
No information available

VOC content (g/L):
No information available

Odor threshold (ppm):
No information available

**Partition coefficient
(n-octanol/water):**
No information available

Viscosity:
No information available

Miscibility:
No information available

Solubility:
Easily soluble in water
Soluble in cold water
Soluble in ammonium hydroxide

10. STABILITY AND REACTIVITY

Reactivity

Reactive with strong oxidizing agents

Chemical stability

Stability: Moisture Sensitive. Stable under recommended storage conditions.

Possibility of Hazardous Reactions: Hazardous polymerization does not occur

Conditions to avoid: Exposure to moisture. Heat. Avoid dust formation. Incompatible materials.

Incompatible Materials:
Strong oxidizing agents
Strong acids
Strong bases
Metals

Hazardous decomposition products: Nitrogen oxides (NO_x). Boron oxides. Hydrogen fluoride gas.

Other Information

Corrosivity: Corrosive in presence of glass

Special Remarks on Corrosivity: No information available

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Principal Routes of Exposure:
Skin. Eyes. Ingestion. Inhalation.

Acute Toxicity

Component Information

Ammonium Fluoborate

CAS-No. 13826-83-0

LD50/oral/rat = No information available

LD50/oral/mouse = No information available

Product code: A1180

Product name: AMMONIUM
FLUOBORATE, CRYSTAL,
TECHNICAL

6 / 12

LD50/dermal/rabbit = No information available
LD50/dermal/rat = No information available
LC50/inhalation/rat = No information available
LC50/inhalation/mouse = No information available
Other LD50 or LC50 information = No information available

Product Information

LD50/oral/rat =
VALUE- Acute Tox Oral = No information available

LD50/oral/mouse =
Value - Acute Tox Oral = No information available

LD50/dermal/rabbit
VALUE-Acute Tox Dermal = No information available

LD50/dermal/rat
VALUE -Acute Tox Dermal = No information available

LC50/inhalation/rat
VALUE-Vapor = No information available
VALUE-Gas = No information available
VALUE-Dust/Mist = No information available

LC50/Inhalation/mouse
VALUE-Vapor = No information available
VALUE - Gas = No information available
VALUE - Dust/Mist = No information available

Symptoms

Skin Contact:	Corrosive. Causes severe irritation and burns. Can cause burning pain, inflammation and blisters.
Eye Contact:	Causes severe eye irritation and possible burns. Corrosive to the eyes and may cause severe damage including blindness. Can cause severe injury.
Inhalation	Causes respiratory tract and mucous membrane irritation. May cause chemical burns to the respiratory tract.
Ingestion	Causes digestive or gastrointestinal tract burns. May cause perforation of the digestive tract. Corrosive to the mouth, throat, and stomach. Symptoms may include a burning sensation in the mouth, throat, and stomach. Ingestion may cause nausea, vomiting.
Aspiration hazard	No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Chronic Toxicity	No information available.
Sensitization:	No information available.
Mutagenic Effects:	No information available

Carcinogenic effects: Not considered carcinogenic.

Components	CAS-No.	IARC	ACGIH - Carcinogens	NTP	OSHA HCS - Carcinogens	Australia - Notifiable Carcinogenic Substances	Australia - Prohibited Carcinogenic Substances
Ammonium Fluoborate	13826-83-0	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed

ACGIH (American Conference of Governmental Industrial Hygienists)

IARC (International Agency for Research on Cancer)

NTP (National Toxicology Program)

OSHA (Occupational Safety and Health Administration of the US Department of Labor)

Reproductive toxicity No data is available

Reproductive Effects: No information available

Developmental Effects: No information available

Teratogenic Effects: No information available

Specific Target Organ Toxicity

STOT - single exposure Respiratory system.

STOT - repeated exposure No information available.

Target Organs: No information available.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity effects: No data available.

Persistence and degradability: No information available

Bioaccumulative potential: No information available.

Mobility: No information available.

13. DISPOSAL CONSIDERATIONS

Disposal Methods

Waste from residues / unused products:

Waste must be disposed of in accordance with Federal, State and Local regulation.

Contaminated packaging:

Empty containers should be taken for local recycling, recovery or waste disposal

Components	CAS-No.	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
Ammonium Fluoborate	13826-83-0	None	None	None	None

14. TRANSPORT INFORMATION

DOT

Product code: A1180

Product name: AMMONIUM
FLUOBORATE, CRYSTAL,
TECHNICAL

8 / 12

UN-No: UN3260
Proper Shipping Name: Corrosive solid, acidic, inorganic, n.o.s. (ammonium fluoborate)
Hazard Class: 8
Subsidiary Class: No information available
Packing group: III
Emergency Response Guide Number: 154
Marine Pollutant: No data available
DOT RQ (lbs): No information available
Special Provisions: IB8, IP3, T1, TP33
Symbol(s): [DOT]: (G) - Identifies proper shipping names for which one or more technical names of the hazardous material must be entered in parentheses, in association with the basic description.
Description: UN3260, CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S. (Ammonium Fluoborate), 8, III

TDG (Canada)

