1. Identification

Material name: PAD ETCH 16:3:3 W/OHS, CPG GRADE

Issue date: 30-June-2014
Revision date: 15-September-2021
Supersedes date: 04-October-2018

Other means of identification
Spec ID: 100000002077
Synonyms: None.

Recommended use: Etchant used in semiconductor manufacturing.
Recommended restrictions: None known.

Supplier information
FUJIFILM Electronic Materials U.S.A., Inc.
80 Circuit Drive
North Kingstown RI 02852

Transportation Emergency:
FOR ALL TRANSPORTATION ACCIDENTS, CALL CHEMTREC: 1-800-424-9300
Medical Emergency (24HR):
FOR ANY HEALTH & MEDICAL EMERGENCY, 24 HOURS /7 DAYS CALL: 1-800-365-8951
Non-emergency Telephone:
FOR ALL SDS REQUESTS & QUESTIONS, CALL CUSTOMER SERVICE: 1-800-553-6546

SDS file: 10382_US_EN_V3.0
Replaces file: 10382_US_EN_V2.0

2. Hazard(s) identification

Physical hazards: Not classified.

Health hazards
- Acute toxicity, oral: Category 3
- Acute toxicity, dermal: Category 3
- Acute toxicity, inhalation: Category 3
- Skin corrosion/irritation: Category 1
- Serious eye damage/eye irritation: Category 1
- Specific target organ toxicity, repeated exposure (oral): Category 2 (Kidney)

OSHA defined hazards: Not classified.

Label elements

Signal word: Danger
Hazard statement: Toxic if swallowed. Toxic in contact with skin. Toxic if inhaled. Causes severe skin burns and eye damage. May cause damage to organs (Kidney) through prolonged or repeated exposure by ingestion.

Precautionary statement
Prevention: Wear protective gloves/protective clothing/eye protection/face protection. Do not breathe mist/vapors. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wash thoroughly after handling.

Response: If swallowed: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): 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. 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/doctor.

Storage: Store in a well-ventilated place. Keep container tightly closed. Store locked up.
Disposal
Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC)
None known.

Supplemental information
None.

3. Composition/information on ingredients

<table>
<thead>
<tr>
<th>Mixture</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium fluoride</td>
<td>12125-01-8</td>
<td>25 - 30</td>
</tr>
<tr>
<td>Phosphoric acid</td>
<td>7664-38-2</td>
<td>10 - 20</td>
</tr>
<tr>
<td>Ethylene glycol</td>
<td>107-21-1</td>
<td>10 - 15</td>
</tr>
</tbody>
</table>

The specific chemical identity and/or exact percentage of component(s) have been withheld as a trade secret.

Composition comments
All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

Inhalation
Immediately remove from further exposure. Get immediate medical assistance. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. Give supplemental oxygen, if available. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.

Skin contact
In case of accidents: Call an ambulance immediately! Remove contaminated clothes and rinse skin thoroughly with water for at least 15 minutes. Chemical burns must be treated by a physician.

Eye contact
Flush thoroughly with water for at least 15 minutes. Get immediate medical assistance. If medical assistance is not immediately available, flush an additional 15 minutes. Make sure to remove any contact lenses from the eyes before rinsing.

Ingestion
In case of ingestion: Call an ambulance immediately! Rinse mouth thoroughly with water and give large amounts of milk or water to people not unconscious. Do not induce vomiting. If vomiting occurs, the head should be kept low so that stomach vomit doesn't enter the lungs. Lay on the side.

Most important symptoms/effects, acute and delayed
Inhalation: Vapors may cause drowsiness and dizziness. Eye contact: Prolonged contact causes serious eye and tissue damage. Skin contact: May cause serious chemical burns to the skin.

Indication of immediate medical attention and special treatment needed
Treat symptomatically.

General information
Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media
Use fire-extinguishing media appropriate for surrounding materials.

Unsuitable extinguishing media
None.

