

MATERIAL SAFETY DATA SHEET**Product Name:** Ammonium fluoride**CAS No.:** 12125-01-8**Version:** 0**1. Identification**

Product Code : 90117, 90329
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2. Composition/Information on Ingredients

Ingredient	CAS No	Percent
AMMONIUM FLUORIDE	12125-01-8	99-100%

3. Hazards 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

Labels 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.

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- 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.

4. First Aid Measures

- General information** : Get medical advice/attention if you feel unwell. If medical advice is needed, have product container or label at hand. 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** : Irritating to eyes, respiratory system and skin.
- Indication of immediate medical attention and special treatment needed** : Treat symptomatically. Symptoms may be delayed

5. Fire fighting measures**Suitable (and unsuitable) extinguishing media**

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

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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. Keep upwind. Ventilate closed spaces before entering them. Avoid inhalation of dust. 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** : Inform authorities if large amounts are involved. Prevent entry into waterways, sewer, basements or confined areas.
- Environmental precautions** : 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.
- 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	TWA	2.5 mg/m ³	US. ACGIH Threshold Limit Values (2011)
	REL	2.5 mg/m ³	US. NIOSH: Pocket Guide to Chemical Hazards (2010)

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	PEL	2.5 mg/m ³	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	TWA	2.5 mg/m ³	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	TWA	2.5 mg/m ³	US. OSHA Table Z-2 (29 CFR 1910.1000) (02 2006)

Biological limit values

Chemical identity	Exposure Limit values	Source
AMMONIUM FLUORIDE	2 mg/l (Urine)	ACGIH BEL (02 2012)
AMMONIUM FLUORIDE	3mg/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.

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

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 : Colorless Solid Crystals .

Odor : Odorless.

pH : No data available.

Melting point/freezing point : Sublimes upon heating.

Initial boiling point and boiling range : Not applicable.

Flash Point : Not applicable.

Vapor pressure : Estimated < 0.01 kPa (25 °C) .

Vapor density : No data available.

Relative density : 1.01 (20 °C) .

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Solubility in water : 1,000 g/l (0 °C)
Solubility (other) : No data available.
Formula : FH_4N
Molecular Weight : 37.04 g/mol .

10. Stability and Reactivity

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

11. Toxicological Information**Information on likely routes of exposure**

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

Information on toxicological effects**Acute toxicity (list all possible routes of exposure)**

Oral Product : No data recorded.
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 DIOXANE : No carcinogenic components identified.
US. National Toxicology Program (NTP) Report on Carcinogens : No carcinogenic components identified.

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DIOXANE

- 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.

12. Ecological Information

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

- 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.

13. Disposal consideration

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.

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14. Transport Information

	UN No.	UN proper shipping name	Hazard Class(es)	Packaging group	Marine Pollutant
DOT	UN 2505	Ammonium fluoride	6.1	II	No
IMDG	UN 2505	Ammonium fluoride	6.1	II	No
IATA	UN 2505	Ammonium fluoride	6.1	II	No

15. Regulatory Information

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

Safety, health and environmental regulations/legislation specific for the substance or mixture
No Data Available.

16. Other Information

NFPA Hazard ID



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

Issue Date :01/08/2014

Version :0

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