

# Safety Data Sheet

acc. to OSHA HCS

Printing date 10/02/2017

Reviewed on 10/02/2017

## 1 Identification

- **Product identifier**
- **Trade name:** Ammonium Fluoride, Reagent ACS Crystal
- **Article number:** A4630
- **CAS Number:**  
12125-01-8
- **EC number:**  
235-185-9
- **Index number:**  
009-006-00-8
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Aqua Solutions, Inc.  
6913 Highway 225  
DEER PARK, TX 77536  
USA  
800-256-2586
- **Information department:**  
Technical Coordinator  
Sherman Nelson sherman@aquasolutions.org
- **Emergency telephone number:**  
Chemtrec: 800-424-9300  
Canutec: 613-996-6666



## 2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS06 Skull and crossbones

Acute Tox. 3 H301 Toxic if swallowed.

Acute Tox. 3 H311 Toxic in contact with skin.

Acute Tox. 3 H331 Toxic if inhaled.

- **Label elements**
- **GHS label elements** The substance is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**



GHS06

- **Signal word** *Danger*
- **Hazard statements**  
*Toxic if swallowed, in contact with skin or if inhaled.*
- **Precautionary statements**  
*Avoid breathing dust/fume/gas/mist/vapors/spray*  
*Wash thoroughly after handling.*  
*Do not eat, drink or smoke when using this product.*  
*Use only outdoors or in a well-ventilated area.*  
*Wear protective gloves / protective clothing.*  
*IF SWALLOWED: Immediately call a POISON CENTER/ doctor.*

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*IF ON SKIN:* Wash with plenty of water.

*IF INHALED:* Remove person to fresh air and keep comfortable for breathing.

Call a **POISON CENTER/doctor**.

Call a **POISON CENTER/doctor** if you feel unwell.

Specific treatment (see on this label).

Rinse mouth.

Take off immediately all contaminated clothing and wash it before reuse.

Store in a well-ventilated place. Keep container tightly closed.

Store locked up.

Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



Health = 2

Fire = 0

Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**



Health = 3

Fire = 0

Reactivity = 0

· **Other hazards**

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

### 3 Composition/information on ingredients

· **Chemical characterization: Substances**

· **CAS No. Description**

12125-01-8 Ammonium Fluoride

· **Identification number(s)**

· **EC number:** 235-185-9

· **Index number:** 009-006-00-8

### 4 First-aid measures

· **Description of first aid measures**

· **General information:**

Immediately remove any clothing soiled by the product.

Remove breathing apparatus only after contaminated clothing have been completely removed.

In case of irregular breathing or respiratory arrest provide artificial respiration.

· **After inhalation:**

Supply fresh air or oxygen; call for doctor.

In case of unconsciousness place patient stably in side position for transportation.

· **After skin contact:** Immediately wash with water and soap and rinse thoroughly.

· **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.

· **After swallowing:** Do not induce vomiting; immediately call for medical help.

· **Information for doctor:**

· **Most important symptoms and effects, both acute and delayed** No further relevant information available.

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- **Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

### 5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** Mouth respiratory protective device.

### 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures** Not required.
- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**  
Dispose contaminated material as waste according to item 13.  
Ensure adequate ventilation.
- **Reference to other sections**  
See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.
- **Protective Action Criteria for Chemicals**
- **PAC-1:** 15 mg/m<sup>3</sup>
- **PAC-2:** 160 mg/m<sup>3</sup>
- **PAC-3:** 980 mg/m<sup>3</sup>

### 7 Handling and storage

- **Handling:**
- **Precautions for safe handling**  
Ensure good ventilation/exhaustion at the workplace.  
Open and handle receptacle with care.
- **Information about protection against explosions and fires:** Keep respiratory protective device available.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep receptacle tightly sealed.
- **Specific end use(s)** No further relevant information available.