Specific hazards arising from the chemical
During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters
Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace. Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire fighting equipment/instructions
Use standard firefighting procedures and consider the hazards of other involved materials. Containers close to fire should be removed or cooled with water.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures
Avoid any exposure. If leakage cannot be stopped, evacuate area. Wear suitable protective clothing. See Section 8 of the SDS for Personal Protective Equipment.

Methods and materials for containment and cleaning up
Absorb spillage with suitable absorbent material. Collect in containers and seal securely. For waste disposal, see Section 13 of the SDS.

Environmental precautions
Avoid discharge into drains, water courses or onto the ground unless authorized by permit.

7. Handling and storage

Precautions for safe handling
Should be handled in closed systems, if possible. Avoid any exposure. Wear approved safety goggles. Wear protective gloves and appropriate clothing to prevent skin contact. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities
Store in closed original container in a dry place. Store above 21°C. Store away from incompatible materials.
8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium fluoride (CAS 12125-01-8)</td>
<td>PEL</td>
<td>2.5 mg/m3</td>
</tr>
<tr>
<td>Phosphoric acid (CAS 7664-38-2)</td>
<td>PEL</td>
<td>1 mg/m3</td>
</tr>
</tbody>
</table>

US. OSHA Table Z-2 (29 CFR 1910.1000)

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium fluoride (CAS 12125-01-8)</td>
<td>TWA</td>
<td>2.5 mg/m3</td>
<td>Dust</td>
</tr>
</tbody>
</table>

US. ACGIH Threshold Limit Values

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium fluoride (CAS 12125-01-8)</td>
<td>TWA</td>
<td>2.5 mg/m3</td>
<td></td>
</tr>
<tr>
<td>Ethylene glycol (CAS 107-21-1)</td>
<td>STEL</td>
<td>10 mg/m3</td>
<td>Aerosol, inhalable.</td>
</tr>
<tr>
<td>Phosphoric acid (CAS 7664-38-2)</td>
<td>TWA</td>
<td>3 mg/m3</td>
<td>50 ppm Vapor fraction</td>
</tr>
<tr>
<td></td>
<td>STEL</td>
<td>25 ppm</td>
<td>Vapor fraction</td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>1 mg/m3</td>
<td></td>
</tr>
</tbody>
</table>

US. NIOSH: Pocket Guide to Chemical Hazards

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium fluoride (CAS 12125-01-8)</td>
<td>TWA</td>
<td>2.5 mg/m3</td>
</tr>
<tr>
<td>Phosphoric acid (CAS 7664-38-2)</td>
<td>STEL</td>
<td>3 mg/m3</td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>1 mg/m3</td>
</tr>
</tbody>
</table>

Biological limit values

<table>
<thead>
<tr>
<th>Components</th>
<th>Value</th>
<th>Determinant</th>
<th>Specimen</th>
<th>Sampling Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium fluoride (CAS 12125-01-8)</td>
<td>3 mg/l</td>
<td>Fluoride</td>
<td>Urine</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>2 mg/l</td>
<td>Fluoride</td>
<td>Urine</td>
<td>*</td>
</tr>
</tbody>
</table>

* - For sampling details, please see the source document.

Appropriate engineering controls

If enclosed handling cannot be guaranteed, ventilation and protective clothing must be used.

Individual protection measures, such as personal protective equipment

Eye/face protection

Wear approved safety goggles.

Skin protection

Wear protective gloves impervious to the chemicals in use.

Hand protection

Also wear appropriate clothing to prevent any possibility of skin contact. Suitable items can be recommended by the protective equipment supplier or by a qualified industrial hygienist.

