

Safety Data Sheet

Material Name: Ammonium Bifluoride

ID: C1-102

*** Section 1 - Identification ***

Chemical Name: Ammonium Bifluoride, Technical Flake Grade

Product Use: For Commercial Use

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Supplier Information

Chem One Ltd.
14140 Westfair East Drive
Houston, Texas 77041-1104

Phone: (713) 896-9966
Fax: (713) 896-7540
Emergency # (800) 424-9300 or +1-(703) 527-3887

General Comments: NOTE: Emergency telephone numbers are to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure, or accident involving chemicals. All non-emergency questions should be directed to customer service.

*** Section 2 – Hazard(s) Identification ***

Hazard Classes

Acute toxicity, oral
Skin corrosion/irritation

Hazard Categories

Category 3
Category 1B

Signal Word: **Danger**



Pictograms:

Hazard Statements

PHYSICAL HAZARDS:

None

HEALTH HAZARDS:

H301 Toxic if swallowed
H314 Causes severe skin burns and eye damage

ENVIRONMENTAL HAZARDS:

None

PRECAUTIONARY STATEMENTS:

P102: Keep out of reach of children
P202: Do not handle until all safety precautions have been read and understood
P260: Do not breathe dust/fume/gas/mist/vapors/spray.
P264: Wash thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P280: Wear protective gloves/protective clothing/eye protection/face protection.

RESPONSE STATEMENTS:

P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

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

P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.

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

P310: Immediately call a POISON CENTER/doctor (USA National POISON CENTER 800-222-1222)

P363: Wash contaminated clothing before reuse.

STORAGE STATEMENTS:

P405: Store locked up.

DISPOSAL STATEMENTS:

P501: Dispose of content and/or container in accordance with local, regional, national or international regulations

Hazards not otherwise classified (HNOC):

No data available

*** Section 3 – Composition/information on Ingredients ***

CAS #	Component	Percent
1341-49-7	Ammonium Bifluoride	> 94
12125-01-8	Ammonium Fluoride	4

Component Related Regulatory Information

This product may be regulated have exposure limits or other information identified as the following: Fluorides (16984-48-8), Fluorides, inorganic.

Synonyms: Ammonium Fluoride; Ammonium Hydrogen Fluoride; Ammonium hydrogendifluoride; Ammonium Difluoride; Acid Ammonium Fluoride.

*** Section 4 - First Aid Measures ***

Description of first aid measures:

In case of eye contact: In case of contact with eyes, rinse immediately with plenty of water for at least 20 minutes. If there is a difficulty in keeping eyes open during irrigation, administer anesthetic drops. If calcium gluconate 1% solution is available, it should be administered. Seek immediate medical attention, preferably an ophthalmologist.

In case of skin contact: Remove all contaminated clothing. For skin contact, wash thoroughly with soap and water for at least 20 minutes. Apply calcium gluconate gel (2.5%) and massage into affected area (hands must be gloved); continue massage while repeatedly applying gel until 15 minutes after pain has ceased. Seek immediate medical attention.

In case of ingestion: DO NOT INDUCE VOMITING. Never give anything by mouth to a victim who is unconscious or having convulsions. Have victim rinse mouth thoroughly with water, if conscious. Attempt immediate administration of a fluoride binding substance with oral exposures. Options include milk (4 to 8 ounces), chewable calcium carbonate tablets or Milk of Magnesia. Avoid large amounts of liquid, since this may induce vomiting. Contact a physician or poison control center immediately.

If inhaled: Remove source of contamination or move victim to fresh air. Apply artificial respiration if victim is not breathing. Do not use mouth-to-mouth method 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. Administer oxygen if breathing is difficult. Get immediate medical attention.

Symptoms and potential health effects:

Eyes: Exposure to particulates or solution of this product may cause redness, pain and blurred vision. Prolonged contact may cause corneal injury or, in severe cases, blindness. Effects may be delayed.

