



2226 Queen Anne Ave N.
Seattle, WA 98109, USA
Ph (206) 282-3376
Fax (206) 282-0105
www.silverfernchemical.com

MATERIAL SAFETY DATA SHEET

FERNFROST 50% - PROPYLENE GLYCOL INHIBITED 50%

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: FERNFROST Heat Transfer Fluid Premix
SYNONYM: PROPYLENE GLYCOL INHIBITED 50% MIX
HEAT TRANSFER FLUID

1.2 COMPANY IDENTIFICATION

Company

Silver Fern Chemical, Inc.
2226 Queen Anne Avenue North
Suite #C
Seattle WA 98109, USA

Business Contact

Customer Service: 206-282-3376
info@silverfernchemical.com

24 Hour Emergency Contact

Infotrac 800-535-5053
Outside USA & Canada 352-323-3500

2. COMPOSITION INFORMATION

Propylene glycol 57-55-6 50 % or less WHMIS: not hazardous
Deionized water 7732-18-5 < 50% WHMIS: not hazardous
Dipotassium hydrogen phosphate 7758-11-4 < 2% WHMIS: not hazardous

3. HAZARDS IDENTIFICATION

3.1 EMERGENCY OVERVIEW

- Appearance: Dyed Yellow or custom color
- Physical State: Liquid
- Odor: Mild
- Hazards of product: NO SIGNIFICANT IMMEDIATE HAZARDS FOR EMERGENCY RESPONSE ARE KNOWN.

3.2 POTENTIAL HEALTH EFFECTS

- Potential Effects of a Single Acute Exposure Inhalation At room temperature, exposure to vapor is minimal due to low volatility. Mist may cause irritation of upper respiratory tract (nose and throat). Eye Contact May

cause slight temporary eye irritation. Corneal injury is unlikely. Skin Contact Prolonged contact is essentially nonirritating to skin. Repeated contact may cause flaking and softening of skin. Skin Absorption Prolonged skin contact is unlikely to result in absorption of harmful amounts. Swallowing Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts. Chronic, Prolonged or Repeated Exposure Potential Effects of Repeated Exposure In rare cases, repeated excessive exposure to propylene glycol may cause central nervous system effects.

3.3 POTENTIAL ENVIRONMENTAL EFFECTS

See Section 12 for Ecological Information.

4. FIRST AID PROCEDURES

4.1 INHALATION

-Move person to fresh air; if effects occur, consult a physician.

4.2 EYE CONTACT

-Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.

4.3 SKIN CONTACT

-Wash skin with plenty of water.

4.4 SWALLOWING

-No emergency medical treatment necessary.

4.5 NOTES TO PHYSICIAN

-No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. FIRE FIGHTING MEASURES

5.1 FLAMMABLE PROPERTIES - REFER TO SECTION 9, PHYSICAL AND CHEMICAL PROPERTIES

5.2 EXTINGUISHING MEDIA

-Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers.

-Foam. Do not use direct water stream. May spread fire. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.

5.3 FIRE FIGHTING PROCEDURES

-Keep people away. Isolate fire and deny unnecessary entry. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of re-ignition has passed.

-Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Burning liquids may be extinguished by dilution with water. Do not use direct water stream. May spread fire. Move container from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage.

5.4 SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS

-Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, pants, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

5.5 UNUSUAL FIRE AND EXPLOSION HAZARDS

- Container may rupture from gas generation in a fire situation.
- Violent steam generation or eruption may occur upon application of direct water stream to hot liquids.
- Liquid mist of this product can burn.
- Flammable concentrations of vapor can accumulate at temperatures above flash point; see Section 9.

5.6 HAZARDOUS COMBUSTION PRODUCTS

-During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Carbon monoxide. Carbon dioxide.

6. ACCIDENTAL RELEASE MEASURES

-Steps to be Taken if Material is Released or Spilled:

Small spills: Absorb with materials such as: Cat litter. Sawdust. Vermiculite. Zorb-all®. Collect in suitable and properly labeled containers. Large spills: Dike area to contain spill. Recover spilled material if possible. See Section 13, Disposal Considerations, for additional information.

-Personal Precautions: Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Environmental Precautions: Prevent from entering into soil, ditches, sewers, waterways and/ or groundwater. See Section 12, Ecological Information.

7. HANDLING AND STORAGE

7.1 HANDLING

-Ventilation: Provide general and/or local exhaust ventilation to control

airborne levels below the exposure guidelines.

-Other Precautions: Spills of these organic materials on hot fibrous insulations may lead to lowering of the autoignition temperatures possibly resulting in spontaneous combustion.

7.2 STORAGE

Store below: 121°C (250°F). Do not store in: galvanized steel.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

8.1 EXPOSURE LIMITS

-Component Exposure Limits Skin: Propylene glycol 10 mg/m³ TWA8 AIHA WEEL Consult local authorities for recommended exposure limits.

