SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier
- Trade name: AMMONIUM FLUORIDE (Solution 36 %)
- Chemical Name: Aqueous solution of ammonium fluoride 36 %
- Molecular formula: NH4F

1.2 Relevant identified uses of the substance or mixture and uses advised against

Uses of the Substance / Mixture
- Etching agent
- Electronic industry

1.3 Details of the supplier of the safety data sheet

Company
DEEP SOUTH CHEMICAL, INC.
229 Millstone Road
Broussard, LA 70518
USA
Tel: +1-337-837-9931
Fax: +1-337-837-9565

1.4 Emergency telephone
FOR EMERGENCIES INVOLVING A SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT CONTACT: CHEMTREC 800-424-9300 within the United States and Canada, or 703-527-3887 for international collect calls.

SECTION 2: Hazards identification

Although OSHA has not adopted the environmental portion of the GHS regulations, this document may include information on environmental effects.

2.1 Classification of the substance or mixture

HCS 2012 (29 CFR 1910.1200)
- Acute toxicity, Category 3: H301: Toxic if swallowed.
- Acute toxicity, Category 3: H331: Toxic if inhaled.
- Acute toxicity, Category 3: H311: Toxic in contact with skin.
- Serious eye damage, Category 1: H318: Causes serious eye damage.

2.2 Label elements

HCS 2012 (29 CFR 1910.1200)

Pictogram

Signal Word
- Danger

Hazard Statements
- H301 + H311 + H331: Toxic if swallowed, in contact with skin or if inhaled.
- H318: Causes serious eye damage.
Precautionary Statements

Prevention
- P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.
- P264 Wash skin thoroughly after handling.
- P270 Do not eat, drink or smoke when using this product.
- P271 Use only outdoors or in a well-ventilated area.
- P280 Wear protective gloves/ face protection.
- P280 Wear protective gloves/ protective clothing.

Response
- P301 + P310 + P330 IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician. Rinse mouth.
- P302 + P352 + P312 IF ON SKIN: Wash with plenty of soap and water. Call a POISON CENTER or doctor/ physician if you feel unwell.
- P304 + P340 + P311 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/ physician.
- P305 + P351 + P338 + P310 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.
- P361 Remove/Take off immediately all contaminated clothing.
- P363 Wash contaminated clothing before reuse.

Storage
- P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
- P405 Store locked up.

Disposal
- P501 Dispose of contents/ container to an approved waste disposal plant.

2.3 Other hazards which do not result in classification
- H402: Harmful to aquatic life.
- Toxic by inhalation, in contact with skin and if swallowed.
- Irritating to eyes, respiratory system and skin.
- Hazardous decomposition products formed under fire conditions.
- Hydrogen fluoride

SECTION 3: Composition/information on ingredients

3.1 Substance
- Not applicable, this product is a mixture.

3.2 Mixture
- Formula NH4F

Hazardous Ingredients and Impurities

<table>
<thead>
<tr>
<th>Substance/Impurity</th>
<th>Identification number CAS-No.</th>
<th>Concentration [%]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium fluoride ((NH4)F)</td>
<td>12125-01-8</td>
<td>36</td>
</tr>
</tbody>
</table>

SECTION 4: First aid measures

4.1 Description of first-aid measures
SAFETY DATA SHEET

AMMONIUM FLUORIDE (Solution 36 %)

Revision Date 04/20/2015

In case of inhalation
- In case of accident by inhalation: remove casualty to fresh air and keep at rest.
- Oxygen or artificial respiration if needed.
- Victim to lie down in the recovery position, cover and keep him warm.
- Consult a physician.

In case of skin contact
- Take off contaminated clothing and shoes immediately.
- Wash off with plenty of water.
- Immediately apply calcium gluconate gel 2.5% and massage into the affected area using rubber gloves; continue to massage while repeatedly applying gel until 15 minutes after pain is relieved.
- Consult a physician.

