



Ensinger, Inc.
 365 Meadowlands Blvd.
 Washington, PA 15301
 Ph: 724-746-6050
 Fx: 724-746-9209

Ensinger-Hyde
 1 Main Street
 Grenloch, NJ 08032
 Ph: 856-227-0500
 Fx: 856-232-1754

MATERIAL SAFETY DATA SHEET

TECAFLON™ PVDF

EMERGENCY TELEPHONE: 724-746-6050 or 856-227-0500
Issue Date: December 1, 1996
Revised Date: July 8, 2004
TRADE NAME: Tecaflon PVDF
CHEMICAL NAME: Polyvinylidene fluoride
FORMULA: (C₂H₂F₂)_X

1. Composition / Information on Ingredients

Monomer Composition: 100% Vinylidene fluoride - CAS#: 75-38-7
Polymer Description: PVDF homopolymer - CAS#: 24937-79-9

2. Hazards Identification

Hazards due to contact with the product at high temperature
 In case of decomposition, releases dangerous products. Note: When decomposed by high heat, or by smoking tobacco or cigarettes contaminated with polymer dust, may cause flu-like illness with fever and chills which will pass within 36-48 hours.
 Possibility of ingestion hazard to wildlife.
Effects
Inhalation: Negligible
Eye Contact: Mechanical irritation from the particulates generated by the product.
Skin Contact: Negligible
Ingestion: Negligible

3. First Aid Measures

Inhalation: Negligible
Eye Contact: Flush eyes with running water for several minutes, while keeping the eyelids wide open.
Skin Contact: Negligible for unheated product. In case of contact with molten polymer, cool rapidly with cold water without attempting to peel from the skin. Obtain medical treatment for burns.
Ingestion: If the subject is completely conscious: Negligible. If the subject is unconscious: Not applicable

4. Fire Fighting Measures

Flashpoint: Not Applicable
Flammability: Lower limit = 70 g/m³
Auto-flammability: No data
Danger of Explosion: Negligible
Oxidizing Properties: Non-oxidizer
Common Extinguishing Means: In case of fire in close proximity, most means of extinguishing are acceptable.
Specific Hazards: In a fire, the polymer is considered auto-extinguishing and so is unable to propagate fire. Strong energy source necessary for ignition. Formation of dangerous gas/vapors in case of combustion.
Protective measure in case on Intervention: Evacuate all non-essential personnel. Intervention only by capable personnel who are trained and aware of the hazards of the product. In all cases, wear self-contained breathing apparatus. Wear chemically resistant over-suits. After intervention, proceed to clean

the equipment (take a shower, remove clothing carefully, clean and check).

Other Precautions: If safe to do so, remove the exposed containers. After the fire, proceed rapidly to clean the surfaces exposed to the fumes in order to limit the damage to the equipment. As for any fire, ventilate and clean the rooms before re-entry.

5. Accidental Release Measures

Precautions: Follow the protective measures given in Section 7. Avoid dispersing the dust into a cloud. Spilled material can be a slipping hazard.

Cleanup Methods: Collect the product with suitable means avoiding dust formation. Place everything into a closed, labeled container compatible with the product. For disposal methods, refer to Section 12.

Precautions for Protections of the Environment: Prevent discharges into the environment (sewers, rivers, soils, etc.).

6. Handling and Storage

Handling: Prevent any product decomposition from contacting hot spots. Use electrically conductive materials for piping circuits and equipment.

Storage: Keep away from heat sources and combustible substances.

Other Precautions: Grounded equipment. Follow the protective measure given in Section 7. Prohibit smoking or smoking material when handling this product.

7. Exposure Controls / Personal Protection

Engineering Controls: follow the protective measures given in Section 6. Provide local ventilation suitable for the product decomposition risk (see Section 8). Maintain employee exposures to levels below the applicable exposure limits.

Authorized Limit Values: ACGIH TLV: 10 mg/m³ inhalable and 3 mg/m³ respirable Particulates Not Otherwise Classified (PNOC).

OSHA Permissible Exposure Limit 5 mg/m³ total dust, 5 mg/m³ respirable fraction PNOC.

The OSHA Permissible Exposure Limit for hydrogen fluoride from decomposition is 3 ppm.

Respiratory Protection: In case of dust use NIOSH approved dust respirator. In case of decomposition hazard (see Section 9), use air supplies full face respirator to prevent exposure to hydrofluoric acid. Self-contained breathing apparatus in medium confinement/insufficient oxygen/ in case of large uncontrolled emissions.

Hand Protection: Protective gloves against molten polymer. Protective gloves, if risk of decomposition.

Eye Protection: Wear safety glasses/protective goggles.

Skin Protection: Only necessary to protect against molten polymer.

8. Chemical and Physical Properties

Appearance and Odor: Opaque pellets; odorless

Melting Point/Range: 170-175°C

Boiling Point/Range: Not applicable

Vapor Pressure: Not applicable

Vapor Density (air = 1): Not applicable

Density: Bulk Density: from 0.8 to 1.3 kg/dm³

Solubility: In Water: Insoluble

In Dimethyl formamide: Slightly Soluble

In N-methyl pyrrolidone: Slightly Soluble

In Dimethyl acetamide: Slightly Soluble

pH: Not applicable

Partition Coefficient P (n-octanol/water): Not applicable

Decomposition Temperature: >290°C

9. Stability and Reactivity

Stability: Stable under certain conditions (see below). Decomposition produces dangerous gases upon contact with flames, or hot metallic surfaces.

Conditions to Avoid: Heating the product to its decomposition temperature (see Section 8). Naked flames, sparks.

Material to Avoid: Negligible.

Hazardous Decomposition Products: Hydrogen fluoride, particulates of carbon, carbon monoxide, carbonyl fluoride

10. Toxicological Information

Comments: No specific data. Biologically inert and little toxicity in bulk form. .

NOTE: Decomposition Risk: When decomposed by high heat, or by smoking tobacco or cigarettes contaminated with polymer dust, a flu-like illness with fevers and chills may result which will pass within 36-48 hours. Acute or chronic overexposure to hydrogen fluoride can injure the liver and kidneys.

11. Ecological Information

Comments: No specific data. Product is biologically inert and non-degradable.

12. Disposal Considerations

Waste Treatment: Dispose in compliance with local/federal and national regulations. It is recommended to contact the producer for recycling/recovery. Or, send the product to an authorized industrial waste incinerator. The incinerator must be equipped with a system for the neutralization of hydrogen fluoride. Or, dispose of the product at a landfill authorized for industrial waste.

Packaging Treatment: Containers that cannot be cleaned must be treated as waste. The empty and clean containers are to be reused in conformity with regulations.

This material safety data sheet and the information it contains is offered to you in good faith as accurate. We have reviewed any information contained in this data sheet which we received from sources outside our company. We believe this information to be correct but cannot guarantee its accuracy or completeness. Health and safety precaution in this data sheet may not be adequate for all individuals and/or situations. It is the user's obligation to evaluate and use this product safely and to comply with all applicable laws and regulation. No statement made in the data sheet shall be construed as a permission or recommendation for the use of any product in a manner that might infringe existing patents. No warranty is made, either express or implied.