MATERIAL SAFETY DATA SHEET

Finished Product

TECHSPRAY

Date Issued: 10/22/2002
MSDS Ref. No: ms1672-A
Revision No: New MSDS

Envi-Ro-Tech Freezer

HMIS #1, F1, R0, PPE-A

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Envi-Ro-Tech Freezer
PRODUCT DESCRIPTION: HFC-134a
PRODUCT CODE: 1672/CAN/EUR-10S
CHEMICAL FAMILY: Hydrofluorocarbons

MANUFACTURER

Techspray, L.P.
1001 N.W. 1st Street
P.O. Box 949
Amarillo, TX 79107
Contact: Chemtrec
Product Stewardship: 1-800-858-4043

24 HR. EMERGENCY TELEPHONE NUMBERS

CHEMTREC (U.S.): (800) 424-9300
CANUTEC: (613) 996-6666
Emergency Phone: 1-800-858-4043

2. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	Wt.%	CAS#	EINECS#
1,1,1,2-Tetrafluoroethane	100	811-97-2	223770

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

PHYSICAL APPEARANCE: Clear, Colorless, Volatile Liquid

IMMEDIATE CONCERNS: Warning! High concentrations of vapor can reduce oxygen available for breathing. Harmful if inhaled. May decompose on contact with flames or extremely hot metal surfaces to produce toxic and corrosive products.

POTENTIAL HEALTH EFFECTS

EYES: Liquid contact can cause irritation, which may be severe.

SKIN: Prolonged or repeated contact can result in defatting and drying of the skin which may result in skin irritation and dermatitis (rash).

INHALATION: High concentrations in immediate area can displace oxygen and can cause dizziness, unconsciousness, and possibly death with longer exposure. Keep people away from such vapors without self-

contained breathing apparatus.

SIGNS AND SYMPTOMS OF OVEREXPOSURE

EYES: Can cause severe eye irritation.

SKIN: Exposure to rapidly expanding gas or vaporizing liquid may cause frostbite ("cold" burn).

INHALATION: High concentrations may lead to central nervous system effects (drowsiness, dizziness, nausea, headaches, paralysis and loss of consciousness).

ACUTE TOXICITY: Overexposure may cause dizziness and loss of concentration. At higher levels, CNS depression and cardiac arrhythmia may result.

4. FIRST AID MEASURES

EYES: Immediately flush eyes with plenty of water. Get medical attention, if irritation persists.

SKIN: In case of cold burns (frostbite) caused by rapidly expanding gas or vaporizing liquids, get medical attention promptly.

INGESTION: Ingestion is unlikely because of the physical properties and is not expected to be hazardous. Do not induce vomiting unless instructed to do so by a physician.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Seek immediate medical attention.

NOTES TO PHYSICIAN: Because of the possible disturbances of cardiac rhythm, catecholamine drugs, such as epinephrine, should be used with special caution and only in situations of emergency life support. Treatment of overexposure should be directed at the control of symptoms and the clinical conditions.

5. FIRE FIGHTING MEASURES

FLASHPOINT AND METHOD: Not Applicable

FLAMMABLE LIMITS: None*

AUTOIGNITION TEMPERATURE: > 750°C (1382°F)

FLAMMABLE CLASS: Not Applicable

FLAME PROPAGATION OR BURNING RATE OF SOLIDS: Not Applicable

EXTINGUISHING MEDIA: As appropriate for combustibles in area.

EXPLOSION HAZARDS: This product is not flammable at ambient temperatures and atmospheric pressure. However, this material may become combustible when mixed with air under pressure and exposed to strong ignition sources.

FIRE FIGHTING PROCEDURES: Use water spray to cool containers.

FIRE FIGHTING EQUIPMENT: As in any fire, wear self-contained breathing apparatus pressure-demand,

(MSHA/NIOSH approved or equivalent) and full protective gear.

COMMENTS: *Based on ASHRAE Standard 34 with match ignition.

6. ACCIDENTAL RELEASE MEASURES

GENERAL PROCEDURES: Isolate hazard area. Keep unnecessary and unprotected personnel from entering.

RELEASE NOTES: Spills and releases may have to be reported to Federal and/or local authorities.