### 8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.

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· **Control parameters**

· **Components with limit values that require monitoring at the workplace:**

**CAS: 12125-01-8 Ammonium Fluoride**

PEL	Long-term value: 2.5 mg/m <sup>3</sup> as F
REL	Long-term value: 2.5 mg/m <sup>3</sup> as F
TLV	Long-term value: 2.5 mg/m <sup>3</sup> as F, BEI

· **Ingredients with biological limit values:**

**CAS: 12125-01-8 Ammonium Fluoride**

BEI	2 mg/L LD50 Intraperitoneal: urine Time: prior to shift LD50: Fluoride (background, nonspecific)
	3 mg/L LD50 Intraperitoneal: urine Time: end of shift LD50: Fluoride (background, nonspecific)

· **Additional information:** The lists that were valid during the creation were used as basis.

· **Exposure controls**

· **Personal protective equipment:**

· **General protective and hygienic measures:**

- Keep away from foodstuffs, beverages and feed.
- Immediately remove all soiled and contaminated clothing.
- Wash hands before breaks and at the end of work.
- Store protective clothing separately.
- Avoid contact with the eyes and skin.

· **Breathing equipment:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

· **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:** Not required.

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· **Body protection:** Protective work clothing

## 9 Physical and chemical properties

· **Information on basic physical and chemical properties**· **General Information**· **Appearance:**· **Form:** Crystalline· **Color:** White· **Odor:** Odorless· **Odor threshold:** Not determined.· **pH-value:** Not determined.· **Change in condition**· **Melting point/Melting range:** Undetermined.· **Boiling point/Boiling range:** Undetermined.· **Flash point:** Not applicable.· **Flammability (solid, gaseous):** Not applicable.· **Ignition temperature:**· **Decomposition temperature:** Not determined.· **Auto igniting:** Not determined.· **Danger of explosion:** Product does not present an explosion hazard.· **Explosion limits:**· **Lower:** Not determined.· **Upper:** Not determined.· **Vapor pressure:** Not determined.· **Density at 20 °C (68 °F):** 1.01 g/cm<sup>3</sup> (8.428 lbs/gal)· **Bulk density at 20 °C (68 °F):** 260 kg/m<sup>3</sup>· **Relative density** Not determined.· **Vapor density** Not determined.· **Evaporation rate** Not applicable.· **Solubility in / Miscibility with**· **Water at 20 °C (68 °F):** 820 g/l· **Partition coefficient (n-octanol/water):** Not determined.· **Viscosity:**· **Dynamic:** Not determined.· **Kinematic:** Not determined.· **Other information** No further relevant information available.

## 10 Stability and reactivity

· **Reactivity** No further relevant information available.· **Chemical stability**· **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.· **Possibility of hazardous reactions** No dangerous reactions known.

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- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

### 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

- **LD/LC50 values that are relevant for classification:**

Oral	LD50	100 mg/kg (ATE)
Dermal	LD50	300 mg/kg (ATE)
Inhalative	LC50/4 h	3 mg/l (ATE)

- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
- **Carcinogenic categories**
- **IARC (International Agency for Research on Cancer) 3**
- **NTP (National Toxicology Program) Substance is not listed.**
- **OSHA-Ca (Occupational Safety & Health Administration) Substance is not listed.**

### 12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**
- **Water hazard class 1 (Assessment by list):** slightly hazardous for water
- **Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

### 13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**
- **Must not be disposed of together with household garbage. Do not allow product to reach sewage system.**
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

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· **Recommended cleansing agent:** Water, if necessary with cleansing agents.

