



## MATERIAL SAFETY DATA SHEET

CONTACT : **LEONID CHEMICALS**  
 Leonid Chemicals Pvt Ltd  
 62/A-2 1st Stage, Yeshwanthpur Industrial Suburb  
 Ashokpuram School Road  
 Bangalore-560 022, Karnataka, INDIA  
 Ph: +91-80-2337 8354, Fax: +91-80-2357 4827

**SUPPLIER** LEONID CHEMICALS 62/A-2 2nd Stage, Industrial Suburb  
**ADDRESS:** Yeshwanthpur, Bangalore -22, INDIA  
 Ph- +91-80-23378354

### 1. CHEMICAL PRODUCT

**PRODUCT NAME:** PERFLUOROMETHYL VINYL ETHER **SYNONYMS:** PMVE, 3,3,3-Trifluoromethyl-1,2,2-Trifluorovinyl ether

### 2. COMPOSITION, INFORMATION ON INGREDIENTS

<u>Ingredient Name</u>	<u>Formula</u>	<u>CAS #</u>	<u>Concentration</u>	<u>Exposure Limits (PPM)</u>			
				<u>ACGIH TLV</u>	<u>OSHA PEL</u>	<u>MAC</u>	<u>Other STEL</u>
PERFLUOROMETHYLVINYLETHER	C3F6O	1187-93-5	99+%	NE	NE	NE	NE

**Note:** NE = NONE ESTABLISHED

S/A = SIMPLE ASPHYXIANT

### 3. HAZARD IDENTIFICATION

#### EMERGENCY OVERVIEW

Flammable gas under pressure.  
 Can form explosive mixtures with air.

#### POTENTIAL HEALTH EFFECTS

**ROUTES OF ENTRY:** Inhalation

**ACUTE EFFECTS:** To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

**CHRONIC EFFECTS:** None known

**MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE:** None known

**OTHER EFFECTS OF OVEREXPOSURE:** None

#### CARCINOGENICITY (US ONLY):

NTP - No  
 IARC MONOGRAPHS - No  
 OSHA REGULATED - No



---

#### 4. FIRST AID MEASURES

---

**INHALATION:** Immediately remove victim to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen.

**EYE CONTACT:** Immediately flush with copious amounts of water for at least 15 minutes.

**SKIN CONTACT:** Immediately flush with copious amounts of water for at least 15 minutes while removing contaminated clothing.

**INGESTION:** None

IN EVENT OF EXPOSURE, CONSULT A PHYSICIAN

**NOTE TO PHYSICIAN:** Prepare activated charcoal slurry, suspend 50g activated charcoal in 400 mL water in plastic bottle and shake well. Administer 5mL/kg or 350 mL for an average adult.

---

#### 5. FIRE FIGHTING MEASURES

---

**FLASH POINT:** None available

**AUTOIGNITION TEMPERATURE:** 135 deg.C

**FLAMMABLE LIMITS:** Vol. % in Air  
**LOWER:** 7.5  
**UPPER:** 50

**EXTINGUISHING MEDIA:** Carbon dioxide, foam, or dry chemical. Water spray or fog.

**SPECIAL FIRE FIGHTING INSTRUCTION AND EQUIPMENT:** Wear self-contained breathing apparatus and full protective clothing. Keep fire exposed cylinders cool with water spray. If possible, stop the product flow. Stay upwind. Use caution, heat may cause decomposition material to form.

**HAZARDOUS COMBUSTION PRODUCTS:** Toxic carbon monoxide may be given off during combustion. Irritating and toxic fumes and gases.

**UNUSUAL FIRE AND EXPLOSION HAZARDS:** Cylinder rupture may occur under fire conditions. Vapors may travel a considerable distance to the source of ignition and flash back.

---

#### 6. ACCIDENTAL RELEASE MEASURES

---

**CLEAN UP PROCEDURES:** Evacuate and ventilate area. Use a self-contained breathing apparatus in case of emergency or non-routine use. Remove leaking cylinder to exhaust hood or safe outdoor area if this can be done safely.

**SPECIALIZED EQUIPMENT:** Use non-sparking tools.

---

## 7. HANDLING AND STORAGE

---

**PRECAUTIONS TO BE TAKEN IN HANDLING:** Secure cylinder when using to protect from falling. Use suitable hand truck to move cylinders. Use explosion proof ventilation, piping, and equipment. Use only in a well-ventilated area.

