

SPI Supplies Division

Structure Probe, Inc.

P.O. Box 656 West Chester, PA 19381-0656 USA

Phone: 1-(610)-436-5400 Fax: 1-(610)-436-5755

spi3spi@2spi.com

<http://www.2spi.com>

Manufacturer's CAGE: 1P573

Material Safety Data Sheet

Date Effective: December 8, 2011

SPI # 00021-RA, 00021-XK, 00021-XI, 00021-XR

Fomblin® Perfluorosolv™ PFS-2

Section 1: Identification

Chemical Name/Synonyms.....Propene, 1,1,2,3,3,3-hexafluoro, oxidized, polymerized

Chemical family.....Fluorocarbons, perfluorinated polyethers

Emergencies

Contacting CHEMTREC:

24 Hour Emergency Use Only #'s...

Worldwide phone: 1-(703)-527-3887

Worldwide FAX: 1-(703)-741-6090

Toll-free phone: 1-(800)-424-9300 USA only

Product or Trade Name.....SPI # 00021-RA, 00021-XK, 00021-XI, 00021-XR Perfluorosolv™ PFS-2

CAS #'s.....69991-67-9

Synonyms.....None

Chemical Formula.....Propene, 1,1,2,3,3,3-hexafluoro, oxidized, polymerized

Hazardous Material Information System USA

Health.....1

Fire Hazard.....0

Reactivity.....0

Personal Protection.....0

NFPA Rating (estimated)

Health.....1

Flammability.....0

Reactivity.....0

Section 2: Composition

Name: Propene, 1,1,2,3,3,3-hexafluoro, oxidized, polymerized

CAS #: 69991-67-9

Approximate weight %: 100

Section 3: Hazard Identification

Emergency overview:

Physical Health Hazards: Eye, skin, and inhalation hazards exist.

Physical state: Liquid

Color: Clear colorless

Odor: None

Odor threshold: No data available

Potential Health Effects:

Routes of exposure: Eye contact, inhalation, skin contact

Signs and Symptoms of Acute Exposure:

Skin contact:

May produce irritation or contact dermatitis which may be delayed several hours. Prompt and thorough washing with soap and water will reduce or eliminate potential dermal effects.

Inhalation:

Inhalation of vapors or mists may irritate the respiratory tract.

Eye contact:

May cause slight irritation.

Ingestion:

Not known. This is not an anticipated route of exposure. Ingestion may cause irritation of the gastrointestinal tract, nausea and vomiting.

Chronic Health Effects Summary:

Conditions Aggravated by Exposure:

No known conditions are aggravated by this material.

Section 4: First Aid Measures

Eyes:

In case of contact, immediately flush eyes with copious amounts of flowing water for at least 15 minutes, retracting eye lids often. Get medical attention if irritation persists.

Skin:

Wash skin thoroughly with mild soap and water. Flush with luke warm water for 15 minutes.

Inhalation:

If symptoms of irritation or discomfort are experienced, or person is overcome by exposure, remove at once to fresh air. Give oxygen or artificial respiration as needed.

Ingestion:

If conscious, drink three to four 8 ounce glasses of water or milk. Call physician at once. If unconscious, immediately take affected person to a hospital. Do not give anything by mouth to an unconscious person.

Section 5: Fire Fighting Measures

Flammability classification: Not classified.
Flash Point/Method: Not applicable
Auto-Ignition Temperature: Not applicable

Flammable Limits:

Lower: Not applicable

Upper: Not applicable

Extinguishing Media: Water (spray or fog), foam, dry chemical or carbon dioxide (CO₂)

Special Conditions to Avoid: High temperatures

Extinguishing Media: Water spray, foam carbon dioxide, dry chemical

Unusual Fire Hazards:

Fluoropolymers will degrade upon prolonged heating or in a fire, liberating carbonyl fluoride and hydrogen fluoride (HF). This gas is toxic if inhaled or it comes into contact with moist skin. HF has an ACGIH TLV ceiling limit of 3 ppm (2.6 mg/m³) and an OSHA PEL TWA of 3 ppm. Carbonyl fluoride has an ACGIL TLV and OSHA PEL TWA of 2 ppm (5 mg/m³).

Firefighting procedures:

Use self-contained breathing apparatus (SCBA) and skin protection for acid gas exposure. Do not enter fire area without proper protection. Fight fire from safe distance. If possible, air monitoring should be performed.

Section 6: Accidental Release Measures

Release response:

In case of a release or spill, absorb material onto vermiculite or similar inert absorbent. Place spilled material into covered container for disposal.

Extinguish all ignition sources and evacuate the area. Exercise caution, spill area may be slippery.

Recommended disposal:

Dispose according to applicable local, state/provincial and federal regulations

Section 7: Handling and Storage

Storage and handling:

Store in sealed containers. Do not store near combustible materials. Keep away from heat, sparks, and flames.

Wash hands after use and before handling food or applying cosmetics. Do not use tobacco products in the immediate area. Do not contaminate cigarette or cigar products with the product because it will decompose in the heat of the cigarette (or cigar) to HF which is very toxic.