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Skin: This product can cause irritation of the skin with pain, itching and redness. Ammonium Bifluoride can cause severe necrosis to tissue, with symptoms such as redness, itching, burns and scarring. Burns may not be immediately visible or painful. Ammonium Bifluoride can cause a unique, large, pustular skin rash, which is apparently not an irritant or allergic dermatitis. As a fluoride compound, Ammonium Bifluoride has the potential to decompose upon contact with moisture to form hydrofluoric acid, which can penetrate the skin, causing destruction of the deep tissue layers, including bone tissue. This damage to the body's tissues may continue for days, as the fluoride ion reacts with the calcium in the skin and bone. Severe skin-contact exposures (especially when the skin contamination exceeds 160 cm²) can lead to hypocalcemia, a life-threatening lowering of serum calcium in the body. Ammonium Bifluoride may be systematically absorbed in lethal amounts through intact skin. Effects may be delayed and not felt for hours.

Ingestion: Harmful if swallowed. Data indicate that ingestion of between 1 teaspoon and 1 ounce may be fatal. This product may cause corrosive damage to gastrointestinal tract, symptoms of such over-exposure include, salivation, nausea, vomiting, diarrhea, hypocalcemia, burning pain, convulsions, shock, muscle spasms, coma, cardiac arrhythmias, cardio and pulmonary arrest, and possibly, death. At high concentrations, there is a risk of hypocalcemia.

Inhalation: This product is irritating to the nose, throat and respiratory tract. Symptoms can include sore throat, coughing and shortness of breath. In severe cases, ulceration and perforation of the nasal septum and upper respiratory tract can occur. Inhalation of high concentrations can lead to chemical pneumonia, pulmonary edema, and hypocalcemia. Effects may be delayed.

Notes to Physician and Special Treatment:

Provide general supportive measures and treat symptomatically. For eye contamination rinse eye(s) with a calcium gluconate 1% solution in physiological serum (10 mL of calcium gluconate 10% in 90 mL of physiological serum). In case of difficulty of opening lids, administer an analgesic eye wash (oxybuprocaine). For skin contact, application of calcium gluconate gel (2.5%) should occur 4 to 6 times per day. If victim suffers second or third degree burns, subcutaneous injection of 10% calcium gluconate at a distance of 7 mm around the affected area. If fingers or toes have been contaminated, dip in a bath of 5% calcium gluconate for 15 to 20 minutes. For severe burns of the digits, slow intraarterial infusion (over a 4 hour period) of 10 mL of a 10% calcium gluconate solution diluted in 40 mL of physiological serum. Phlyctenae and necrotic tissue should be debrided (warning: liquid in phlyctenae is corrosive). For ingestion exposure, provide oxygen therapy via intratracheal intubation, if breathing is difficult or victim is not breathing. If throat is constricted due to burns, perform tracheotomy. Careful gastric lavage should be performed after administration of 10 vials of calcium gluconate. Repeat as often as necessary. In case of intense pain, inject an I.M. morphomimetic analgesic drug (e.g. piritramide) prior to transport. Prevention and treatment for shock, pulmonary edema and esophageal stenosis, as well as hypocalcemia should occur. Examination by digestive tract endoscopy should be performed in all cases. In case of hypocalcemia, administer I.V. perfusion of 20 mL of a 10% calcium gluconate solution diluted in 1 liter of physiological serum. Surveillance of hyperfluoremia should occur, with possible treatment with hemodialysis should occur, as well as surveillance of cardiac ECG, and respiratory and renal function.

*** Section 5 - Fire Fighting Measures ***

General Fire Hazards

This product is not combustible; however, this product is corrosive and presents a severe inhalation and contact hazard to firefighters. When involved in a fire, this material may decompose and produce corrosive and/or toxic gases (i.e. ammonia, hydrogen fluoride and nitrogen oxides).

Hazardous Combustion Products

Nitrogen oxides, hydrogen fluoride, and ammonia.

Extinguishing Media

Dry chemical, foam, carbon dioxide, water fog. Use water to cool fire-exposed containers and to protect personnel. Contact of this product with water produces hydrofluoric acid, which is capable of etching glass, cement and many metals.

Fire Fighting Equipment/Instructions

Firefighters should wear full protective clothing including self-contained breathing apparatus. Runoff from fire control or dilution water may be corrosive and/or toxic and cause pollution.

