



SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT: FluoroPel™ PFC600A

MANUFACTURER: Cytonix Corporation

ADDRESS and PHONE: Cytonix Corporation, 8000 Virginia Manor Road, Beltsville, MD 20705,
phone 301-470-6267, fax 301-470-6269

REVISION DATE: 2/24/09

PRODUCT USE: Protective Barrier or liquid repellent Coating.

SECTION 2: INGREDIENTS

INGREDIENT	Wt%	C.A.S. NUMBER
METHYL NONAFLUOROISOBUTYL ETHER	20-80	163702-08-7
METHYL NONAFLUROBUTYL ETHER	20-80	163702-07-6
FLUROALIPHATIC POLYMER	1-33	PROPRIETARY

SECTION 3: HAZARDS IDENTIFICATION

3.1 EMERGENCY OVERVIEW

Specific Physical Form: liquid

Odor, Color, Grade: clear, colorless, with slight ethereal odor.

General Physical Form: Liquid

Immediate health, physical, and environmental hazards:

3.2 POTENTIAL HEALTH EFFECTS

Eye Contact: Contact with the eyes during product use is not expected to result in significant irritation.

Skin Contact: Contact with the skin during product use is not expected to result in significant irritation.

Inhalation: Thermal decomposition products may be harmful if inhaled.

Ingestion: No health effects are expected.

3.3 POTENTIAL ENVIRONMENTAL EFFECTS

This product comprises chemicals that may be resistant to biodegradation in the environment. Take precautions to prevent direct release of this product to the environment. Environmental data have not been determined for the fluoroaliphatic polymer.

SECTION 4: FIRST AID MEASURES

4.1 FIRST AID PROCEDURES

The following first aid recommendations are based on an assumption that appropriate personal and industrial hygiene practices are followed:

Eye Contact: Flush eyes with large amounts of water. If signs/symptoms persist, get medical attention.

Skin Contact: Wash affected area with soap and water. If signs/symptoms develop, get medical attention.

Inhalation: If signs/symptoms develop, remove person to fresh air. If signs/symptoms persist, get medical attention.

If Swallowed: If signs/symptoms develop, get medical attention. No need for first aid is anticipated.

SECTION 5: FIRE FIGHTING MEASURES

5.1 FLAMMABLE PROPERTIES

Autoignition temperature 405 °C [ASTM E659-84]

Flash Point *Not Applicable*

Flammable Limits - LEL None [ASTM E681-94, @100 C]

Flammable Limits - UEL None [ASTM E681-94, @100 C]

5.2 EXTINGUISHING MEDIA

Material will not burn.

5.3 PROTECTION OF FIRE FIGHTERS

Special Fire Fighting Procedures: Water may be used to blanket the fire. Exposure to extreme heat can give rise to thermal decomposition. Wear full protective equipment and a self-contained breathing apparatus.

Unusual Fire and Explosion Hazards: No unusual fire or explosion hazards are anticipated. Avoid breathing the products and substances that may result from the thermal decomposition of the product or the other substances in the fire zone.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Accidental Release Measures: Observe precautions from other sections. Evacuate unprotected and untrained personnel from hazard area. The spill should be cleaned up by qualified personnel. Ventilate the area with fresh air. Contain spill. Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Clean up residue with an appropriate organic solvent. Place in a metal container approved for transportation by appropriate authorities. Seal the container. Dispose of collected material as soon as possible.

SECTION 7: HANDLING AND STORAGE

7.1 HANDLING

Avoid skin contact with hot material. For industrial or professional use only. Contents may be under pressure, open carefully. Store work clothes separately from other clothing, food and tobacco products. No smoking: Smoking while using this product can result in the formation of the hazardous decomposition products. Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below Occupational Exposure Limits. If ventilation is not adequate, use respiratory protection equipment. Avoid continuous exposure of the material to heat above 200 C.

7.2 STORAGE

Keep container tightly closed. Keep container in well-ventilated area. Store away from heat. Store away from strong bases or alkali metals.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 ENGINEERING CONTROLS

Use with appropriate local exhaust ventilation. Provide local exhaust ventilation at transfer points. Provide appropriate local exhaust when product is heated.

8.2 PERSONAL PROTECTIVE EQUIPMENT

8.2.1 Eye/Face Protection

Avoid eye contact. Use Safety Glasses with side shields.

8.2.2 Skin Protection

Avoid skin contact with hot material. Wear Nitrile gloves when handling this material to prevent thermal burns.