In the Exposure Limits Chart above, if there is no specific qualifier (i.e., Aerosol) listed in the Form Column for a particular limit, the listed limit includes all airborne forms of the substance that can be inhaled.

8.2 PERSONAL PROTECTION

-Respiratory Protection: Atmospheric levels should be maintained below the exposure guideline. When respiratory protection is required for certain operations, use an approved air-purifying respirator. In dusty or misty atmospheres, use an approved particulate respirator.

-Ventilation: Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines.

-Eye Protection: Use safety glasses.

-Other Protective Equipment: No precautions other than clean body-covering clothing should be needed. Use gloves chemically resistant to this material.

9. PHYSICAL AND CHEMICAL PROPERTIES

-Physical State: Liquid

-Appearance: Colorless

-Odor: Mild

-Flash Point - Closed Cup: 102 °C 216 °F Tag Closed Cup ASTM D 56 (Propylene glycol)

-Flammable Limits In Air:

-Lower 2.6 %(V) 100 °C (Propylene glycol)

-Upper 12.5 %(V) 130 °C (Propylene glycol)

-Autoignition Temperature: 416 °C 780 °F

-Vapor Pressure: 0.7 mmHg 20 °C

-Boiling Point (760 mmHg): 162 °C 323 °F

-Vapor Density (air = 1): 2.6

-Specific Gravity (H₂O = 1): 1.05 20 °C / 20 °C

-Freezing Point: <= -51 °C <= -60 °F

-Melting Point: Not applicable (for liquids)

- Solubility in Water (by weight): 100 % 20 °C
- pH: 9 - 11 (5% solution in water)
- Evaporation Rate (Butyl Acetate = 1): 0.07
- Percent Volatiles: 98 Wt%

10. STABILITY AND REACTIVITY

- STABILITY/INSTABILITY** Thermally stable at recommended temperatures and pressures.
- Conditions to Avoid:** Product can oxidize at elevated temperatures.
- Generation of gas during decomposition** can cause pressure in closed systems.
- Incompatible Materials:** Avoid contact with: Strong acids. Strong bases. Strong oxidizers.
- Thermal Decomposition:** Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Aldehydes. Alcohols. Ethers.
- HAZARDOUS POLYMERIZATION** Will not occur.

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY

- Peroral:**Rat; female; LD50 = 20300 mg/kg
- Percutaneous:** Based on information for a similar material: Rabbit; LD50 = > 10000 mg/kg
- DEVELOPMENTAL TOXICITY:**Contains component(s) which did not cause birth defects or any other fetal effects in lab animals., The component is Propylene glycol.
- REPRODUCTIVE TOXICITY:** Contains component(s) which did not interfere with reproduction in animal studies., Contains component(s) which did not interfere with fertility in animal studies., The component is Propylene glycol.
- CHRONIC TOXICITY AND CARCINOGENICITY:**Similar formulations did not cause cancer in laboratory animals.
- GENETIC TOXICOLOGY:**In vitro genetic toxicity studies were negative. In Vivo Genetic toxicity studies in animals were negative for component(s) tested.
- SIGNIFICANT DATA WITH POSSIBLE RELEVANCE TO HUMANS:** In rare cases, repeated excessive exposure to propylene glycol may cause central nervous system effects.

12. ECOLOGICAL INFORMATION

12.1 ENVIRONMENTAL FATE

-Based largely or completely on information for: Propylene glycol. Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. Degradation is expected in the atmospheric environment within minutes to hours.

12.2 ECOTOXICITY

-Based largely or completely on information for: Propylene glycol., Material is practically nontoxic to aquatic organisms on an acute basis (LC50/EC50 >100 mg/L in the most sensitive species tested).

12.3 FURTHER INFORMATION

-Based largely or completely on information for: Propylene glycol.
Bioconcentration potential is low (BCF < 100 or Log Pow < 3). Potential for mobility in soil is very high (Koc between 0 and 50).

13. DISPOSAL CONSIDERATIONS

13.1 DISPOSAL

-DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER.

-All disposal practices 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 are the responsibility solely of the waste generator.

14. TRANSPORT INFORMATION

14.1

SMALL CONTAINER

Proper Shipping Name : NOT REGULATED

LARGE CONTAINER

Proper Shipping Name : NOT REGULATED

15. REGULATORY INFORMATION

-TOXIC SUBSTANCES CONTROL ACT (TSCA): All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.30.

-DOMESTIC SUBSTANCES LIST (DSL):

VOC: Vapor pressure 0.66 mmHg @ 20° C

1002 g/l VOC

1030 g/l less water and less exempted solvents

16. HAZARD RATING SYSTEM

NFPA ratings for this product are: H - 0 F - 1 R - 0

-These ratings are part of a specific hazard communication program and should be disregarded where individuals are not trained in the use of this hazard rating system. You should be familiar with the hazard communication programs applicable to your workplace.

Effective Date: 02/01/2012