NFPA Ratings: Health: 3 Fire: 0 Reactivity: 1 Other:

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

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*** Section 6 - Accidental Release Measures ***

Personal precautions

Evacuate the area promptly and keep upwind of the spilled material. Isolate the spill area to prevent people from entering. Keep materials that burn away from spilled material. In case of large spills, follow all facility emergency response procedures. Wear appropriate protective equipment and clothing during clean-up. This includes full, chemically resistant clothing if spill is substantial. All contact with Ammonium Bifluoride must be avoided during cleanup. Remove soiled clothing and launder before reuse. Avoid all skin contact with the spilled material. Have emergency equipment readily available. Emergency first aid kits which include calcium gluconate preparations should be readily available in case of exposure to response personnel during clean-up. Personnel should be trained in the use of these first aid materials.

Methods and materials for containment and clean-up

Stop the flow of material, if this can be done without risk. Contain the discharged material. If sweeping of a contaminated area is necessary use a dust suppressant agent, which does not react with product (see Section 10 for incompatibility information). Shovel the material into waste container. Thoroughly wash the area after a spill or leak cleanup.

Environmental precautions

Prevent spill rinsate from contamination of storm drains, sewers, soil or groundwater.

*** Section 7 - Handling and Storage ***

Handling Procedures

All employees who handle this material should be trained to handle it safely. Do not breathe dust. Avoid all contact with skin and eyes. Use this product only with adequate ventilation. Wash thoroughly after handling.

Storage Procedures

Keep container tightly closed when not in use. Store containers in a cool, dry location, away from direct sunlight, sources of intense heat, or where freezing is possible. Do not store this product in glass or silicate-based containers. Material should be stored in secondary containers or in a diked area, as appropriate. Store containers away from incompatible chemicals (see Section 10, Stability and Reactivity). Storage areas should be made of corrosion- and fire-resistant materials. Post warning and "NO SMOKING" signs in storage and use areas, as appropriate. Use corrosion-resistant structural materials, lighting, and ventilation systems in the storage area. Floors should be sealed to prevent absorption of this material. Inspect all incoming containers before storage, to ensure containers are properly labeled and not damaged. Have appropriate extinguishing equipment in the storage area (i.e., sprinkler system, portable fire extinguishers). Empty containers may contain residual particulates; therefore, empty containers should be handled with care. Do not cut, grind, weld, or drill near this container. Never store food, feed, or drinking water in containers that held this product. Keep this material away from food, drink and animal feed. Do not store this material in open or unlabeled containers. Limit quantity of material stored.

Emergency first aid kits which include calcium gluconate preparations should be readily available in storage areas, in case of exposure to personnel during use. Personnel should be trained in the use of these first aid materials.

*** Section 8 - Exposure Controls / Personal Protection ***

Exposure Guidelines

A: General Product Information

Follow the applicable exposure limits.

B: Component Exposure Limits

Component	CAS #	Value	Type/Regulation
Fluoride (as F)	16984-48-8	2.5 mg/m ³	ACGIH – TWA
		2.5 mg/m ³	OSHA – TWA
		2.5 mg/m ³	NIOSH – TWA

Engineering Controls

Use mechanical ventilation such as dilution and local exhaust. Use a corrosion-resistant ventilation system and exhaust directly to the outside. Supply ample air replacement. Provide dust collectors with explosion vents.

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PERSONAL PROTECTIVE EQUIPMENT

The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132) or equivalent Standards of Canada. Please reference applicable regulations and standards for relevant details.

Personal Protective Equipment: Eyes/Face

Wear safety glasses with side shields (or goggles) and a face shield. . If necessary, refer to U.S. OSHA 29 CFR 1910.133.

Personal Protective Equipment: Skin

Wear impervious gloves, boots and coveralls to avoid skin contact. Natural rubber, nitrile, polyvinyl chloride or neoprene gloves are recommended. Gloves should be tested to determine their suitability for prolonged contact with this material. If necessary, refer to U.S. OSHA 29 CFR 1910.138.

Personal Protective Equipment: Respiratory

If airborne concentrations are above the applicable exposure limits, use cartridge respirator or other NIOSH-approved respiratory protection. If respiratory protection is needed, use only protection authorized in the U.S. Federal OSHA Standard (29 CFR 1910.134), applicable U.S. State regulations. Oxygen levels below 19.5% are considered IDLH by OSHA. In such atmospheres, use of a full-facepiece pressure/demand SCBA or a full facepiece, supplied air respirator with auxiliary self-contained air supply is required under OSHA's Respiratory Protection Standard (1910.134-1998). If airborne concentrations are above the applicable exposure limits, use NIOSH-approved respiratory protection. The following NIOSH recommended respiratory protection equipment guidelines for fluorine are presented for further information:

Concentration Respiratory Equipment

1 ppm: Any Supplied Air Respirator (SAR).

