

## **SAFETY DATA SHEETS**

**This SDS packet was issued with item:**

078943049

**The safety data sheets (SDS) in this packet apply to the individual products listed below. Please refer to invoice for specific item number(s).**

078359776 078359784 078359966 078431483 078490180 078490198 078595778 078595786 078600847 078684385

078692475 078714526 078908137 078914913 078943312

**1. PRODUCT AND COMPANY IDENTIFICATION**

**PRODUCT NAME:** VERRUCA-FREEZE®  
**PRODUCT USE:** Cryosurgical treatment  
**GENERIC NAME:** Mixture of Tetrafluoroethane, Pentafluoroethane, Trifluoroethane


**MANUFACTURER:** CryoSurgery, Inc.  
 5829 Old Harding Pike, Nashville, TN 37205  
 (615) 354-0414 | www.cryosurgeryinc.com

**EMERGENCY CONTACT INFORMATION:**  
**INFOTRAC US & CANADA:** 1 (800) 535-5023  
**INFOTRAC INTERNATIONAL:** 1 (352) 323-3500

**COMMENTS:** To the best of our knowledge, this Safety Data Sheet conforms to the requirements of the US OSHA 29 CFR 1910.1200, Regulation EC 1907/2006 and Canadian Hazardous Products Act.

**2. HAZARD IDENTIFICATION**

**GHS Classification:** Non-Flammable Aerosol  
**GHS Label:**

<b>Signal Word:</b>	Danger
<b>Pictogram:</b>	
<b>Hazard Statements:</b>	H229: Pressurized container
<b>Precautionary Statements:</b>	P251: Do not pierce or burn, even after use P410 + P412: Protect from sunlight. Do not expose to temperatures exceeding 50°C / 120°F

**POTENTIAL HEALTH EFFECTS:**

**SKIN:** Contact with liquid or refrigerated gas can cause cold burns and frostbite. May cause: skin irritation, discomfort, itching, redness or swelling.  
**EYES:** Contact with liquid or refrigerated gas can cause cold burns and frostbite. May cause: eye irritation, tearing, redness, and discomfort.  
**INHALATION:** Misuse or intentional inhalation abuse may cause death without warning symptoms, due to cardiac effects. Other symptoms potentially related to misuse or inhalation abuse are: anesthetic effects, light-headedness, dizziness, confusion, incoordination, drowsiness, or unconsciousness, irregular heartbeat with a strange sensation in the chest, heart thumping, apprehension, feeling of fainting, dizziness or weakness.  
**COMMENTS:** For additional toxicological information, see section 11.

**3. COMPOSITION / INFORMATION ON INGREDIENTS**

Chemical Name	CAS Number
1,1,1,2-Tetrafluoroethane	811-97-2
Pentafluoroethane	354-33-6
1,1,1-Trifluoroethane	420-46-2

**4. FIRST AID MEASURES**

**SKIN CONTACT:** Flush area with lukewarm water. Do not use hot water. If frostbite has occurred, call a physician.  
**EYE CONTACT:** In case of contact, immediately flush eyes with water for at least 15 minutes. Call a physician.  
**INHALATION:** Remove from exposure, lie down. Artificial respiration and/or oxygen may be necessary. Call a physician.