UN-No: UN3260
Proper Shipping Name: Corrosive solid, acidic, inorganic, n.o.s. (ammonium fluoborate)
Hazard Class: 8
Subsidiary Risk: No information available
Packing Group: III
Marine Pollutant: No Information available
Description: UN3260, CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S. (Ammonium Fluoborate), 8, III

ADR

UN-No: UN3260
Proper Shipping Name: Corrosive solid, acidic, inorganic, n.o.s. (ammonium fluoborate)
Hazard Class: 8
Packing Group: III
Subsidiary Risk: No information available
Special Provisions: 274
Description: UN3260, CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S. (Ammonium Fluoborate), 8, III

IMO / IMDG

UN-No: UN3260
Proper Shipping Name: Corrosive solid, acidic, inorganic, n.o.s. (ammonium fluoborate)
Hazard Class: 8
Subsidiary Risk: No information available
Packing Group: III
Marine Pollutant: No information available
EMS: F-A
Special Provisions: 223, 274
Description: UN3260, CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S. (Ammonium Fluoborate), 8, III

RID

UN-No: UN3260
Proper Shipping Name: Corrosive solid, acidic, inorganic, n.o.s. (ammonium fluoborate)
Hazard Class: 8
Subsidiary Risk: No information available
Packing Group: III
Special Provisions: 274
Description: UN3260, CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S. (Ammonium Fluoborate), 8, III

ICAO

UN-No: UN3260
Proper Shipping Name: Corrosive solid, acidic, inorganic, n.o.s. (ammonium fluoborate)
Hazard Class: 8
Subsidiary Risk: No information available
Packing Group: III
Description: UN3260, CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S. (Ammonium Fluoborate), 8, III
Special Provisions A3

IATA

UN-No: UN3260
Proper Shipping Name: Corrosive solid, acidic, inorganic, n.o.s. (ammonium fluoborate)
Hazard Class: 8
Subsidiary Risk: No information available
Packing Group: III
ERG Code: 8L
Special Provisions No information available
Description: UN3260, CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S. (Ammonium Fluoborate), 8, III

15. REGULATORY INFORMATION

International Inventories

Components	CAS-No.	U.S. TSCA	KOREA KECL	Philippines (PICCS)	Japan ENCS	CHINA	Australia (AICS)	EINECS-No.
Ammonium Fluoborate	13826-83-0	Present	Present KE-01748	Present	Present (1)-47	Present	Present	Present 237-531-4

U.S. Regulations*Ammonium Fluoborate*

Massachusetts RTK: Present
New Jersey RTK Hazardous Substance List: 0100
New Jersey - Discharge Prevention - List of Hazardous Substances: Present
Pennsylvania RTK: Environmental hazard
Pennsylvania RTK - Environmental Hazard List Present
New York Release Reporting - List of Hazardous Substances:
 5000 lb RQ
 100 lb RQ
Louisiana Reportable Quantity List for Pollutants: 5000lbfinal RQ
 2270kgfinal RQ
California Directors List of Hazardous Substances: Present

California Prop. 65: Safe Drinking Water and Toxic Enforcement Act of 1986.**Chemicals Known to the State of California to Cause Cancer:**

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Chemicals Known to the State of California to Cause Reproductive Toxicity:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Components	CAS-No.	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
Ammonium Fluoborate	13826-83-0	Not Listed	Not Listed	Not Listed	Not Listed

CERCLA/SARA

Components	CAS-No.	CERCLA -	Section 302	Section 302	Section 313 -	Section 313 -

Product code: A1180

Product name: AMMONIUM
 FLUOBORATE, CRYSTAL,
 TECHNICAL

10 / 12

		Hazardous Substances and their Reportable Quantities	Extremely Hazardous Substances and TPQs	Extremely Hazardous Substances and RQs	Chemical Category	Reporting de minimis
Ammonium Fluoborate	13826-83-0	5000 lb final RQ 2270 kg final RQ	None	None	None	None

U.S. TSCA

Components	CAS-No.	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)	TSCA 8(d) - Health and Safety Reporting
Ammonium Fluoborate	13826-83-0	Not Applicable	Not Applicable

Canada

WHMIS hazard class:

D2B Toxic materials
E Corrosive material

Canada Controlled Products Regulation:

This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS contains all of the information required by the CPR.

Inventory

Components	CAS-No.	Canada (DSL)	Canada (NDSL)
Ammonium Fluoborate	13826-83-0	Present	Not Listed

Components	CAS-No.	CEPA Schedule I - Toxic Substances
Ammonium Fluoborate	13826-83-0	Not listed
Components	CAS-No.	CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting
Ammonium Fluoborate	13826-83-0	Not listed

EU Classification

R-phrases(s)

R34 - Causes burns.

S -phrase(s)

S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection.

Components	CAS-No.	Classification	Concentration Limits:	Safety Phrases
Ammonium Fluoborate	13826-83-0		No information	

The product is classified in accordance with Annex VI to Directive 67/548/EEC

Indication of danger:

C - Corrosive.



16. OTHER INFORMATION

Preparation Date: 10/3/2016
Revision Date: Not Applicable
Prepared by: Roumann Pangilinan

Disclaimer:

All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.

End of Safety Data Sheet