In case of eye contact
- Immediate medical attention is required.

In case of ingestion
- Call a physician immediately.
- Take victim immediately to hospital.
- If victim is conscious:
  - If swallowed, rinse mouth with water (only if the person is conscious).
  - Give to drink a 1% aqueous calcium gluconate solution.
  - Do NOT induce vomiting.
  - Artificial respiration and/or oxygen may be necessary.
- If victim is unconscious:
  - Oxygen or artificial respiration if needed.

4.2 Most important symptoms and effects, both acute and delayed
- no data available

4.3 Indication of any immediate medical attention and special treatment needed
- no data available

SECTION 5: Firefighting measures

Flash point
- The product is not flammable.

Autoignition temperature
- no data available

Flammability / Explosive limit
- no data available

5.1 Extinguishing media

Suitable extinguishing media
- Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media
- None.

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire fighting
- Not combustible.
AMMONIUM FLUORIDE (Solution 36 %)

- Hazardous decomposition products formed under fire conditions.

**Hazardous combustion products:**
- Gaseous hydrogen fluoride (HF).
- Ammonia
- Nitrogen oxides (NOx)

5.3 Advice for firefighters

**Special protective equipment for fire-fighters**
- Wear self-contained breathing apparatus and protective suit.

**Further information**
- Cool containers/tanks with water spray.
- Keep from any possible contact with water.
- Approach from upwind.
- Suppress (knock down) gases/vapors/mists with a water spray Jet.
- After the fire, proceed rapidly with cleaning of surfaces exposed to the fumes in order to limit equipment damage.

### SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

**Advice for non-emergency personnel**
- Prevent further leakage or spillage if safe to do so.
- Keep away from incompatible products

**Advice for emergency responders**
- Immediately evacuate personnel to safe areas.
- Keep people away from and upwind of spill/leak.
- Wear self-contained breathing apparatus and protective suit.
- Vapors are heavier than air and can cause suffocation by reducing oxygen available for breathing.
- Suppress (knock down) gases/vapors/mists with a water spray Jet.
- Avoid spraying the leak source.
- Ventilate the area.

6.2 Environmental precautions
- If the product contaminates rivers and lakes or drains inform respective authorities.
- Do not flush into surface water or sanitary sewer system.

6.3 Methods and materials for containment and cleaning up
- Dam up.
- Soak up with inert absorbent material.
- Prevent product from entering sewage system.
- Keep in properly labeled containers.
- Keep in suitable, closed containers for disposal.
- Treat recovered material as described in the section “Disposal considerations”.

6.4 Reference to other sections
- Refer to protective measures listed in sections 7 and 8.
SECTION 7: Handling and storage

7.1 Precautions for safe handling
- Used in closed system
- Handle small quantities under a lab hood.
- Use only in well-ventilated areas.
- Use only equipment and materials which are compatible with the product.
- Transfer using a pump equipped for collection and return of gas/vapor.
- For further information, please contact:
  - Manufacturer, importer, supplier
  - Keep away from incompatible products

Hygiene measures
- Use only in an area equipped with a safety shower.
- Take off contaminated clothing and shoes immediately.
- Wash contaminated clothing before re-use.
- Handle in accordance with good industrial hygiene and safety practice.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/Storage conditions
- Keep container tightly closed.
- Keep in a cool, well-ventilated place.
- Keep away from heat.
- Keep in a contained area
- Keep away from heat/sparks/open flames/hot surfaces. No smoking.
- Refer to protective measures listed in sections 7 and 8.
- Keep away from:
  - Incompatible products

Packaging material

Suitable material
- Polyethylene

7.3 Specific end use(s)
- Contact your supplier for additional information

SECTION 8: Exposure controls/personal protection

Introductory Remarks: These recommendations provide general guidance for handling this product. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. Assistance with selection, use and maintenance of worker protection equipment is generally available from equipment manufacturers.

