VINYL FLUORIDE

VFI

CAUTIONARY RESPONSE INFORMATION

Common Synonyms			
Fluoroethylene Monofluoroethylene	Gas	Colorless	Faint odor

Floats and boils on water. Flammable visible vapor cloud is produced.

Evacuate.
Keep people away. Avoid contact with liquid.
Shut off ignition sources. Call fire department.
Stay upwind. Use water spray to ``knock down'' vapor.
Notify local health and pollution control agencies.

Fire

FLAMMABLE.
POISONOUS GASES ARE PRODUCED IN FIRE.
Containers may explode in fire.
Flashback along vapor trail may occur.
Vapor may explode if ignited in an enclosed area.
Wear goggles and self-contained breathing apparatus.
Let fire burn.
Stop flow of gas if possible.
Cool exposed containers and protect men effecting shutoff with water.

Exposure

Call for medical aid.

VAPOR
If inhaled will cause headache, or dizziness.
Move victim to fresh air.
If breathing is difficult, give oxygen.

LIQUID
Will cause frostbite.
Flush affected areas with plenty of water.
DO NOT RUB AFFECTED AREAS.

Water Pollution

Not harmful to aquatic life.

1. CORRECTIVE RESPONSE ACTIONS

Stop discharge
Do not burn

2. CHEMICAL DESIGNATIONS

2.1 CG Compatibility Group: Not listed.
2.2 Formula: CH_2=CHF
2.3 IMO/UN Designation: 2/1860
2.4 DOT ID No.: 1860
2.5 CAS Registry No.: 75-02-5
2.6 NAERG Guide No.: 116P
2.7 Standard Industrial Trade Classification: 51137

3. HEALTH HAZARDS

3.1 Personal Protective Equipment: Protective gloves; safety glasses; self-contained breathing apparatus
3.2 Symptoms Following Exposure: Inhalation of vapor causes slight intoxication, some shortness of breath. Liquid may cause frostbite of eyes or skin.
3.3 Treatment of Exposure: INHALATION: remove victim to fresh air. SKIN: if frostbite has occurred, immerse in warm water, treat burn.
3.4 TLV-TWA: Not listed.
3.5 TLV-STEL: Not listed.
3.6 TLV-Ceiling: Not listed.
3.7 Toxicity by Ingestion: Not pertinent (gas at normal temperatures)
3.8 Toxicity by Inhalation: Currently not available.
3.9 Chronic Toxicity: Currently not available
3.10 Vapor (Gas) Irritant Characteristics: Currently not available
3.11 Liquid or Solid Characteristics: Currently not available
3.12 Odor Threshold: Currently not available
3.13 IDLH Value: Not listed.
3.14 OSHA PEL-TWA: Not listed.
3.15 OSHA PEL-STEL: Not listed.
3.16 OSHA PEL-Ceiling: Not listed.
3.17 EPA AEGL: Not listed

4. FIRE HAZARDS

4.1 Flash Point: Not pertinent (flammable compressed liquefied gas)
4.2 Flammable Limits in Air: 2.6%-21.7%
4.3 Fire Extinguishing Agents: Let fire burn; shut off flow of gas; cool adjacent containers with water.
4.4 Fire Extinguishing Agents Not to Be Used: Not pertinent
4.5 Special Hazards of Combustion Products: Toxic hydrogen fluoride gas is generated in a fire.
4.6 Behavior in Fire: Vapor is heavier than air and may travel considerable distance to a source of ignition and flash back. Containers may explode.
4.7 Auto Ignition Temperature: 860°F
4.8 Electrical Hazards: Currently not available
4.9 Burning Rate: Not pertinent
4.10 Adiabatic Flame Temperature: Currently not available
4.11 Stoichometric Air to Fuel Ratio: 11.9 (calc.)
4.12 Flame Temperature: Currently not available
4.13 Combustion Molar Ratio (Reactant to Product): 4.0 (calc.)
4.14 Minimum Oxygen Concentration for Combustion (MOCC): Not listed

5. CHEMICAL REACTIVITY

5.1 Reactivity with Water: No reaction
5.2 Reactivity with Common Materials: No reaction
5.3 Stability During Transport: Stable
5.4 Neutralizing Agents for Acids and Caustics: Not pertinent
5.5 Polymerization: In the absence of inhibitor, polymerization can occur.
5.6 Inhibitor of Polymerization: Terpene B-0.2%

