



## FluoroPel™ 1300A

Description: PFC1300A series solutions comprise a fluoroaliphatic polymer in fluorinated solvent. When applied to clean surfaces, the solution dries to a thin, transparent film with excellent antimigration properties to all non-fluorinated liquids, including heptane, toluene, acetone, silicone oils and detergents. The PFC1300A series polymer is also available in solvents with higher and lower boiling ranges, at various concentrations, and is also offered as functionalized copolymers.

Application: Wear Gloves and eye protection. Dip, brush, spin or wipe thin coating onto clean, dry, oil-free surface. For best performance, heat to 130°C for 10 minutes. Clean up with FCL52, FCL135 or other fluorocarbon solvent.

**AVOID PROLONGED OR REPEATED BREATHING OF CONCENTRATED VAPORS. DO NOT BREATHE DECOMPOSITION PRODUCTS RESULTING FROM EXPOSURE TO TEMPERATURES ABOVE 250°C. DO NOT SMOKE WHILE APPLYING THIS PRODUCT.**

Cytonix, LLC, 8000 Virginia Manor Road, Beltsville, Maryland, USA, 301-470-6267

% Polymer  Additives  Lot #

### FluoroPel™ 1300A Test Data

<u>Film Property</u>	<u>Specification</u>
Appearance	Clear, colorless, non-fluorescing film
Surface Tension	9-10 dynes/cm (air-dried); 5-7 dynes/cm (heated)
Hardness	HB pencil mark; #2 pencil penetration
Melting point	75-113°C
Flammability	non burning
Heat stability	150°C (continuous); 250°C (one hour)
Refractive index	1.35
Dielectric strength	2500 volts/25 micrometers
Dielectric constant	2.25 @ 100 KHz
Dissipation factor	0.016 @ 100 KHz
Volume resistivity	4.5 (10) <sup>15</sup> ohm-cm

Product information and samples, contact Dr. Elaine Lanza, 703-929-5324, [elanza@cytonix.com](mailto:elanza@cytonix.com)



## Material Safety Data Sheet

### SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT: FluoroPel™ PFC1300A

MANUFACTURER: Cytonix, LLC, 8000 Virginia Manor Road, Beltsville, MD 20705

PHONE: Business Office 301-470-6267, Product Information 703-929-5324, fax 301-470-6269

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BUSINESS CONTACT: <mailto:business@cytonix.com>

REVISION DATE: 3-3-2010

PRODUCT USE: Protective Barrier or liquid repellent Coating. Approved for use in a class I medical devices and meets ISO 10933 biocompatibility requirements, showing no cytotoxicity to L-929 cells.

### SECTION 2: INGREDIENTS

INGREDIENT	Wt%	C.A.S. NUMBER
Polychlorotrifluoroethylene	67-99	9002-83-9
FLUOROALIPHATIC POLYMER	1-33	PROPRIETARY

This formulation does not contain PFOA or PFOS and does not derive from compounds comprising these materials. 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. Volatile components of Fluoro-Compounds are VOC exempt per Federal Register August 25, 1997 [Volume 62, Number 164].

### 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

Auto ignition temperature None [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

6.1 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 full face 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

Polychlorotrifluoroethylene OSHA PEL None ACGIH TLV None

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Specific Physical Form: liquid solution

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

General Physical Form: Liquid

Auto ignition temperature None [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 132 °C @ 760 mm Hg

Vapor Density 10

Vapor Pressure 10 mm Hg @ 25 °C

Specific Gravity 1.7  
pH *Not Applicable*  
Melting point -130 °C  
Solubility In Water nil  
Evaporation rate ND  
Volatile Organic Compounds Exempt  
Percent volatile 67-99 %  
VOC Less H<sub>2</sub>O & 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.

#### SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Polychlorotrifluoroethylene produced no deaths among 10 rats upon an 8 hr. exposure to 2650 ppm (34.3 mg/L) during a 1999 study and is considered by OSHA definition to be nontoxic. The animals showed no signs of treatment during exposure or 14 days afterward. All animals gained weight during the 14 day observation period. Autopsy showed no macroscopic abnormalities. In a 4 hour exposure among rats conducted in 1989, polychlorotrifluoroethylene was found to have a LC<sub>50</sub> of 4.6 mg/L. This result placed it into EPA Toxicity Category III (Slightly Toxic). The animals generally showed no response during exposure or for at least one day after exposure. Signs of toxicity including tremors, nasal discharge and labored breathing began appearing two or three days after exposure. The responses generally abated in surviving animals during the second week after exposure. More extensive toxicity studies have been conducted on a slightly heavier Polychlorotrifluoroethylene. Based on all the available data in three species of animals, limited exposure to polychlorotrifluoroethylene should not be harmful to any portion of the human anatomy. Studies conducted by the Air Force have demonstrated liver toxicity in rodents, but not in primates. The observed liver toxicity is believed to be specific for rodents and not relevant to humans. Polychlorotrifluoroethylene is not irritating to skin but skin protection should be used to prevent repeated exposure and the possibility of sensitization. All mutagenicity studies were negative.

#### SECTION 12: ECOLOGICAL INFORMATION

This product contains the following toxic chemical(s) subject to Section 313 Title III reporting requirements (40 CFR Part 372): NONE

#### 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

1. Hazardous Materials/Dangerous Goods Shipping Regulations  
U.S. (49 CFR): Proper Shipping Name: Non-Regulated  
IATA: Proper Shipping Name: Non-Regulated  
IMDG: Proper Shipping Name: Non-Regulated  
2. Other Information HMIS LABELING: H 1; F 0; R 0; P B

#### SECTION 15: REGULATORY INFORMATION

311/312 Hazard Categories:  
Fire Hazard - No  
Pressure Hazard - No  
Reactivity Hazard - No  
Immediate Hazard - No

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: 0 Flammability: 0 Reactivity: 0 Special Hazards: None

HMIS Hazard Classification

Health: 0 Flammability: 0 Reactivity: 0

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

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