## 14 Transport information

<b>· UN-Number</b>	
<b>· DOT, IMDG, IATA</b>	UN2505
<b>· UN proper shipping name</b>	
<b>· DOT</b>	Ammonium fluoride
<b>· IMDG, IATA</b>	AMMONIUM FLUORIDE
<b>· Transport hazard class(es)</b>	
<b>· DOT</b>	
	
<b>· Class</b>	6.1 Toxic substances
<b>· Label</b>	6.1
<b>· IMDG, IATA</b>	
	
<b>· Class</b>	6.1 Toxic substances
<b>· Label</b>	6.1
<b>· Packing group</b>	
<b>· DOT, IMDG, IATA</b>	III
<b>· Environmental hazards:</b>	
<b>· Marine pollutant:</b>	No
<b>· Special precautions for user</b>	Warning: Toxic substances
<b>· Danger code (Kemler):</b>	60
<b>· EMS Number:</b>	F-A,S-A
<b>· Segregation groups</b>	Ammonium compounds
<b>· Stowage Category</b>	A
<b>· Segregation Code</b>	SG35 Stow "separated from" acids.
<b>· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>	Not applicable.
<b>· Transport/Additional information:</b>	
<b>· DOT</b>	
<b>· Quantity limitations</b>	On passenger aircraft/rail: 100 kg On cargo aircraft only: 200 kg
<b>· Hazardous substance:</b>	100 lbs, 45.4 kg
<b>· IMDG</b>	
<b>· Limited quantities (LQ)</b>	5 kg

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- |                                   |   |
|-----------------------------------|---|
| <b>· Excepted quantities (EQ)</b> | <i>Code: E1</i><br><i>Maximum net quantity per inner packaging: 30 ml</i><br><i>Maximum net quantity per outer packaging: 1000 ml</i> |
| <b>· UN "Model Regulation":</b>   | UN 2505 AMMONIUM FLUORIDE, 6.1, III   |

## 15 Regulatory information

- *Safety, health and environmental regulations/legislation specific for the substance or mixture*
- *Sara*
- *Section 355 (extremely hazardous substances): Substance is not listed.*
- *Section 313 (Specific toxic chemical listings): Substance is not listed.*
- *TSCA (Toxic Substances Control Act): Substance is listed.*
- *Proposition 65*
- *Chemicals known to cause cancer: Substance is not listed.*
- *Chemicals known to cause reproductive toxicity for females: Substance is not listed.*
- *Chemicals known to cause reproductive toxicity for males: Substance is not listed.*
- *Chemicals known to cause developmental toxicity: Substance is not listed.*
- *Carcinogenic categories*
- *EPA (Environmental Protection Agency) Substance is not listed.*
- *TLV (Threshold Limit Value established by ACGIH) A4*
- *NIOSH-Ca (National Institute for Occupational Safety and Health) Substance is not listed.*
- *GHS label elements The substance is classified and labeled according to the Globally Harmonized System (GHS).*
- *Hazard pictograms*



GHS06

- *Signal word Danger*
- *Hazard statements*  
*Toxic if swallowed, in contact with skin or if inhaled.*
- *Precautionary statements*  
*Avoid breathing dust/fume/gas/mist/vapors/spray*  
*Wash thoroughly after handling.*  
*Do not eat, drink or smoke when using this product.*  
*Use only outdoors or in a well-ventilated area.*  
*Wear protective gloves / protective clothing.*  
*IF SWALLOWED: Immediately call a POISON CENTER/ doctor.*  
*IF ON SKIN: Wash with plenty of water.*  
*IF INHALED: Remove person to fresh air and keep comfortable for breathing.*  
*Call a POISON CENTER/doctor.*  
*Call a POISON CENTER/doctor if you feel unwell.*  
*Specific treatment (see on this label).*  
*Rinse mouth.*  
*Take off immediately all contaminated clothing and wash it before reuse.*  
*Store in a well-ventilated place. Keep container tightly closed.*  
*Store locked up.*  
*Dispose of contents/container in accordance with local/regional/national/international regulations.*

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· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

### 16 Other information

*This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.*

· **Department issuing SDS:** Environment protection department.

· **Contact:**

· **Date of preparation / last revision**

Creation date for SDS 02-17-2014. STN

10-02-2017: review SDS for accuracy. STN

10/02/2017 / -

· **Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

BEI: Biological Exposure Limit

Acute Tox. 3: Acute toxicity – Category 3