**PRECAUTIONS TO BE TAKEN IN STORAGE:** Store in well ventilated areas. Keep valve protection cap on cylinders when not in use. Store away from heat, flame, and sparks.

---

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

---

**ENGINEERING CONTROLS:** Provide adequate general and local exhaust ventilation to maintain concentrations below flammable limits.

**EYE / FACE PROTECTION:** Safety glasses . A safety shower and eyewash station should be readily available.

**SKIN PROTECTION:** Wear suitable protective clothing.

**RESPIRATORY PROTECTION:** Use a self-contained breathing apparatus in case of emergency or non-routine use.

**OTHER PROTECTIVE EQUIPMENT:** Safety shoes when handling cylinders.

---

## 9. PHYSICAL AND CHEMICAL PROPERTIES

---

**APPEARANCE:** Colorless

**ODOR:** Odorless

**PHYSICAL PRESSURE:** Gas

**VAPOR PRESSURE:** 590 kPa @ 25 deg.C

**VAPOR DENSITY (AIR=1):** 5.3

**BOILING POINT (C):** -23

**SOLUBILITY IN WATER:** Negligible

**SPECIFIC GRAVITY (H<sub>2</sub>O=1):** 1.41 @ 25 deg.C

**EVAPORATION RATE:** Gas

**ODOR THRESHOLD:** N/Ap

---

## 10. STABILITY AND REACTIVITY

---

**STABILITY:** Stable under normal storage conditions.

**CONDITIONS TO AVOID:** Storage in poorly ventilated areas. Storage near a heat source. Combustibles especially oils and greases. Sparks, flame, heat and other sources of ignition.

**MATERIALS TO AVOID:** Strong oxidizers.

**HAZARDOUS POLYMERIZATION:** May occur.

**HAZARDOUS DECOMPOSITION:** Toxic carbon monoxide. Irritating and toxic fumes and gases.

---

## 11. TOXICOLOGICAL INFORMATION

---

**LETHAL CONCENTRATION (LC50):** None established

**LETHAL DOSE 50 (LD50):** N/Ap

**TERATOGENICITY:** N/Ap

**REPRODUCTIVE EFFECTS:** N/Ap

**MUTAGENICITY:** N/Ap

---

## 12. ECOLOGICAL INFORMATION

---

No adverse ecological effects are expected.

---

## 13. DISPOSAL CONSIDERATIONS

---

**WASTE DISPOSAL METHOD:** Dispose of non-refillable cylinders in accordance with federal, state and local regulations. Allow gas to vent slowly to atmosphere in an unconfined area or exhaust hood. If the cylinders are the refillable type, return cylinders to supplier with any valve outlet plugs or caps secured and valve protection caps in place.

---

## 14. TRANSPORT INFORMATION

---

**CONCENTRATION:** 99 +%

**DOT DESCRIPTION (US ONLY):**

**PROPER SHIPPING NAME:** Compressed gases, flammable, n.o.s.  
**HAZARD CLASS:** 2.1 (flammable gas)  
**IDENTIFICATION NUMBER:** UN1954  
**REPORTABLE QUANTITIES:** None  
**LABELING:** FLAMMABLE GAS

**ADR / RID (EU Only):** 2,1F

**SPECIAL PRECAUTIONS:** Cylinders should be transported in a secure upright position in a well ventilated truck.

---

## 15. REGULATORY INFORMATION

---

**OSHA: Process Safety Management:** Material is not listed in appendix A of 29 CFR 1910.119 as highly hazardous chemical.

**TSCA:** Material is listed in TSCA inventory.

**SARA:** The threshold planning quantity for material is 10,000 lbs.

**EU NUMBER:** N/AV

**NUMBER IN ANNEX 1 OF DIR 67/548:** Not listed in annex 1.

**EU CLASSIFICATION:** N/AV

**R:** 10

**S:** 3/7/9

---

## 16. OTHER INFORMATION

---

**OTHER PRECAUTIONS:** Protect containers from physical damage. Do not deface cylinders or labels. Cylinders should be refilled by qualified producers of compressed gas. Shipment of a compressed gas cylinder which has not been filled by the owner or with his written consent is a violation of federal law (49 CFR).

**ABBREVIATIONS:** N/Av - Not Applicable N/Av - Not Available SA - Simple Asphyxiant NE - None Established

**DISCLAIMER:** Information included in this document is given to the best of our knowledge, however, no warranty is made that the information is accurate or complete. We do not accept any responsibility for damages by the use of the document.