2.5 ppm: Any SAR operated in a continuous-flow mode.

5 ppm: Any Self-Contained Breathing Apparatus (SCBA) with a full facepiece or any SAR with a full facepiece.

25 ppm: Any SAR with a full facepiece operated in a positive pressure mode.

Emergency or Planned Entry into Unknown Concentration or IDLH Conditions: Any SAR with full facepiece operated in a positive pressure mode in combination with an auxiliary SCBA operated in positive pressure mode.

Escape: Any air purifying, full facepiece respirator or any appropriate escape type SCBA.

Note: The IDLH limit for this product is 25 mg/m³ as fluorine.

In addition, the ACGIH has the following Excursion Limit Recommendation: Excursions in worker exposure levels may exceed three times the TLV-TWA for no more than a total of 30 minutes during a work day, and under no circumstances should they exceed five times the TLV-TWA, provided that the TLV-TWA is not exceeded (for fluorides [as F]).

Personal Protective Equipment: General

Have an eyewash fountain and safety shower available in the work area. Emergency first aid kits which include calcium gluconate preparations should be readily available in storage areas, in case of exposure to personnel during use. Personnel should be trained in the use of these first aid materials.

Protective Clothing Pictograms:



*** Section 9 - Physical & Chemical Properties ***

Physical Properties:

Physical State:	Solid
Appearance:	White crystals or flakes
Odor:	Pungent
Odor Threshold:	Not determined
pH:	2 (5.7 g/L, 20 °C)
Melting Point/Range:	124 °C (255 °F)
Boiling Point/Range:	Not applicable, decomposes
Flash Point:	Not applicable
Evaporation Rate:	Not applicable

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Flammability:	Not flammable
Flammability/Explosive Limits:	Not determined
Vapor Pressure:	< 0.75 mmHg @ 20 °C
Vapor Density:	Not determined
Specific Gravity:	1.503
Solubility in Water:	63 g/L @ 20 °C
Partition Coefficient:	Not determined
Autoignition Temperature:	Not applicable
Decomposition Temperature:	240 °C (464 °F)
Viscosity:	Not applicable
Chemical Formula:	NH ₄ HF ₂
Molecular Weight:	57.04
Softening Point:	Not determined
Particle Size:	Not determined
Bulk Density:	Not determined

Additional Information

The data provided in this section are to be used for product safety handling purposes. Please refer to Product Data Sheets, Certificates of Conformity or Certificates of Analysis for chemical and physical data for determinations of quality and for formulation purposes.

*** Section 10 - Chemical Stability & Reactivity Information ***

Chemical Stability

Stable under normal conditions. Contact with moisture will cause this product to decompose to form hydrofluoric acid.

Conditions to Avoid

Avoid dispersion of Ammonium Bifluoride particulates into air, contact with heat, moisture and ignition sources.

Incompatibility

Incompatible with strong acids, strong bases, and oxidizers. Contact with water forms hydrofluoric acid which can corrode glass, cement, and many metals.

Hazardous Decomposition

Thermal Decomposition: Nitrogen oxides, fluorine and ammonia gas. Contact with Moisture: Hydrofluoric acid.

Hazardous Polymerization

Will not occur.

*** Section 11 - Toxicological Information ***

Acute and Chronic Toxicity

A: General Product Information

Harmful or fatal if swallowed. Product is corrosive and can cause burns to contaminated eyes, skin and any other contaminated tissue. Effects may be delayed. Ammonium Bifluoride is a respiratory tract irritant, and inhalation may cause nose irritation, sore throat, coughing, and chest tightness and possibly, ulceration and perforation of the nasal septum. Inhalation exposure to high levels could cause pulmonary edema (buildup of fluid in the lungs), which could result in death. Ingestion can result in severe gastric distress with possible vomiting, bloody diarrhea, hypocalcemia, CNS depression, shock, muscle spasms and death. Ammonium Bifluoride can be absorbed through intact skin in lethal amounts.

