

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

Safety Data Sheet

Date Effective: April 18, 2013

SPI00014-AB

Fomblin® ZNF High Vacuum Grease

Section 1: Identification

Chemical Name/Synonyms..... Mixture of Ethene, tetrafluoro-, oxidized, polymerized and Polytetrafluoroethylene

Chemical family..... Fluorocarbons, fluoropolymers

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..... Fomblin® ZNF High Vacuum Grease

Use: Lubricant for industrial use only. Size: 100 gram tubes only.

CAS #'s..... 69991-61-3, 9002-84-0

Chemical Formula..... $\text{CF}_3\text{-O-(CF}_2\text{-CF}_2\text{-O)}_n\text{-(CF}_2\text{-O)}_m\text{-CF}_3 + (\text{CF}_2\text{-CF}_2)_n\text{-}$

OSHA Hazard Communication Standard:

This material is non-hazardous as defined by the American OSHA Hazard Communication Standard

GHS Classification(s):

Eye Irritant: Category 2B

Skin Irritant: Category 3

GHS Hazard Symbol(s)

None

Signal Word: Warning

Hazard Statement(s):

H316: Causes mild skin irritation

H320: Causes eye irritation.

Hazard Symbol(s)

[Xi] irritant

Precautionary Statement(s):

P302+352: IF ON SKIN: Wash with soap and water

P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing

Risk Phrase(s):

R36/38: Irritating to eyes and skin [Xi]

Safety Phrase(s):

S2: Keep out of reach of children

S24/25: Avoid contact with skin and eyes

Hazardous Material Information System USA

Health..... 1
Fire Hazard..... 0
Reactivity..... 0
Personal Protection.....

NFPA Rating (estimated)

Health..... 1
Flammability..... 0
Reactivity..... 0

Section 2: Composition

Component Name	CAS #	Percent	EINECS/ELINCS
Ethene, tetrafluoro-, oxidized, polymerized	69991-61-3	Proprietary	Not available
Polytetrafluoroethylene	9002-84-0	Proprietary	Not available

Section 3: Hazard Identification**Emergency overview:** Routes of entry include eye contact, skin contact.**Appearance:** White grease.**Flash Point:** N/A**Warning!****Target Organs:** Eyes, skin.**Potential Health Effects:****Eye:** Contact may cause slight irritation, redness.**Skin:** Contact may cause slight irritation, redness.**Ingestion:** May cause nausea or vomiting.**Inhalation:** No known effect.

Section 4: First Aid Measures**Eye Contact:** Flush eyes for 15 minutes with copious amounts of water, retracting eyelids often. Seek medical attention if irritation persists.**Skin Contact:** Wash skin thoroughly with mild soap and water. Flush with lukewarm water for 15 minutes.**Inhalation:** Move to fresh air in case of accidental inhalation of fumes from overheating or combustion. Use oxygen or artificial respiration if needed.**Ingestion:** If conscious, drink one or two glasses of water. Do not induce vomiting. Call a physician. If unconscious, immediately take affected person to a hospital. Do not give anything by mouth to an unconscious person.

Section 5: Fire Fighting Measures

Suitable extinguishing media: water, powder, foam, dry chemical, carbon dioxide (CO₂)

Extinguishing media which shall not be used for safety reasons: None.

Special exposure hazards in a fire: The product is not flammable or explosive.

Hazardous decomposition: Gaseous hydrogen fluoride (HF) and Fluorophosgene

Special protective equipment for fire-fighters: Wear self-contained breathing apparatus and protective suit. When intervention in close proximity wear acid resistant over suit.

Other information: Evacuate personnel to safe areas. Approach from upwind. Protect intervention team with a water spray as they approach the fire. Keep containers and surroundings cool with water spray. Keep product and empty container away from heat and sources of ignition.

Section 6: Accidental Release Measures

Personal precautions, protective equipment and emergency procedures:

Prevent further leakage or spillage, if safe to do so.

Ensure adequate ventilation.

Material can create slippery conditions.

Sweep up to prevent slipping hazard.

Keep away from open flames, hot surfaces and sources of ignition.

Environmental precautions:

Should not be released into the environment.

The product should not be allowed to enter drains, water courses or the soil.