8.1 Control parameters

Components with workplace occupational exposure limits

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Value type</th>
<th>Value</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium fluoride ((NH4)F)</td>
<td>TWA</td>
<td>2.5 mg/m3</td>
<td>Occupational Safety and Health Administration</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Table Z-1 Limits for Air Contaminants</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- CAS number varies with compound Expressed as : Fluorine</td>
</tr>
<tr>
<td>Ammonium fluoride ((NH4)F)</td>
<td>TWA</td>
<td>2.5 mg/m3</td>
<td>American Conference of Governmental Industrial Hygienists</td>
</tr>
</tbody>
</table>
SAFETY DATA SHEET

AMMONIUM FLUORIDE (Solution 36 %) 04/20/2015

Expressed as : Fluorine

NIOSH IDLH (Immediately Dangerous to Life or Health Concentrations)

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>CAS-No.</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium fluoride ((NH₄)F)</td>
<td>12125-01-8</td>
<td>250 milligram per cubic meter</td>
</tr>
</tbody>
</table>

Biological Exposure Indices

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Value type</th>
<th>Value</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium fluoride ((NH₄)F)</td>
<td>BEI</td>
<td>2 mg/l Fluoride Urine Prior to shift (16 hours after exposure ceases)</td>
<td>American Conference of Governmental Industrial Hygienists</td>
</tr>
<tr>
<td>Ammonium fluoride ((NH₄)F)</td>
<td>BEI</td>
<td>3 mg/l Fluoride Urine End of shift (As soon as possible after exposure ceases)</td>
<td>American Conference of Governmental Industrial Hygienists</td>
</tr>
</tbody>
</table>

8.2 Exposure controls

Control measures

Engineering measures
- Provide appropriate exhaust ventilation at machinery.
- Apply technical measures to comply with the occupational exposure limits.
- Refer to protective measures listed in sections 7 and 8.

Individual protection measures

Respiratory protection
- Self-contained breathing apparatus in confined spaces/insufficient oxygen/in case of large uncontrolled emissions/in all circumstances when the mask and cartridge do not give adequate protection.
- Use only respiratory protection that conforms to international/ national standards.
- In case of decomposition (see Section 10), wear a suitable respirator with a combination filter for organic vapor and particulate.
- Use NIOSH approved respiratory protection.
- In the case of dust or aerosol formation use respirator with an approved filter.

Hand protection
- Take note of the information given by the producer concerning permeability and break through times, and of special workplace conditions (mechanical strain, duration of contact).

Suitable material
- Neoprene
- PVC
- Nitrile rubber
- Natural Rubber

Eye protection
- Goggles
- If splashes are likely to occur, wear:
  - Face-shield
SAFETY DATA SHEET

AMMONIUM FLUORIDE (Solution 36 %)

Skin and body protection
- Chemical resistant apron
- If splashes are likely to occur, wear:
  - Rubber or plastic apron
  - Rubber or plastic boots

Hygiene measures
- Use only in an area equipped with a safety shower.
- Take off contaminated clothing and shoes immediately.
- Wash contaminated clothing before re-use.
- Handle in accordance with good industrial hygiene and safety practice.

SECTION 9: Physical and chemical properties

Physical and Chemical properties here represent typical properties of this product. Contact the business area using the Product information phone number in Section 1 for its exact specifications.