Respiratory protection

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. In the United States of America, if respirators are used, a program should be instituted to assure compliance with OSHA Standard 1910.134. Use a NIOSH/MSHA approved air purifying respirator as needed to control exposure. Consult with respirator manufacturer to determine respirator selection, use, and limitations. Use positive pressure, air-supplied respirator for uncontrolled releases or when air purifying respirator limitations may be exceeded. Follow respirator protection program requirements (OSHA 1910.134 and ANSI Z88.2) for all respirator use.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.
9. Physical and chemical properties

Appearance

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Liquid</td>
</tr>
<tr>
<td>Form</td>
<td>Liquid</td>
</tr>
<tr>
<td>Color</td>
<td>Colorless to pale yellow</td>
</tr>
<tr>
<td>Odor</td>
<td>Mild ammonia</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>4.6 - 7 (25°C)</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>50 °F (10 °C) / 10</td>
</tr>
<tr>
<td>Initial boiling point/bubbling range</td>
<td>No data available (not measured)</td>
</tr>
<tr>
<td>Flash point</td>
<td>Not applicable (the product is not flammable)</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>&lt; 1 (Water = 1)</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

Upper/lower flammability or explosive limits

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explosive limit - lower (%)</td>
<td>Not applicable (the product is not flammable)</td>
</tr>
<tr>
<td>Explosive limit - upper (%)</td>
<td>Not applicable (the product is not flammable)</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>No data available (not measured)</td>
</tr>
<tr>
<td>Vapor density</td>
<td>No data available (not measured)</td>
</tr>
<tr>
<td>Relative density</td>
<td>1.19 - 1.2</td>
</tr>
</tbody>
</table>

Solubility(ies)

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solubility (water)</td>
<td>Completely miscible in water.</td>
</tr>
<tr>
<td>Partition coefficient (n-octanol/water)</td>
<td>No data available (not measured)</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>Not applicable (the product is not flammable)</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available (not measured)</td>
</tr>
<tr>
<td>Viscosity</td>
<td>No data available (not measured)</td>
</tr>
</tbody>
</table>

Other information

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Density</td>
<td>1.19 - 1.2 g/cc</td>
</tr>
<tr>
<td>Kinematic viscosity</td>
<td>No data available (not measured)</td>
</tr>
<tr>
<td>Molecular weight</td>
<td>Not applicable (The product is a mixture)</td>
</tr>
<tr>
<td>Particle size</td>
<td>Not applicable (the material is a liquid)</td>
</tr>
<tr>
<td>Percent volatile</td>
<td>30 - 55 %</td>
</tr>
</tbody>
</table>

10. Stability and reactivity

Reactivity

Stable at normal conditions.

Chemical stability

Stable under normal temperature conditions.

Possibility of hazardous reactions

Will not occur.

Conditions to avoid

High temperatures.

Incompatible materials


Hazardous decomposition products


11. Toxicological information

Information on likely routes of exposure

<table>
<thead>
<tr>
<th>Route</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inhalation</td>
<td>Toxic if inhaled. Causes respiratory tract irritation. May cause central nervous system effects. High concentrations: May cause lung damage.</td>
</tr>
<tr>
<td>Skin contact</td>
<td>Toxic in contact with skin. Causes severe skin burns. The product contains components which may penetrate skin.</td>
</tr>
<tr>
<td>Eye contact</td>
<td>Causes serious eye damage.</td>
</tr>
<tr>
<td>Ingestion</td>
<td>Toxic if swallowed. Causes digestive tract irritation. May cause damage to the kidneys.</td>
</tr>
<tr>
<td>Symptoms related to the physical, chemical and toxicological characteristics</td>
<td>Inhalation: Vapors may cause drowsiness and dizziness. Eye contact: Prolonged contact causes serious eye and tissue damage. Skin contact: May cause serious chemical burns to the skin.</td>
</tr>
</tbody>
</table>

Information on toxicological effects
### Acute toxicity

Toxic if swallowed, in contact with skin or if inhaled.