In case of accidental release or spill, immediately notify the appropriate authorities if required by Federal/State/Provincial and local laws and regulations.

Do not flush into surface water or sanitary sewer system.

Methods and materials for containment and cleaning up:

Soak up with inert absorbent material.

Suitable material for picking up: Dry sand, Earth.

Shovel into suitable container for disposal.

Refer to protective measures listed in sections 7 and 8.

Section 7: Handling and Storage

Handling:

Ensure adequate ventilation.

Use personal protective equipment.

Keep away from heat and sources of ignition.

To avoid thermal decomposition, do not overheat.

Take measures to prevent the build up of electrostatic charge.

Clean and dry piping circuits and equipment before any operations.

Ensure all equipment is electrically grounded before beginning transfer operations.

Storage:

No special storage conditions required.

Keep away from heat and sources of ignition.

Keep in properly labeled containers.

Keep away from combustible material.

Keep away from incompatible products.

Packaging:

Store in original container.

Section 8: Exposure Controls and Personal Protection

Exposure Limit Values

Remarks: Threshold limit values of by-products from thermal decomposition

Hydrogen fluoride anhydrous:

- US.ACGIH Threshold Limit Values 12 2010:
 - time weighted average = .05 ppm as F
- US.ACGIH Threshold Limit Values 12 2010:
 - Ceiling Limit Value = 2 ppm as F
- US. OSHA Table Z-1-A (29 CFR 1910.1000) 1989:
 - time weighted average = 3 ppm as F
- US. OSHA Table Z-1-A (29CFR 1910.1000) 1989:
 - Short term exposure limit = 6 ppm as F
- US. ACGIH Threshold Limit Values 12 2010:
 - as F, Can be absorbed through skin
- US. OSHA Table Z-2 (29 CFR 1910.1000) 02 2006:
 - time weighted average = 3 ppm
- US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000_ 02 2006:
 - Permissible exposure limit = 2.5 mg/m³ as F
- US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A 06 2008:
 - time weighted average – 3 ppm as F
- US. Tennessee. OELs Occupational Exposure Limits, Table Z1A 06 2008:
 - Short term exposure limit = 6 ppm as F

Carbonyl difluoride:

- US. ACGIH Threshold Limit Values 2009:
 - time weighted average = 2 ppm
- US. ACGIH Threshold Limit Values 2009:
 - Short terms exposure limit = 5 ppm
- US. OSHA Table Z-1-A (29CFER 1910.1000 1989:
 - time weighted average = 2 ppm
 - time weighted average = 5 mg/m³
- US. OSHA Table Z-1-A (29 CFR 1910.1000 1989:
 - Short term exposure limit = 5 ppm
 - Short term exposure limit = 15 mg/m³
- US. OSHA Table Z-2 (29 CFR 1910.1000_ 02 2006:
 - time weighted average = 2.5 mg/m³ as dust
- US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) 02 2006:
 - Permissible exposure limit = 2.5 mg/m³ as F
- US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A 06 2008:
 - time weighted average = 2 ppm
 - time weighted average = 5 mg/m³
- US. Tennessee OELs. Occupational Exposure Limits, Table Z1A 06 2008:
 - Short term exposure limit = 5 ppm
 - Short term exposure limit = 15 mg/m³

Engineering controls:

- Provide local ventilation appropriate to the product decomposition risk (see Section 10).
- Refer to protective measures listed in sections 7 and 8.
- Apply technical measures to comply with the occupational exposure limits.
- For additional information, consult the current edition of The Guide to the Safe Handling of Fluoropolymers published by the Society of Plastics Industry, Fluoropolymer Division.

Personal protection equipment:

- Respiratory protection:

No personal respiratory protective equipment normally required.
Use respirator when performing operations involving potential exposure to vapor of the product.
Use only respiratory protection that conforms to the international/national standards.
Use NIOSH approved respiratory protection.
Comply with OSHA respiratory protection requirements.

Hand protection:
Latex gloves.
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).

Eye protection:
Safety glasses with side-shields.
If splashes are likely to occur, wear: Tightly fitting safety goggles.