9.1 Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>liquid</td>
</tr>
<tr>
<td>Color</td>
<td>colorless</td>
</tr>
<tr>
<td>Odor</td>
<td>amine-like</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>no data available</td>
</tr>
<tr>
<td>pH</td>
<td>7.2</td>
</tr>
<tr>
<td>Freezing point</td>
<td>ca. 32 °F (0 °C)</td>
</tr>
<tr>
<td>Boiling point/boiling range</td>
<td>&gt; 212 °F (&gt; 100 °C)</td>
</tr>
<tr>
<td>Flash point</td>
<td>The product is not flammable.</td>
</tr>
<tr>
<td>Evaporation rate (Butylacetate = 1)</td>
<td>no data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flammability (liquids)</td>
<td>The product is not flammable.</td>
</tr>
<tr>
<td>Flammability / Explosive limit</td>
<td>Explosiveness: Not applicable</td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>no data available</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>no data available</td>
</tr>
<tr>
<td>Vapor density</td>
<td>no data available</td>
</tr>
<tr>
<td>Density</td>
<td>Bulk density: Not applicable</td>
</tr>
</tbody>
</table>
SAFETY DATA SHEET

AMMONIUM FLUORIDE (Solution 36 %)

Relative density: 1.1

Solubility
Water solubility:
completely miscible

Partition coefficient: n-octanol/water Not applicable

Thermal decomposition ca. 212 °F (100 °C)

Viscosity no data available

Explosive properties no data available

Oxidizing properties Not applicable

9.2 Other information
Molecular weight 37 g/mol

SECTION 10: Stability and reactivity

10.1 Reactivity
- May be corrosive to metals.

10.2 Chemical stability
- Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
- no data available

10.4 Conditions to avoid
- Heat.

10.5 Incompatible materials
- glass
- Metals
- Oxidizing agents
- Strong bases
- Strong acids

10.6 Hazardous decomposition products
- Gaseous hydrogen fluoride (HF).
- Ammonia
- Nitrogen oxides (NOx)
SECTION 11: Toxicological information

11.1 Information on toxicological effects

**Acute toxicity**

**Acute oral toxicity**
Ammonium fluoride ((NH₄)F)  
LD₅₀: 200 - 2,000 mg/kg - Rat, male and female  
Method: OECD Test Guideline 401  
This product is classified as acute toxicity category 3  
Unpublished reports

**Acute inhalation toxicity**
Ammonium fluoride ((NH₄)F)  
By analogy  
- 4 h: - Rat, male and female  
Method: OECD Test Guideline 403  
This product is classified as acute toxicity category 3  
Unpublished reports

**Acute dermal toxicity**
Ammonium fluoride ((NH₄)F)  
This product is classified as acute toxicity category 3  
Expert Judgment

**Acute toxicity (other routes of administration)**
No data available

**Skin corrosion/irritation**
Ammonium fluoride ((NH₄)F)  
By analogy  
Rabbit  
Not classified as irritating to skin  
Method: according to a standardized method  
Unpublished reports

**Serious eye damage/eye irritation**
Ammonium fluoride ((NH₄)F)  
By analogy  
Rabbit  
Risk of serious damage to eyes.  
Method: according to a standardized method  
Unpublished reports

**Respiratory or skin sensitization**
Ammonium fluoride ((NH₄)F)  
By analogy  
Buehler Test - Guinea pig  
Does not cause skin sensitization.  
Method: according to a standardized method  
Unpublished reports
SAFETY DATA SHEET

AMMONIUM FLUORIDE (Solution 36 %)

Date 04/20/2015

Mutagenicity

Genotoxicity in vitro

Ammonium fluoride ((NH4)F) By analogy

Ames test

ambiguous
Published data
Unpublished reports

By analogy

Chromosome aberration test in vitro

ambiguous
Published data
Unpublished reports

By analogy

Gene mutation assays in mammalian cells.

ambiguous
Published data
Unpublished reports

Genotoxicity in vivo

Test substance: Sodium fluoride

In vivo tests did not show mutagenic effects

Carcinogenicity

Ammonium fluoride ((NH4)F) By analogy

Rat

Oral

The product is not considered to be carcinogenic.

Published data
Unpublished reports

Mouse

Oral

The product is not considered to be carcinogenic.