Chronic: Long term skin overexposure to this product may lead to mottled tooth enamel and osteosclerosis (an increased density in the bones and calcification ligaments due to accumulation of fluoride). Chronic ingestion of this product may result in fluorosis (an excess of fluoride in the body) with skeletal abnormalities, anemia and kidney damage.

B: Component Analysis - LD₅₀/LC₅₀

Ammonium Fluoride:

Route of Exposure	Test Type and Value
Oral:	Not determined
Inhalation:	TC _{Lo} (Rat, 6h, 39 weeks intermittent) = 1600 µg/m ³ ; Blood: changes in serum composition; Musculoskeletal: other changes; Biochemical: Enzyme inhibition
Dermal:	LD _{Lo} (Frog, adult, subcutaneous) = 280 mg/kg

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Carcinogenicity

A: General Product Information

No information available.

B: Component Carcinogenicity

The components of this product are found on the following lists:

Fluorides, as F:

ACGIH TLV-A4	Not Classifiable as a Human Carcinogen.
IARC-3	Unclassifiable as to Carcinogenicity in Humans

Neurotoxicity

Central Nervous System depression, seizures, muscle spasms, and paralysis may occur after ingestion of this product.

Mutagenicity

Some fluorides have shown mutagenic effects at very high concentrations *in vitro*.

Teratogenicity

No information available for this product, but large prenatal exposures to fluoride ions, have been shown to cause mottling of baby teeth.

Other Toxicological Information

Persons that suffer from diabetes insipidus or some forms of renal impairment have increased risk from the effects of this product. The following Biological Exposure Indices are currently available for Fluorides:

<u>Chemical Determinant</u>	<u>Sampling Time</u>	<u>BEI</u>
Fluorides (fluorides in urine)	Prior to Shift	3 mg/g creatinine
	End of Shift	10 mg/g Creatinine

*** Section 12 - Ecological Information ***

Ecotoxicity

A: General Product Information

Effects of this product on aquatic life are unknown. This product may be toxic to fish and marine organisms when applied to streams, rivers, ponds or lakes.

B: Ecotoxicity

Ammonium Fluoride (12125-01-8):

Toxicity to fish:	LC ₅₀ (<i>Pimephales promelas</i> , fathead minnow, 96 h) = 417 mg/L
Toxicity to invertebrates:	LC ₅₀ (<i>Palaemonetes pugio</i> , grass shrimp, 96 h) = 93 mg/L
	LC ₅₀ (<i>Daphnia magna</i> , 96 h) = 50 mg/L
Toxicity to algae:	Not determined
Toxicity to bacteria:	Not determined

Environmental Fate

No potential for food chain accumulation.

*** Section 13 - Disposal Considerations ***

US EPA Waste Number & Descriptions

A: General Product Information

Wastes of this product must be tested using methods described in 40 CFR Part 261 to determine if it meets applicable definitions of hazardous wastes. Liquid or aqueous solutions of this product may require an EPA waste code D002, for corrosivity.

B: Component Waste Numbers

No EPA Waste Numbers are applicable for this product's components.

Disposal Instructions

All wastes must be handled in accordance with local, state and federal regulations. Material can be converted to a less hazardous material by weak reducing agents followed by neutralization.

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*** Section 14 – Transportation Information Ground ***

NOTE: The shipping classification information in this section (Section 14) is meant as a guide to the overall classification of the product. However, transportation classifications may be subject to change with changes in package size. Consult shipper requirements under 49 CFR, IATA and IMDG to assure regulatory compliance.

US DOT 49 CFR 100-185 Revised December 31, 2014 Information



UN/NA #: UN 1727

Shipping Name: Ammonium hydrogendifluoride, solid

Hazard Class: 8

Packing Group: II

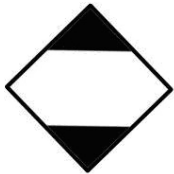
Required Label(s): Class 8 (Corrosive)

Special Provision: IB8, IP2, IP4, N34

Packaging: 172.212

Additional Shipping Information

For a single package less than the RQ of 100 lb (45.4 kg), the RQ designation should be not be used.