Skin and body protection:
Apron.
Long sleeved clothing

Hygiene measures:
Ensure that eyewash stations and safety showers are close to the workstation location.
When using do not eat, drink or smoke.
Wash hands before breaks and at the end of workday.
Handle in accordance with good industrial hygiene and safety practice.

Section 9: Physical and Chemical Properties

Appearance: white grease

Odor: odorless

pH: n/a

Vapor Pressure: <0.0000001 hPa at 20°C (68°F)

Vapor Density: n/a

Evaporation Rate: n/a

Viscosity: n/a

Boiling Point: n/a

Freezing/Melting Point: n/a

Autoignition Temperature: n/a

Flash Point: The product is not flammable.

Decomposition Temperature: n/a

Explosion Limits: The product is not explosive.

Lower: n/a

Upper: n/a

Oxidizing properties: Non oxidizer

Solubility in water: insoluble

Fluorinated solvents: partly soluble

Specific Gravity/Density: 1.9 g/cm

Section 10: Stability and Reactivity

Chemical Stability: This material is stable.

Conditions to Avoid: Heat, sparks, flames, ignition sources. Avoid heating above 290°C (554°F).

Incompatibility with Other Materials: Lewis acids above 100°C (212°F), Aluminum and magnesium in powder form above 180°C. Metals promote and lower decomposition temperature.

Hazardous Decomposition of Products: Thermal decomposition of this product will generate gaseous hydrogen fluoride (HF) which is corrosive, causing burns on contact with skin and other tissue., Fluorophosgene

Section 11: Toxicological Information

Remarks: Description of possible hazardous to health effects is based on experience and/or toxicological characteristics of several components.

No other information available.

Section 12: Ecological Information

Ecotoxicity effects: No data available

Mobility: No data available

Persistence and degradability: No data available

Bioaccumulative potential: No data available

Other adverse effects: No data available

Remarks: Ecological injuries are not known or expected under normal use.

Section 13: Disposal Considerations

Waste from residues / unused products

Do not dump into any sewers, on the ground or into a body of water.

All disposal methods must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations.

Waste characterizations and compliance with applicable laws and regulations are the responsibility of the waste generator.

Can be incinerated, when in compliance with local regulations. The incinerator must be equipped with a system for the neutralization or recovery of HF.

Packaging treatment

Empty containers can be land-filled, when in accordance with the local regulations.

RCRA Hazardous waste

Listed RCRA Hazardous Waste (40 CFR 302) – No

Section 14: Transport Information

Sea (IMO/IMDG) – not regulated

Air (ICAO/IATA) – not regulated

U.S. Dept. of Transportation – not regulated

Canadian Transportation of Dangerous Goods – not regulated

Section 15: Regulatory Information

United States:

RTECS:

CAS# 9002-84-0: KX4025000

CAS# 69991-61-3: N/A

TSCA: All components of this product are listed on the Toxic Substances Control Act (TSCA) Section 8(b).

SARA 302: Not listed

SARA Codes:

Acute: No

Chronic: No

Fire: No

Reactivity: No

Sudden Release of Pressure: No

Section 313: Not listed on Section 313 Toxic Chemicals list.

OSHA: This product is not a "hazardous substance" as defined by the OSHA Hazard Communication Standard (29CFR 1910.1200).

State (Individual states in the USA)

Polytetrafluoroethylene is listed on the Pennsylvania Hazardous Substances List.

Canada:

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

This product is not a "controlled product" as defined by the Canadian Workplace Hazardous Materials Information System (WHMIS).

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 of fluids.

The information and recommendations set forth above are taken from sources believed to be accurate as of the date hereof, however SPI Supplies and Structure Probe, Inc. make no warranty with respect to the accuracy of the information or the suitability of the recommendations, and assume no liability to any user thereof. The information contained in this sheet does not constitute a hazard assessment and should not be used in place of the user's own assessment of work place risks as required by other health and safety legislation. Be aware of the Structure Probe, Inc. [Copyright Policy](#). Structure Probe, Inc. grants a nonexclusive license to make unlimited copies of this safety sheet for internal use only. Quite obviously, this information would pertain only to this material when purchased from SPI Supplies as product from other sources, with other ingredients and impurity levels could have substantially different properties.