Published data
Unpublished reports

This product does not contain any ingredient designated as probable or suspected human carcinogens by:

NTP
IARC
OSHA
ACGIH
SAFETY DATA SHEET

AMMONIUM FLUORIDE (Solution 36 %)  

Date 04/20/2015

Toxicity for reproduction and development

Toxicity to reproduction / fertility  
Rat  
NOAEL parent: 10 - 14 mg/kg  
Test substance: Sodium fluoride

Developmental Toxicity/Teratogenicity  
Ammonium fluoride ((NH4)F)  
By analogy  
Rabbit  
Application Route: Oral  
The product is not considered to be toxic for development.  
Published data  
Unpublished reports  
Rat  
Application Route: Oral  
The product is not considered to be toxic for development.  
Published data  
Unpublished reports

STOT  

STOT-single exposure  
Ammonium fluoride ((NH4)F)  
The substance or mixture is not classified as specific target organ toxicant, single exposure.  
internal evaluation

STOT-repeated exposure  
Oral - Mouse  
LOAEL: 50 ppm  
Test substance: Sodium fluoride  
Target Organs: Skeleton

Inhalation - Rat  
NOAEL: 880 ppm  
Test substance: Sodium fluoride  
Target Organs: Respiratory Tract, Bone, Teeth

Aspiration toxicity  
no data available

Further information  
According to concentration, aqueous solution causes irritation or burns of eyes, skin and mucous membranes.  
Information given is based on data obtained from similar substances.  
Other dangerous properties can not be excluded.  
Liver and kidney injuries may occur.  
Chronic exposure may entail dental or skeletal fluorosis  
The carcinogenic effect is not demonstrated in human risk of effect to:  
toxic effects for reproduction  
no data available
SECTION 12: Ecological information

12.1 Toxicity

**Aquatic Compartment**

Acute toxicity to fish
- Sodium fluoride
  - LC50 - 96 h: 51 mg/l - Fishes, Salmo gairdneri
  - Static test
  - Fresh water

Acute toxicity to daphnia and other aquatic invertebrates.
- Sodium fluoride
  - EC50 - 48 h: 26 mg/l - Daphnia magna (Water flea)
    - Fresh water
  - EC50 - 96 h: 10.5 mg/l - Daphnia magna (Water flea)
    - Salt water

Chronic toxicity to fish
- Sodium fluoride
  - NOEC: 4 mg/l - 21 Days - Oncorhynchus mykiss (rainbow trout)
    - Static test
    - Fresh water

Chronic toxicity to daphnia and other aquatic invertebrates.
- Sodium fluoride
  - NOEC: 8.9 mg/l - 21 Days - Daphnia magna (Water flea)
    - Static test
    - Fresh water

12.2 Persistence and degradability

**Abiotic degradation**

- Stability in water: Medium, Water, Soil, ionization/neutralization
- Photodegradation: Medium, Water, Soil, complexation/precipitation of inorganic materials
- Neutralization by natural alkalinity: Medium
- Air

**Biodegradation**

- Biodegradability: The methods for determining the biological degradability are not applicable to inorganic substances.

12.3 Bioaccumulative potential

- Bioconcentration factor (BCF): Does not bioaccumulate.
SAFETY DATA SHEET

AMMONIUM FLUORIDE (Solution 36 %)

Date 04/20/2015

12.4 Mobility in soil

Adsorption potential (Koc)  Water
Solubility(ies)  Mobility
Soil/sediments  
potential adsorption  pH
fluorides  

Air  
mobility as solid aerosols

12.5 Results of PBT and vPvB assessment  no data available

12.6 Other adverse effects  no data available

Ecotoxicity assessment

Acute aquatic toxicity  
sodium fluoride  Harmful to aquatic organisms.

Chronic aquatic toxicity  
sodium fluoride  

Remarks  Ecological data therefore refers only to the effects of the decomposition products.,
Product fate is highly dependent on environmental conditions: pH, temperature,
redox potential, mineral and organic content of the medium ....