<table>
<thead>
<tr>
<th>Components</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ammonium fluoride (CAS 12125-01-8)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Acute</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dermal</td>
<td>LD50</td>
<td>Rat</td>
</tr>
<tr>
<td>Inhalation</td>
<td>LC50</td>
<td>Rat</td>
</tr>
<tr>
<td>Oral</td>
<td>LD50</td>
<td>Rat</td>
</tr>
<tr>
<td><strong>Ethylene glycol (CAS 107-21-1)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Acute</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dermal</td>
<td>LD50</td>
<td>Mouse</td>
</tr>
<tr>
<td>Inhalation</td>
<td>LC50</td>
<td>Rat</td>
</tr>
<tr>
<td>Oral</td>
<td>LC50</td>
<td>Rat</td>
</tr>
<tr>
<td><strong>Phosphoric acid (CAS 7664-38-2)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Acute</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dermal</td>
<td>LD50</td>
<td>Rabbit</td>
</tr>
<tr>
<td>Oral</td>
<td>LC50</td>
<td>Rat</td>
</tr>
</tbody>
</table>

**Skin corrosion/irritation**
Causes severe skin burns.

**Serious eye damage/eye irritation**
Causes serious eye damage.

**Respiratory or skin sensitization**

<table>
<thead>
<tr>
<th>Sensitization</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Respiratory</td>
<td>Due to lack of data the classification is not possible.</td>
<td></td>
</tr>
<tr>
<td>Skin</td>
<td>Due to lack of data the classification is not possible.</td>
<td></td>
</tr>
</tbody>
</table>

**Germ cell mutagenicity**

Based on available data, the classification criteria are not met.

**Carcinogenicity**
Due to lack of data the classification is not possible.

**IARC Monographs. Overall Evaluation of Carcinogenicity**

<table>
<thead>
<tr>
<th>Substance</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium fluoride (CAS 12125-01-8)</td>
<td>3 Not classifiable as to carcinogenicity to humans.</td>
</tr>
</tbody>
</table>

**NTP Report on Carcinogens**
Not listed.

Not listed.

IARC: 1 = Carcinogenic to Humans; There is sufficient evidence of carcinogenicity in humans. 2A = Probably Carcinogenic to Humans; There is limited evidence of carcinogenicity in humans and sufficient evidence of carcinogenicity in experimental animals. 2B = Possibly Carcinogenic to Humans; There is limited evidence of carcinogenicity in humans and less than sufficient evidence of carcinogenicity in experimental animals. 3 = Not classifiable as to carcinogenicity to humans; The evidence of carcinogenicity is inadequate in humans and inadequate or limited in experimental animals. 4 = Probably not carcinogenic to humans; There is inadequate evidence of carcinogenicity in humans but evidence suggesting lack of carcinogenicity in experimental animals. Not listed = Not evaluated by IARC.

**Reproductive toxicity**
Due to lack of data the classification is not possible.

**Specific target organ toxicity - single exposure**
Due to lack of data the classification is not possible.

**Specific target organ toxicity - repeated exposure**
May cause damage to organs (Kidney) through prolonged or repeated exposure by ingestion.

**Aspiration hazard**
Based on available data, the classification criteria are not met.

**Chronic effects**
Prolonged overexposure to fluorides may increase fluoride content of bones and teeth, and may result in fluorosis, with motting of teeth (in children) and brittleness of bones. Absorbed fluoride can cause metabolic imbalances with irregular heartbeat, nausea, dizziness, vomiting and seizures. Risk of hypocalcemia with nervous problems (tetany) and cardiac arrhythmia. May cause lung damage. Ethylene glycol: Suspected carcinogen. Experimental teratogen. Human mutagenic data. Can cause cardiovascular effects.
12. Ecological information

**Ecotoxicity**

The product contains a substance which is toxic to aquatic organisms.