Limited Quantity Shipments: Shipments, except for air, need not be marked with the Proper Shipping Name of the contents, but shall be marked with a diamond. The top and bottom portions of the square-on-point must be black and the center white or of a suitable contrasting background. The mark must be at least 2 mm. Each side must have a minimum dimension of 100 mm. Small packages which cannot reasonably accommodate a 100 mm square-on-point mark may be marked with a square-on-point mark with a minimum side dimension of 50 mm. The total weight of each outer packaging cannot exceed 30 kg (66 pounds).

Small Quantities for Highway and Rail: The maximum quantity of this material per inner receptacle is limited to 30 g (1 ounce) per receptacle. The inner receptacles must be securely packed in an inside packaging with cushioning material to prevent movement of the inner receptacles and packed in a strong outer box with a gross mass not to exceed 29kg (64 pounds). The completed package must meet the drop test requirements of 173.4(6) (i). The outside of the package must be marked with the statement **"This package conforms to 49 CFR 173.4 for domestic highway or rail transport only."**

Excepted Quantities: The maximum quantity of this material per inner receptacle is limited to 30 g (1 ounce) per receptacle and the aggregate quantity of this material per completed package does not exceed 500g (1.1 pounds). The inner receptacles must be securely packed in an inside packaging with cushioning material to prevent movement in the inner receptacles and packed in a strong outer box with a gross mass not to exceed 29kg (64 pounds). The completed package must meet a drop test. The requirements are found in 173.4(6) (i). The package must not be opened or otherwise altered until it is no longer in commerce. For highway or rail transportation no shipping paper is required. The package must be legibly marked with the following marking:



NOTE: The "***" must be replaced by the primary hazard class, or when assigned, the division of each of the hazardous materials contained in the package. The "****" must be replaced by the name of the shipper or consignee if not shown elsewhere on the package. The symbol shall be not less than 100 mm (3.9 inches) x 100 mm (3.9 inches), and must be durable and clearly visible.

De minimis Exceptions: The maximum quantity of this material per inner receptacle is limited to 1g (0.04 ounce) per receptacle and the aggregate quantity of this material per completed package does not exceed 100 g (0.22 pounds). The inner receptacles must be securely packed in an inside packaging with cushioning material to prevent movement in the inner receptacles and packed in a strong outer box with a gross mass not to exceed 29kg (64 pounds). The completed package must meet the drop test. The requirements are

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found in 173.4(6) (i). The package must not be opened or otherwise altered until it is no longer in commerce and may be transported by aircraft. If all of the above requirements are met, then this material is not regulated.

Please refer to the most recent edition of the "International Air Transport Association (IATA)" Regulations

Please refer to the most recent Amendment of the "International Maritime Dangerous Goods (IMDG) Code"

* * * Section 15 – Regulatory Information * * *

US Federal Regulations

A: General Product Information

Ammonium Bifluoride (CAS # 1341-49-7) and Ammonium Fluoride (CAS # 12125-01-8) are designated as hazardous substances under section 311(b)(2)(A) of the Federal Water Pollution Control Act and are further regulated by the Clean Water Act Amendments of 1977 and 1978. These regulations apply to discharges of these substances.

B: Component Analysis

This product contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65) and/or CERCLA (40 CFR 302.4).

Ammonium Bifluoride (1341-49-7):

CERCLA: Final RQ = 100 pounds (45.4 kg)

SARA 302 (EHS TPQ) There are no specific Threshold Planning Quantities for Ammonium Bifluoride. The default Federal MSDS submission and inventory requirement filing threshold of 10,000 lbs. (4,540 kg) therefore applies, per 40 CFR 370.20.

Ammonium Fluoride (12125-01-8):

CERCLA: Final RQ = 100 pounds (45.4 kg)

SARA 302 (EHS TPQ) There are no specific Threshold Planning Quantities for Ammonium Fluoride. The default Federal MSDS submission and inventory requirement filing threshold of 10,000 lbs. (4,540 kg) therefore applies, per 40 CFR 370.20.

US Federal Regulations (continued)

C: Sara 311/312 Tier II Hazard Ratings:

Component	CAS #	Fire Hazard	Reactivity Hazard	Pressure Hazard	Immediate Health Hazard	Chronic Health Hazard
Ammonium Bifluoride	1341-49-7	No	Yes	No	Yes	Yes
Ammonium Fluoride	12125-01-8	No	Yes	No	Yes	Yes

State Regulations

A: General Product Information

California Proposition 65

Ammonium Bifluoride is not on the California Proposition 65 chemical lists.