**5. FIREFIGHTING MEASURES**

**FLAMMABLE PROPERTIES:**  
**FLASH POINT:** Does not flash.  
**LOWER EXPLOSION LIMIT:** Method: None per ASTM E681  
**UPPER EXPLOSION LIMIT:** Method: None per ASTM E681  
**FIRE AND EXPLOSION HAZARD:** Cylinders are equipped with pressure and temperature relief devices but may still rupture under fire conditions. Decomposition may occur. Contact of welding or soldering torch flame with high concentrations of refrigerant can result in visible changes in the size and color of the torch flame. This flame effect will only occur in concentrations of product well above the recommended exposure limit. Therefore, stop all work and ventilate to disperse refrigerant vapors from the work area before using any open flames. This substance is not flammable in air at temperatures up to 100°C (212°F) at atmospheric pressure. However, mixtures of this substance with high concentrations of air at elevated pressure and/or temperature can become combustible in the presence of an ignition source. This substance can also become combustible in an oxygen enriched environment (oxygen concentrations greater than that in air). Whether a mixture containing this substance and air, or this substance in an oxygen enriched atmosphere become combustible depends on the inter-relationship of the temperature, pressure, and proportion of oxygen in the mixture. In general, this substance should not be allowed to exist with air above atmospheric pressure or at high temperatures; or in an oxygen enriched environment. For example, this substance should NOT be mixed with air under pressure for leak testing or other purposes. Experimental data have also been reported which indicate combustibility of this substance in the presence of certain concentrations of chlorine.  
**EXTINGUISHING AGENT:** As appropriate for combustibles in area. Extinguishant for other burning material in area is sufficient to stop burning.  
**FIREFIGHTING INSTRUCTIONS:** Use water spray or fog to protect the fire fighters and to cool container. Self-contained breathing apparatus (SCBA) is required if containers rupture and contents are released under fire conditions. Water runoff should be contained and neutralized prior to release.

**6. ACCIDENTAL RELEASE MEASURES**

**NOTE:** Review **FIREFIGHTING MEASURES** and **HANDLING (PERSONNEL)** sections before proceeding with cleanup. Use appropriate personal protective equipment during clean-up.  
**SAFEGUARDS (PERSONNEL):** Ventilate area, especially low or enclosed places where heavy vapors might collect.  
**ACCIDENTAL RELEASE MEASURES:** Avoid open flames and high temperatures. Self-contained breathing apparatus is required if a large release occurs.

**7. HANDLING AND STORAGE**

**HANDLING (PERSONNEL):** This product is considered safe under normal and anticipated handling conditions of temperatures and pressure. Avoid breathing vapors or mist. Avoid contact with skin, eyes and clothing. Provide sufficient air exchange and/or exhaust in work rooms. For personal protection, see section 8. Handle in accordance with good industrial hygiene and safety practice.  
**STORAGE:** Store canister in a cool, dry, well ventilated location. Do not expose to direct sunlight or temperatures above 50°C (122°F) or store near heat or open flame. Avoid static discharge and strong oxidizing agents.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### EXPOSURE LIMIT VALUES:

1,1,1,2-Tetrafluoroethane AEL*	1,000 ppm	8 & 12 hr. TWA
Pentafluoroethane AEL*	1,000 ppm	8 & 12 hr. TWA
1,1,1-Trifluoroethane AEL*	1,000 ppm	8 & 12 hr. TWA

**ENGINEERING CONTROLS:** Provide adequate ventilation for continuous use.

### PERSONAL PROTECTIVE EQUIPMENT:

**RESPIRATORY PROTECTION:** Under normal manufacturing conditions, no respiratory protection is required when using this product.

**HAND PROTECTION:** Material: Impervious gloves.

**EYE PROTECTION:** Wear safety glasses with side shields. Additionally, wear a face shield where the possibility exists for face contact due to splashing, spraying or airborne contact with this material.

**PROTECTIVE MEASURES:** Self-contained breathing apparatus (SCBA) is required if a large release occurs.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**FORM:** Liquefied gas

**COLOR:** Colorless

**ODOR:** Slight, ether-like

**MELTING POINT:** Not available for this mixture

**BOILING POINT:** -46.2°C (-51.2°F)

**% VOLATILE:** 100%

**VAPOR PRESSURE:** 12,546 hPa at 25°C (77°F)

**SPECIFIC GRAVITY:** 1.05 at 25°C (77°F)

**WATER SOLUBILITY:** Not determined

**VAPOR DENSITY:** 3.4 at 25°C (77°F) and 1013 hPa (Air = 1.0)

**EVAPORATION RATE:** > 1 (CCL4 = 1.0)

## 10. STABILITY AND REACTIVITY

**STABILITY:** Stable at normal temperatures and storage conditions.

**CONDITIONS TO AVOID:** Avoid open flames and high temperatures.

**INCOMPATIBILITY:** Alkali metals, alkaline earth metals, powdered metals, powdered metal salts.

**HAZARDOUS DECOMPOSITION PRODUCTS:** Decomposition products are hazardous. This material can be decomposed by high forming hydrofluoric acid and possibly carbonyl fluoride. These materials are toxic and irritating. Avoid contact with decomposition products.