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product Disposal

- In accordance with local and national regulations.
- Where possible recycling is preferred to disposal or incineration.
- Can be incinerated, when in compliance with local regulations.
- The incinerator must be equipped with a system for the neutralization or recovery of HF.
SAFETY DATA SHEET

AMMONIUM FLUORIDE (Solution 36 %)  Date  04/20/2015

Waste Code
- Environmental Protection Agency
- Hazardous Waste – YES
- RCRA Hazardous Waste (40 CFR 302)
- D002 - Corrosive waste – (C)

Advice on cleaning and disposal of packaging
- Clean container with water.
- The empty and clean containers are to be reused in conformity with regulations.
- To avoid treatments, as far as possible, use dedicated containers.
- Can be landfilled or incinerated, when in compliance with local regulations.
- This material and its container must be disposed of as hazardous waste.

SECTION 14: Transport information

Transportation status: IMPORTANT! Statements below provide additional data on listed transport classification.
The listed Transportation Classification does not address regulatory variations due to changes in package size, mode of shipment or other regulatory descriptors.

DOT
14.1 UN number  UN 2505
14.2 Proper shipping name  AMMONIUM FLUORIDE (Ammonium fluoride)
14.3 Transport hazard class  6.1  Label(s)  6.1
14.4 Packing group  Packing group  III  ERG No  154
14.5 Environmental hazards  Marine pollutant  NO

TDG
14.1 UN number  UN 3287
14.2 Proper shipping name  TOXIC LIQUID, INORGANIC, N.O.S. (Ammonium fluoride)
14.3 Transport hazard class  6.1  Label(s)  6.1
14.4 Packing group  Packing group  III  ERG No  151
14.5 Environmental hazards  Marine pollutant  NO

NOM
no data available
SAFETY DATA SHEET

AMMONIUM FLUORIDE (Solution 36 %)  

Date 04/20/2015

IMDG

14.1 UN number  
UN 3287

14.2 Proper shipping name  
TOXIC LIQUID, INORGANIC, N.O.S. (Ammonium fluoride)

14.3 Transport hazard class  
6.1

Label(s)  
6.1

14.4 Packing group  
Packing group III

14.5 Environmental hazards  
Marine pollutant  
NO

14.6 Special precautions for user  
EmS  
F-A , S-A

For personal protection see section 8.

IATA

14.1 UN number  
UN 3287

14.2 Proper shipping name  
TOXIC LIQUID, INORGANIC, N.O.S. (Ammonium fluoride)

14.3 Transport hazard class  
6.1

Label(s):  
6.1

14.4 Packing group  
Packing group III

Packing instruction (cargo aircraft)  
663

Max net qty / pkg  
220.00 L

Packing instruction (passenger aircraft)  
655

Max net qty / pkg  
60.00 L

14.5 Environmental hazards  
NO

14.6 Special precautions for user  
For personal protection see section 8.

Note: The above regulatory prescriptions are those valid on the date of publication of this sheet. Given the possible evolution of transportation regulations for hazardous materials, it would be advisable to check their validity with your sales office.
SECTION 15: Regulatory information

15.1 Notification status

<table>
<thead>
<tr>
<th>Inventory Information</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States TSCA Inventory</td>
<td>Listed on Inventory</td>
</tr>
<tr>
<td>New Zealand. Inventory of Chemical Substances</td>
<td>In compliance with the inventory</td>
</tr>
<tr>
<td>Canadian Domestic Substances List (DSL)</td>
<td>Listed on Inventory</td>
</tr>
<tr>
<td>Australia Inventory of Chemical Substances (AICS)</td>
<td>Listed on Inventory</td>
</tr>
<tr>
<td>Japan. CSCL - Inventory of Existing and New Chemical Substances</td>
<td>Listed on Inventory</td>
</tr>
<tr>
<td>Korea. Korean Existing Chemicals Inventory (KECI)</td>
<td>Listed on Inventory</td>
</tr>
<tr>
<td>China. Inventory of Existing Chemical Substances in China (IECSC)</td>
<td>Listed on Inventory</td>
</tr>
<tr>
<td>Philippines Inventory of Chemicals and Chemical Substances (PICCS)</td>
<td>Listed on Inventory</td>
</tr>
</tbody>
</table>