B: Component Analysis - State

The following components appear on one or more of the following state hazardous substance lists:

Component	CAS #	CA	FL	MA	MN	NJ	PA
Ammonium Bifluoride	1341-49-7	No	No	No	No	Yes	Yes
Ammonium Fluoride	12125-01-8	No	Yes	Yes	No	Yes	Yes

Other Regulations

A: General Product Information

U.S. Export Administration Regulations (EAR) (15 CFR Parts 736, 738, 740, 742, 745, 770 and 774): Under the Chemical Weapons Convention (CWC) Ammonium Bifluoride (Ammonium hydrogen fluoride, CAS # 1341-49-7) is on the list of Other Australia Group-controlled precursor chemicals not also identified as Schedule 1, 2 or 3 chemicals.

B: Component Analysis - Inventory

Component	CAS #	TSCA
Ammonium Bifluoride	1341-49-7	Yes Active
Ammonium Fluoride	12125-01-8	Yes Active

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*** Section 16 - Other Information ***

Other Information

Chem One Ltd. ("Chem One") shall not be responsible for the use of any information, product, method, or apparatus herein presented ("Information"), and you must make your own determination as to its suitability and completeness for your own use, for the protection of the environment, and for health and safety purposes. You assume the entire risk of relying on this Information. In no event shall Chem One be responsible for damages of any nature whatsoever resulting from the use of this product or products, or reliance upon this Information. By providing this Information, Chem One neither can nor intends to control the method or manner by which you use, handle, store, or transport Chem One products. If any materials are mentioned that are not Chem One products, appropriate industrial hygiene and other safety precautions recommended by their manufacturers should be observed. Chem One makes no representations or warranties, either express or implied of merchantability, fitness for a particular purpose or of any other nature regarding this information, and nothing herein waives any of Chem One's conditions of sale. This information could include technical inaccuracies or typographical errors. Chem One may make improvements and/or changes in the product (s) and/or the program (s) described in this information at any time. If you have any questions, please contact us at Tel. 713-896-9966 or E-mail us at Safety@chemone.com.

Key/Legend

EPA = Environmental Protection Agency; TSCA = Toxic Substance Control Act; ACGIH = American Conference of Governmental Industrial Hygienists; IARC = International Agency for Research on Cancer; NIOSH = National Institute for Occupational Safety and Health; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration

Contact: Sue Palmer-Koleman, PhD

Contact Phone: (713) 896-9966

Revision Log

07/21/00 4:20 PM SEP Changed company name. Sect 1 and 16, from Corporation to Ltd.
12/12/00 1:20 PM HDF Added more detailed health hazard information related to hypocalcemia in Section 3. Added IARC-3 designation in Section 11. Added TLo data for Ammonium Fluoride.
05/14/01 9:31 AM Checked exposure limits; made changes to Section 9; overall review, add SARA 311/312 Hazard Ratings.
07/24/01 3:24 PM Changed contact to Sue, non-800 Chemtrec Phone Number added.
07/31/03 12:00 pm HDF General review of entire MSDS. Up-graded Section 10 Reactivity Information. Up-Dated entire Section 14 Transportation Information to include IATA, IMO transport information.
03/22/04 9:06 AM HDF Addition of Export Administration Regulations, Section 15.
06/22/05 11:54AM SEP Updated IATA Section 14.
06/08/06 2:00 PM HDF Addition of text to Section 3 related to delay of symptoms.
09/05/06 2:29 PM SEP Updated DOT & IMO Section 14.
10/10/08 3:07 PM DLY Changed Chem One Physical Address
09/18/09 MMK Updated Section 14 limited & excepted quantities and exceptions.
1/2./2015 GHS revision all sections

Revised By:

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06/13/2018 Melanie Koch removed IMDG and IATA specific shipping information and added a refer to latest edition statement. Nothing else was changed during this revision.

06/17/2019 Revised Sections 2, 4, and 9, removed ANSI Labeling.

11/10/2021 Revised Section 15 information. Modified format.

This is the end of MSDS # C1-102