8.2.3 Respiratory Protection

Under normal use conditions, airborne exposures are not expected to be significant enough to require respiratory protection. If thermal degradation products are expected, use fullface supplied air respirator.

8.2.4 Prevention of Swallowing

Do not eat, drink or smoke when using this product. Wash exposed areas thoroughly with soap and water.

8.3 EXPOSURE GUIDELINES

Ingredient	Authority	Type	Limit	Additional Information
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METHYL NONAFLUOROBUTYL ETHER	AIHA	TWA	750 ppm	
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METHYL NONAFLUROISOBUTYL ETHER	AIHA	TWA	750 ppm	
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SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Specific Physical Form: liquid

Odor, Color, Grade: clear, colorless, with slight ethereal odor.

General Physical Form: Liquid

Autoignition temperature 405 °C [ASTM E659-84]

Flash Point *Not Applicable*

Flammable Limits - LEL None [ASTM E681-94, @100 C)]

Flammable Limits - UEL None [ASTM E681-94, @100 C)]

Boiling point 61 °C @ 760 mmHg

Density 1.5-1.6 g/ml

Vapor Density 8.6

Vapor Pressure 202 mmHg @ 25 °C

Specific Gravity 1.5-1.6

pH *Not Applicable*

Melting point -135 °C

Solubility In Water < 12 ppm

Evaporation rate 49 [BUOAC=1]

Volatile Organic Compounds Exempt

Percent volatile 67-99 %

VOC Less H2O & Exempt Solvents Exempt

Viscosity ND

SECTION 10: STABILITY AND REACTIVITY

Stability: Stable.

Materials and Conditions to Avoid: Strong bases and alkali metals.

Hazardous Polymerization: Hazardous polymerization will not occur.

Hazardous Thermal Decomposition Products: Hydrogen Fluoride, Perfluoroisobutylene (PFIB) At Elevated Temperatures.

Hazardous Decomposition: Hydrogen fluoride has an ACGIH Threshold Limit Value of 3 parts per million (as fluoride) as a Ceiling Limit and an OSHA PEL of 3 ppm of fluoride as an eight hour Time-Weighted Average and 6 ppm of fluoride as a Short Term Exposure Limit. The odor threshold for HF is 0.04 ppm, providing good warning properties for exposure. Decomposition of this product at temperatures above 300 degrees C can form perfluoroisobutylene (PFIB), but PFIB will only accumulate with continuous exposure to excessive heat in a sealed vessel. The formation rate for PFIB is about 1000 times less than the rate for primary thermal decomposition products such as HF. During normal use conditions, no health hazard is associated with the use of this material due to PFIB exposure.

SECTION 11: TOXICOLOGICAL INFORMATION

Please contact the address listed on the first page of the MSDS for Toxicological Information on this material and/or its components.

SECTION 12: ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION

Test Organism Test Type Result

Fathead Minnow, Pimephales promelas 96 hours Lethal Concentration 50% >7.9 mg/l

Green algae, Selenastrum capricornutum 96 hours Inhibitory Concentration 50% >8.9 mg/l

Water flea, Daphnia magna 48 hours Effect Concentration 50% >10 mg/l

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal Method: Reclaim if feasible. As a disposal alternative, incinerate in an industrial or commercial facility in the presence of a combustible material. Combustion products will include HF.

EPA Hazardous Waste Number: Not regulated

SECTION 14: TRANSPORT INFORMATION

DOT Regulations: Not regulated by DOT.

SECTION 15: REGULATORY INFORMATION

311/312 Hazard Categories:

Fire Hazard - No

Pressure Hazard - No

Reactivity Hazard - No

Immediate Hazard - Yes

Delayed Hazard - No

CHEMICAL INVENTORIES

One or more chemical components of this material have been commercialized under the TSCA polymer exemption at 40CFR723.250. Polymers subject to this exemption are not listed on the TSCA Inventory, but are in compliance with TSCA requirements. The components of this product are in compliance with the chemical notification requirements of TSCA. All applicable chemical ingredients in this material are listed on the European Inventory of Existing Chemical Substances (EINECS), or are exempt polymers whose monomers are listed on EINECS.

Contact Cytonix for more information.

This MSDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 16: OTHER INFORMATION

NFPA Hazard Classification

Health: 3 Flammability: 1 Reactivity: 0 Special Hazards: None

HMIS Hazard Classification

Health: 1 Flammability: 1 Reactivity: 0 Protection: X - See PPE section.

DISCLAIMER: The information in this Material Safety Data Sheet (MSDS) is believed to be correct as of the date issued.