**HAZARDOUS REACTIONS:** Polymerization will not occur.

## 11. TOXICOLOGICAL INFORMATION

**ACUTE:** Contact with the eyes or skin can cause frostbite. Inhalation of vapors may cause irritation of the respiratory tract, dizziness, and headache.

**CHRONIC:** No information available

**SKIN EFFECTS:** Frostbite / burn

**EYE EFFECTS:** Frostbite / burn

**CARCINOGENICITY:** Not considered carcinogenic. Not listed by NTP, IARC or OSHA.

## 12. ECOLOGICAL CONSIDERATION

### AQUATIC TOXICITY:

**1,1,1-Trifluoroethane (HFC-143a):** *Oncorhynchus mykiss* (rainbow trout) > 100 mg/l

**96 h LC50:** Not applicable

**48 h EC50:** *Daphnia* 300 mg/l

**Pentafluoroethane (HFC-125):** *Danio rerio* (zebra fish) > 200 mg/l

**96 h LC50:** *Oncorhynchus mykiss* (rainbow trout) 450 mg/l

**96 h EC50:** Algae 142 mg/l

**48 h EC50:** *Daphnia magna* (water flea) > 200 mg/l

**1,1,1,2-Tetrafluoroethane (HFC-134a)**

**96 h LC50:** *Oncorhynchus mykiss* (rainbow trout) 450 mg/l

**72 h EC50:** Algae > 118 mg/l

**48 h EC50:** *Daphnia magna* (water flea) 980 mg/l

### ENVIRONMENTAL FATE:

**1,1,1 - Trifluoroethane (HFC-143a)**

**BIODEGRADABILITY:** Not readily biodegradable

## 13. DISPOSAL CONSIDERATION

**DISPOSAL METHOD:** Dispose of in accordance with Local, State / Provincial and Federal Regulations. Never puncture or incinerate containers.

## 14. TRANSPORTATION INFORMATION

### U.S. DEPARTMENT OF TRANSPORTATION



**DOT:** SP-12187; SP-12783

**DOT UN NUMBER:** 1950

**PROPER SHIPPING NAME:** Liquefied Gas, N.O.S

**CLASS:** 2.2

**LABELING NUMBER:** 2.2

**PROPER SHIPPING NAME:** Liquefied Gas, N.O.S

**TECHNICAL NAME:** N/A

**PRIMARY HAZARD CLASS / DIVISION:** N/A

**UN / NA NUMBER:** UN1950

**LABEL:** ORM-D / Packages comply

### AIR (ICAO / IATA)



**PROPER SHIPPING NAME:** Liquefied Gas, N.O.S

**TECHNICAL NAME:** N/A

**PRIMARY HAZARD CLASS / DIVISION:** N/A

**UN / ID NUMBER:** ID8000

**PACKING GROUP:** None

### CANADA TRANSPORT OF DANGEROUS GOODS & VESSEL SHIPMENTS



**PROPER SHIPPING NAME:** Liquefied Gas, N.O.S

**PRIMARY HAZARD CLASS / DIVISION:** Non-Flammable Gas

**UN / ID NUMBER:** UN1950

**COMMENTS:** Avoid shipping in hot, unventilated areas; avoid static discharge and strong oxidizing agents.

## 15. REGULATORY INFORMATION

### CANADIAN COMMUNITY: WHMIS SYMBOLS AND CLASSIFICATIONS

**Class A:** (Compressed Gas)

**Class 2.2:** (Non-Flammable Aerosol)



## 16. OTHER INFORMATION

The information contained herein is accurate to the best of our knowledge. CryoSurgery, Inc. makes no warranty of any kind, expressed or implied, concerning the safe use of this material in the process or in combination with other substances.

### SUMMARY OF CHANGES:

05/27/15: Information updated and reformatted to comply with the Globally Harmonized System.

10/05/16: Revised format to fit on 2 pages.

01/20/17: Grammatical error revised.

01/22/19: Revised format for simplified flow, grammatical errors revised, various information updated based on new findings.