<table>
<thead>
<tr>
<th>Components</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium fluoride (CAS 12125-01-8)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Aquatic</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crustacea</td>
<td>EC50</td>
<td>Daphnia magna</td>
</tr>
<tr>
<td>Fish</td>
<td>LC50</td>
<td>Cyprinus carpio</td>
</tr>
<tr>
<td>Ethylene glycol (CAS 107-21-1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Aquatic</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crustacea</td>
<td>EC50</td>
<td>Daphnia magna</td>
</tr>
<tr>
<td>Fish</td>
<td>LC50</td>
<td>Pimephales promelas</td>
</tr>
<tr>
<td>Phosphoric acid (CAS 7664-38-2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Aquatic</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crustacea</td>
<td>EC50</td>
<td>Daphnia magna</td>
</tr>
<tr>
<td>Fish</td>
<td>LC50</td>
<td>Oryzias latipes</td>
</tr>
</tbody>
</table>

**Persistence and degradability**
The product contains inorganic compounds which are not biodegradable.

**Bioaccumulative potential**
The product is not expected to bioaccumulate.

**Octanol/water partition coefficient log Kow**

- Ammonium fluoride (CAS 12125-01-8) -4.37
- Ethylene glycol (CAS 107-21-1) -1.36

**Mobility in soil**
This product is miscible in water and may not disperse in soil.

**Other adverse effects**
This product contains one or more substances identified as hazardous air pollutants (HAPs) per the US Federal Clean Air Act (see section 15).

13. Disposal considerations

**Disposal instructions**
Disposal recommendations are based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

**Hazardous waste code**
Not regulated.

**Waste from residues / unused products**
Dispose of waste and residues in accordance with local authority requirements.

**Contaminated packaging**
Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

**DOT**

- **UN number**: UN1760
- **UN proper shipping name**: Corrosive liquids, n.o.s. (Ammonium fluoride, Phosphoric acid)
- **Transport hazard class(es)**
  - Class: 8
  - Subsidiary risk: -
  - Label(s): 8
- **Packing group**: III
- **Environmental hazards**: No
- **Marine pollutant**: No
- **Special precautions for user**: Read safety instructions, SDS and emergency procedures before handling.
- **Special provisions**: IB3, T7, TP1, TP28
- **Packaging exceptions**: 154
- **Packaging non bulk**: 203
- **Packaging bulk**: 241

**IATA**

- **UN number**: UN1760
- **UN proper shipping name**: Corrosive liquid, n.o.s. (Ammonium fluoride, Phosphoric acid)
- **Transport hazard class(es)**
  - Class: 8
  - Subsidiary risk: -
  - Label(s): Corrosive
- **Packing group**: III
- **Environmental hazards**: No
- **ERG Code**: 8L
- **Special precautions for user**: Read safety instructions, SDS and emergency procedures before handling.
IMDG

UN number UN1760
UN proper shipping name CORROSIVE LIQUID, N.O.S. (Ammonium fluoride, Phosphoric acid)
Transport hazard class(es)

Class 8
Subsidiary risk -
Packing group III
Environmental hazards
Marine pollutant No
EmS F-A, S-B

Special precautions for user
Read safety instructions, SDS and emergency procedures before handling.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

15. Regulatory information

US federal regulations

- This product is hazardous according to OSHA 29 CFR 1910.1200.
- TSCA Section 4(a) Final Test Rules & Testing Consent Orders: Not regulated.
- TSCA Section 5(e) PMN-Substance Consent Orders: Not regulated.
- SARA 311/312 Hazard categories: see Section 2 of the SDS.

Drug Enforcement Administration (DEA), List 1(i), Precursor Chemicals (21 CFR 1310.02(a) and 1310.04(f)(1))
- Not listed.
- TSCA Section 5(a)(2) Final Significant New Use Rules (SNURs)(40CFR 721, Subpt. E)
- Not regulated.
- TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
- Not regulated.

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List
- Ethylene glycol (CAS 107-21-1)

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: De minimis concentration
- Ammonium fluoride (CAS 12125-01-8) 1.0 %
- Ethylene glycol (CAS 107-21-1) 1.0 %

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Listed substance
- Ammonium fluoride (CAS 12125-01-8) Listed.
- Ethylene glycol (CAS 107-21-1) Listed.

CERCLA Hazardous Substances reportable quantity (lbs) (40 CFR 302.4)
- Ammonium fluoride (CAS 12125-01-8) 100
- Ethylene glycol (CAS 107-21-1) 5000
- Phosphoric acid (CAS 7664-38-2) 5000

Safe Drinking Water Act
Contains component(s) regulated under the Safe Drinking Water Act.