15.2 Federal Regulations

US. EPA EPCRA SARA Title III

SARA HAZARD DESIGNATION SECTIONS 311/312 (40 CFR 370)

<table>
<thead>
<tr>
<th>Hazard</th>
<th>Reportable Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire Hazard</td>
<td>no</td>
</tr>
<tr>
<td>Reactivity Hazard</td>
<td>no</td>
</tr>
<tr>
<td>Sudden Release of Pressure Hazard</td>
<td>no</td>
</tr>
<tr>
<td>Acute Health Hazard</td>
<td>yes</td>
</tr>
<tr>
<td>Chronic Health Hazard</td>
<td>no</td>
</tr>
</tbody>
</table>

Section 313 Toxic Chemicals (40 CFR 372.65)
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Section 302 Emergency Planning Extremely Hazardous Substance Threshold Planning Quantity (40 CFR 355)
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

Section 302 Emergency Planning Extremely Hazardous Substance Reportable Quantity (40 CFR 355)
This material does not contain any components with a SARA 302 RQ.

Section 304 Emergency Release Notification Reportable Quantity (40 CFR 355)
This material does not contain any components with a section 304 EHS RQ.

US. EPA CERCLA Hazardous Substances and Reportable Quantities (40 CFR 302.4)

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>CAS-No.</th>
<th>Reportable quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium fluoride ((NH4)F)</td>
<td>12125-01-8</td>
<td>100 lb</td>
</tr>
</tbody>
</table>

15.3 State Regulations

US. California Safe Drinking Water & Toxic Enforcement Act (Proposition 65)
This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.
SAFETY DATA SHEET

AMMONIUM FLUORIDE (Solution 36 %)  

Date 04/20/2015

SECTION 16: Other information

**NFPA (National Fire Protection Association) - Classification**

<table>
<thead>
<tr>
<th>Category</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
<td>3 serious</td>
</tr>
<tr>
<td>Flammability</td>
<td>0 minimal</td>
</tr>
<tr>
<td>Instability or Reactivity</td>
<td>0 minimal</td>
</tr>
<tr>
<td>Special Notices</td>
<td>None</td>
</tr>
</tbody>
</table>

**HMIS (Hazardous Materials Identification System (Paint & Coating)) - Classification**

<table>
<thead>
<tr>
<th>Category</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
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</tr>
<tr>
<td>Flammability</td>
<td>0 minimal</td>
</tr>
<tr>
<td>Reactivity</td>
<td>0 minimal</td>
</tr>
<tr>
<td>PPE</td>
<td>Determined by User; dependent on local conditions</td>
</tr>
</tbody>
</table>

**Further information**

- Product evaluated under the US GHS format.

**Date Prepared:** 04/20/2015

**Key or legend to abbreviations and acronyms used in the safety data sheet**

- TWA = 8-hour, time-weighted average
- ACGIH = American Conference of Governmental Industrial Hygienists
- OSHA = Occupational Safety and Health Administration
- NTP = National Toxicology Program
- IARC = International Agency for Research on Cancer
- NIOSH = National Institute for Occupational Safety and Health

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information, and belief at the date of its publication. Such information is only given as a guidance to help the user handle, use, process, store, transport, dispose, and release the product in satisfactory safety conditions and is not to be considered as a warranty or quality specification. It should be used in conjunction with technical sheets but do not replace them. Thus, the information only relates to the designated specific product and may not be applicable if such product is used in combination with other materials or in any other manufacturing process, unless otherwise specifically indicated. It does not release the user from ensuring he is in conformity with all regulations linked to its activity.