Section 8: Exposure Controls and Personal Protection

ACGIH Threshold Limit Value (8 hour time weighted average)

None established

OSHA Permissible Exposure Limit (8 hour time weighted average)

None established

Engineering Controls:

Ventilation requirements:

Local exhaust, vent vapors or mists generated by processing away from operating personnel. Local exhaust ventilation at a rate of 50 feet per minute.

Personal Protection:

Respiratory Protection:

No occupational standards have been developed for this material. In situations where exposure to vapors or mists is likely, NIOSH/MSHA approved respirators are recommended. Respirator use limitation made by NIOSH/MSHA or the manufacturer must be observed. Respiratory protection programs must be in accordance with 29 CFR 1910.134.

Additional Comments about Respiratory Protection:

The above statements about respiratory protection are precautionary in nature. PFS-2 is used as a solvent for precision cleaning or leak testing, applications where the fluid can become contaminated with foreign material that are themselves respiratory tract irritants. In some cases these materials are heated and/or mist and vapors could be present. The MSDS includes the need for respirators to ensure that exposures don't occur and recommends an organic vapor acid type cartridge respirator or adequate ventilation to remove the vapors/mists.

Please note that the handling of the PSF-2 fluids in its supplied state does not require respiratory protection. The statements in the MSDS are overly cautious based on historical experience with our customers and their applications, and the possibility of contamination with foreign material during use.

Skin: Rubber or latex gloves recommended but not necessary.

Eye: ANSI 87.1 approved safety glasses with side shields or equivalent

Section 9: Physical and Chemical Properties

Boiling Point/Range: 57°C

pH: Not applicable

Vapor Pressure: 228 mg Hg @ 25°C(torr)

Vapor Density (Air=1): Not available

Viscosity: 0.45 mg Hg @ 25°C(cSt)

Specific Gravity: 1.070

Water solubility: 14 ppm(wt)

Melting/Freezing Point: Not determined

Evaporation Rate: Not applicable

Appearance and color: Clear colorless liquid

Odorless: Odorless

% Volatile by Volume: 0

Section 10: Stability and Reactivity

Chemical Stability:

The product is stable.

Conditions to Avoid:

Heat, sparks, flames, and other ignition sources; avoid heating above 290°C (540°F)

Incompatibility (materials to avoid):

Alkali metals and halogenated compounds. Strong or non-aqueous alkali and Lewis acids above 100°C (212°F).

Hazardous Products of Deposition:

Thermal decomposition of this product will generate hydrogen fluoride (HF) which is corrosive, causing burns on contact with skin and other tissues.

Reactions with Air and Water:

None known

Section 11: Toxicological Information

Rat oral LD50: greater than 25.65 g/kg

Rat intraperitoneal LD50: greater than 25 g/kg

Rat dermal: greater than 2 g/kg

Rabbit skin irritation: not irritating

Rabbit eye irritation: not irritation

Guinea pig sensitization: not a sensitizer

Section 12: Ecological Information

Exotoxicity: No environmental information is available for this product.

Section 13: Disposal Considerations

Waste disposal: Material, as supplied, is not a hazardous waste. Landfill according to current federal, state/provincial, and local regulations, or incinerate in a high temperature incinerator designed to burn fluorine-containing materials. Processing, use, or contamination may make this information inaccurate or incomplete.

Section 14: Transport Information

Proper Shipping Name: Chemicals, NOI

DOT Hazard Class: Non-Regulated

UN/NA ID: Not Regulated

Packing Group: Not Applicable

Labels: Not Regulated

Marine Pollutant: No Information

DOT Status: Not Regulated

Section 15: Regulatory Information

All components of this product are listed on the Toxic Substance Control Act (TSCA) Section 8(b) Chemical Inventory. This product is not a HAZMAT as defined by the OSHA Hazard Communications Standard (29 CFR 1910.1200). This product is not a "controlled product" as defined by the Canadian Workplace Hazardous Materials Information System (WHMIS)".

SARA Section 302 Extremely Hazardous Substances: Not listed anywhere.

SARA 311/312

Acute:	No
Chronic:	No
Fire:	No
Reactivity:	No
Sudden release of pressure:	No

SARA Section 313 Toxic Chemicals: Not listed

California Prop. 65:

Proposition 65 requires manufacturers or distributors of consumer products into the State of California to provide a warning statement if the product contains ingredients for which the State has found to cause cancer, birth defects or other reproductive harm. If this product contains an ingredient listed by the State of California to cause cancer or reproductive toxicity, it will be listed below:

No ingredients have been found.

All components of this product are listed on the Canadian Environmental Protection Act (CEPA) provisional domestic substances list (DSL).

Section 16: Other Information

Disclaimer of Liability:

Caution! Do not use SPI Supplies products or materials in applications involving implantation within the body; direct or indirect contact with the blood pathway; contact with bone, tissue, tissue fluid, or blood; or prolonged contact with mucous membranes. Products offered by SPI Supplies are not designed or manufactured for use in implantation in the human body or in contact with internal body fluids or tissues. SPI Supplies will not provide to customers making devices for such applications any notice, certification, or information necessary for such medical device use required by US FDA (Food and Drug Administration) regulation or any other statute. SPI Supplies and Structure Probe, Inc. make no representation, promise, express warranty or implied warranty concerning the suitability of these materials for use in implantation in the human body or in contact with internal body tissues or fluids.

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