Drug Enforcement Administration (DEA) (21 CFR 1308.11-15)
Not controlled

Inventory status

<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Australian Inventory of Chemical Substances (AICS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Domestic Substances List (DSL)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Non-Domestic Substances List (NDSL)</td>
<td>No</td>
</tr>
<tr>
<td>United States &amp; Puerto Rico</td>
<td>Toxic Substances Control Act (TSCA) Inventory</td>
<td>Yes</td>
</tr>
</tbody>
</table>

All ingredients are TSCA compliant.

*A “Yes” indicates this product complies with the inventory requirements administered by the governing country(s).

State regulations

US. Massachusetts RTK - Substance List
- Ammonium fluoride (CAS 12125-01-8) Listed.
- Ethylene glycol (CAS 107-21-1) Listed.
- Phosphoric acid (CAS 7664-38-2) Listed.

US. New Jersey Worker and Community Right-to-Know Act
- Ammonium fluoride (CAS 12125-01-8)
- Ethylene glycol (CAS 107-21-1)
- Phosphoric acid (CAS 7664-38-2)
US. Pennsylvania Worker and Community Right-to-Know Law
Ammonium fluoride (CAS 12125-01-8)
Ethylene glycol (CAS 107-21-1)
Phosphoric acid (CAS 7664-38-2)

US. Rhode Island RTK
Ammonium fluoride (CAS 12125-01-8) Listed.
Ethylene glycol (CAS 107-21-1) Listed.
Phosphoric acid (CAS 7664-38-2) Listed.

California Proposition 65

**WARNING:** This product can expose you to Ethylene glycol, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.
Not applicable for industrial use.

California Proposition 65 - CRT: Listed date/Developmental toxin
Ethylene glycol (CAS 107-21-1) Listed: June 19, 2015
US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))
Ethylene glycol (CAS 107-21-1)
Phosphoric acid (CAS 7664-38-2)

16. Other information, including date of preparation or last revision
Further information
HMIS® is a registered trade and service mark of the ACA.
G - Safety Glasses, Gloves, Vapor Respirator

HMIS® ratings
Health: 3*
Flammability: 0
Physical hazard: 0

NFPA ratings
Health: -
Flammability: -
Instability: -

List of abbreviations
LD50: Lethal Dose 50%.
LC50: Lethal Concentration 50%.
EC50: Effective Concentration 50%.

Disclaimer
THIS SAFETY DATA SHEET (SDS) HAS BEEN PREPARED IN COMPLIANCE WITH THE FEDERAL OSHA HAZARD COMMUNICATION STANDARD, 29 CFR 1910.1200. THE INFORMATION IN THIS SDS SHOULD BE PROVIDED TO ALL WHO WILL USE, HANDLE, STORE, TRANSPORT, OR OTHERWISE BE EXPOSED TO THIS PRODUCT. THIS INFORMATION HAS BEEN PREPARED FOR THE GUIDANCE OF PLANT ENGINEERING, OPERATIONS AND MANAGEMENT AND FOR PERSONS WORKING WITH OR HANDLING THIS PRODUCT. FUJIFILM ELECTRONIC MATERIALS BELIEVES THIS INFORMATION TO BE RELIABLE AND UP TO DATE AS OF THE DATE OF PUBLICATION BUT, MAKES NO WARRANTY THAT IT IS. ADDITIONALLY, IF THIS SDS IS MORE THAN THREE YEARS OLD, YOU SHOULD CONTACT FUJIFILM ELECTRONIC MATERIALS AT THE PHONE NUMBER 1-800-553-6546 (CUSTOMER SERVICE) TO MAKE CERTAIN THAT THIS DOCUMENT IS CURRENT.

This SDS contains revisions in the following section(s):
1, 3, 9, 11, 12, 15, 16.

SDS file
10382_US_EN_V3.0
Replaces file
10382_US_EN_V2.0