OSHA Material Safety Data Sheet

IDENTIFICATION

Verruca-Freeze™
Synonym: Chlorodifluoromethane
CAS Name: Methane, Chlorodifluoromethane (UN 1018)
CAS Registry No.: 75-45-6
Chemical Family: Halogenated Hydrocarbon **Formula:** $CHClF_2$
Product Information: CryoSurgery, Inc. PO Box 50035 Nashville, TN 37205 1-800-729-1624
Transport Emergency: CHEMTREC 1-800-424-9300

PHYSICAL DATA

Boiling Point: -40.8°C
Vapor Pressure: 151 psig @ 25°C
Density: 1.194 g/cc @ 25°C **Color:** Colorless
Vapor Density (Air=1): 3.03 @ 25°C **Appearance:** Clear
Percent Volatile by Volume: 100 **Odor:** Slight etheral odor
Solubility in H_2O: .3% by wt. @ 25°C **Form:** Liquefied gas

HAZARDOUS COMPONENTS

Material: Chlorodifluoromethane 100%

HAZARDOUS REACTIVITY

Stability: Material is stable. However, avoid open flames and high temperatures.

Decomposition: It can be decomposed by high temperature (open flames, glowing metal surfaces, etc.) forming hydrochloric and hydrofluoric acids—possibly carbonyl halides.

Incompatibility: Alkali or alkaline earth metals—powered Al, Zn, Be.

Polymerization: Will not occur.

FIRE AND EXPLOSION DATA

Extinguishing Media: Nonflammable. Other burning material may cause this to burn weakly. Extinguishant for other burning material in area is sufficient to stop burning.
Method: TOC
Autoignition Temperature: 632°C **Flash Point:** None

Flammable Limits in Air, % by Volume:

Lower: Nonflammable
Upper Nonflammable

Autodecomposition Temperature: > 800°F

Fire and Explosion: Cans are equipped with pressure relief devices but still may rupture under fire conditions. Decomposition may occur.

Special Fire Fighting Instructions: Use water spray or fog to cool containers. Self-contained breathing apparatus (SCBA) may be required if cyliniders rupture or contents are released under fire conditions.

Storage Conditions: Clean, dry area. Do not heat above 100°F. Do not puncture or damage containers. Rotate stock.

Title III Hazard Classification:
Acute: Yes **Chronic:** No
Fire: No **Reactivity:** No
Pressure: Yes

NFPA-HMIS Ratings:
Health: 1 **Flammability:** 0
Reactivity: 1 **Personal Protection:** 1

HEALTH HAZARD INFORMATION

Principal Health Hazards: *Inhalation:* Vapor is heavier than air and can cause suffocation by reducing oxygen available for breathing. Breathing high concentrations of this product can cause light-headedness, giddiness, shortness of breath, possible narcosis, possible cardiac irregularities, unconsciousness or death. LC 50 Rats 300,000 ppm/2 hr.

Skin: Liquid contact causes frostbite when used as instructed.
Eyes and Skin: Accidental exposure can cause frostbite.

Note: In screening studies with experimental animals, exposure at approximately 50,000 ppm (v/v) and above, followed by a large intravenous epinephrine challenge, has induced serious cardiac irregularities.

Exposure Limits:	*TLV (ACGIH)*	*PEL(OSHA)*
Chlorodifluoromethane	1000 ppm	none established

Safety Precautions: Avoid breathing vapors.

First Aid for Accidental Exposure:
Inhalation: Remove to fresh air, call a physician. If not breathing give artificial respiration, preferable mouth-to-mouth. If breathing is difficult, give oxygen. Do not give epinephrine or similar drugs.

Eye: Flush with water for 15 minutes. Call a physician.
Skin: Flush with lukewarm water. Treat for frostbite if necessary.

Note to Physicians: Because of a possible increased risk of eliciting cardiac dysrythmias, catecholamine drugs, such as epinephrine, should be considered only as a last resort in life threatening emergencies.

Medical Conditions Possibly Aggravated by Exposure:
Cardiovascular Disease: *See* Principal Health Hazards, Inhalation section.

Other Health Hazards:
It is not listed as a carcinogen by IARC, NTP, or OSHA. In chronic inhalation studies, it has produced a small incidence of tumors in male rats, but not female rats or male or female mice, at a concentration of 50,000 ppm (v/v). In the same studies no effects were seen in any animals at a concentration of 10,000 ppm (v/v). Moreover, based on animal studies and human experiences this product poses no hazard to man relative to systemic toxicity, carcinogenicity, mutagenicity or teratogenicity when occupational exposures are below its TLV.

PROTECTION INFORMATION

Generally Applicable Control Measures: Normal ventilation is generally adequate. Local exhaust should be used when large amounts are released. Mechanical ventilation should be used in low places.

Personal Protective Equipment: Cotton surgical glove liners and/or non-sterile gloves, may be used for protection when using Verruca-Freeze™.

Eyes and Ears: Patient's eyes and ear canal must be covered when working in close proximity to these areas.

DISPOSAL INFORMATION

Spill Leak or Release: Ventilate area—especially low places where heavy vapors might collect. Remove open flames.

Waste Disposal: Allow to evaporate. Do not puncture or incinerate aerosol cans. Comply with federal, state and local regulations.