6. WATER POLLUTION

6.1 Aquatic Toxicity: None
6.2 Waterfowl Toxicity: None
6.3 Biological Oxygen Demand (BOD): None
6.4 Food Chain Concentration Potential: None
6.5 GESAMP Hazard Profile: Not listed

7. SHIPPING INFORMATION

7.1 Grades of Purity: 99.9+%
7.2 Storage Temperature: Ambient
7.3 Inert Atmosphere: No requirement
7.4 Venting: Safety relief
7.5 IMO Pollution Category: Currently not available
7.6 Ship Type: Currently not available
7.7 Barge Hull Type: Currently not available

8. HAZARD CLASSIFICATIONS

8.1 49 CFR Category: Flammable gas
8.2 49 CFR Class: 2.1
8.3 49 CFR Package Group: Not pertinent.
8.4 Marine Pollutant: No
8.5 NFPA Hazard Classification:

Category	Classification
Health Hazard (Blue).....	1
Flammability (Red).....	4
Instability (Yellow).....	2

8.6 EPA Reportable Quantity: Not listed.
8.7 EPA Pollution Category: Not listed.
8.8 RCRA Waste Number: Not listed
8.9 EPA FWPCA List: Not listed

9. PHYSICAL & CHEMICAL PROPERTIES

9.1 Physical State at 15° C and 1 atm: Gas
9.2 Molecular Weight: 46.1
9.3 Boiling Point at 1 atm: –98°F = –72°C = 201°K
9.4 Freezing Point: –258°F = –161°C = 112°K
9.5 Critical Temperature: 130.5°F = 54.7°C = 327.9°K
9.6 Critical Pressure: 760 psia = 51.6 atm = 5.24 MN/m^2
9.7 Specific Gravity: 0.707 at 0°C (liquid)
9.8 Liquid Surface Tension: 5 dynes/cm = 0.005 N/m at 15°C
9.9 Liquid Water Interfacial Tension: Not pertinent
9.10 Vapor (Gas) Specific Gravity: 1.6
9.11 Ratio of Specific Heats of Vapor (Gas): 1.2097
9.12 Latent Heat of Vaporization: 156 Btu/lb = 86.5 cal/g = 3.62 X 10^5 J/kg
9.13 Heat of Combustion: (est.) –6,500 Btu/lb = –3,600 cal/g = –150 X 10^5 J/kg
9.14 Heat of Decomposition: Not pertinent
9.15 Heat of Solution: Not pertinent
9.16 Heat of Polymerization: Currently not available
9.17 Heat of Fusion: Currently not available
9.18 Limiting Value: Currently not available
9.19 Reid Vapor Pressure: Currently not available

NOTES

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9.20 SATURATED LIQUID DENSITY		9.21 LIQUID HEAT CAPACITY		9.22 LIQUID THERMAL CONDUCTIVITY		9.23 LIQUID VISCOSITY	
Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F	Temperature (degrees F)	British thermal unit inch per hour-square foot-F	Temperature (degrees F)	Centipoise
	NOT PERTINENT		NOT PERTINENT	-140 -130 -120 -110 -100	0.816 0.787 0.758 0.730 0.701		NOT PERTINENT

9.24 SOLUBILITY IN WATER		9.25 SATURATED VAPOR PRESSURE		9.26 SATURATED VAPOR DENSITY		9.27 IDEAL GAS HEAT CAPACITY	
Temperature (degrees F)	Pounds per 100 pounds of water	Temperature (degrees F)	Pounds per square inch	Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F
	INSOLUBLE	-100 -95 -90 -85 -80 -75 -70 -65 -60 -55 -50 -45 -40	13.740 15.770 18.030 20.540 23.310 26.380 29.760 33.460 37.520 41.950 46.780 52.020 57.710	-100 -95 -90 -85 -80 -75 -70 -65 -60 -55 -50 -45 -40	0.16410 0.18570 0.20940 0.23540 0.26370 0.29450 0.32800 0.36410 0.40320 0.44520 0.49040 0.53880 0.59050	-60 -50 -40 -30 -20 -10 0 10 20 30 40 50 60 70 80 90 100 110	0.213 0.216 0.218 0.221 0.224 0.227 0.230 0.232 0.235 0.238 0.241 0.244 0.246 0.249 0.252 0.255 0.258 0.260