7. HANDLING AND STORAGE

HANDLING: Follow standard safety precautions for handling and use of compressed gas cylinders.

STORAGE: Store in a cool place in original container and protect from sunlight.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE GUIDELINES:

OSHA HAZARDOUS COMPONENTS (29 CFR 1910.1200)

		EXPOSURE LIMITS					
		OSHA PEL		ACGIH TLV		Supplier OEL	
		ppm	mg/m^3	ppm	mg/m^3	ppm	mg/m^3
1,1,1,2-Tetrafluoroethane	TWA	NONE	NONE	NONE		1000[1]	

OSHA TABLE COMMENTS:
1. Limit established by supplier

ENGINEERING CONTROLS: Local exhaust ventilation may be necessary to control any air contaminants to within their TLVs during the use of this product.

PERSONAL PROTECTIVE EQUIPMENT

EYES AND FACE: Wear safety glasses with side shields (or goggles) and a face shield.

SKIN: Skin contact with liquid may cause frostbite. General work clothing and gloves (leather) should provide adequate protection. If prolonged contact with the liquid or gas is anticipated, insulated gloves constructed of PVA, neoprene or butyl rubber should be used. Any contaminated clothing should be promptly removed and washed before reuse.

RESPIRATORY: A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: Gas
ODOR: Faint ethereal odor

pH: Neutral
PERCENT VOLATILE: 100 at 20°C (68°F)
VAPOR PRESSURE: 85.8 psi at 21.1°C (70°F)
VAPOR DENSITY: 3.5 (Air=1)
BOILING POINT: -26.2°C (-15.1°F)
FREEZING POINT: -101°C (-149.8°F)
SOLUBILITY IN WATER: Negligible
EVAPORATION RATE: >1 (CCL4=1)
SPECIFIC GRAVITY: 1.22 (water=1) at 20°C (68°F)
MOLECULAR WEIGHT: 102

10. STABILITY AND REACTIVITY

STABLE: YES

HAZARDOUS POLYMERIZATION: NO

CONDITIONS TO AVOID: Stable. However, may decompose if heated.

STABILITY: Stable.

POLYMERIZATION: Will not occur.

HAZARDOUS DECOMPOSITION PRODUCTS: May form hydrochloric and hydrofluoric acids - possibly carbonyl halides, when exposed to high temperatures.

INCOMPATIBLE MATERIALS: Chemically active metals: potassium, calcium, powdered aluminum, magnesium and zinc.

11. TOXICOLOGICAL INFORMATION

ACUTE

INHALATION LC_{50}: >500000 ppm, 4-hour

SENSITIZATION: Cardiac sensitization threshold (dog) 80,000 ppm. NOEL - 50,000 ppm.

SUBCHRONIC:

Subchronic inhalation (rat) NOEL - 50,000 ppm

Chronic NOEL - 10,000 ppm

MUTAGENICITY: Collective data indicate non-mutagenic.

TERATOGENIC EFFECTS: Teratogenic NOEL (rat and rabbit) - 40,000 ppm

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL DATA: Degradability (BOD): This material is a gas at room temperature; therefore, it is unlikely to remain in water.

DISTRIBUTION: Octanol Water Partition Coefficient: Log P=1.06

13. DISPOSAL CONSIDERATIONS

GENERAL COMMENTS: 1,1,1,2-tetrafluoroethane is subject to U.S. Environmental Protection Agency Clean Air Act Regulations, Section 608 in 40 CFR Part 82 regarding refrigerant recycling.

14. TRANSPORT INFORMATION

DOT (DEPARTMENT OF TRANSPORTATION)
PROPER SHIPPING NAME: CONSUMER COMMODITY ORM-D
UN/NA NUMBER: NA
PACKING GROUP: NA
OTHER SHIPPING INFORMATION: Must have a copy of the DOT-E-10232 with each shipment.

AIR (ICAO/IATA)
PROPER SHIPPING NAME: CONSUMER COMMODITY ID8000
PRIMARY HAZARD CLASS/DIVISION: 9
UN/NA NUMBER: ID8000

VESSEL (IMO/IMDG)
PROPER SHIPPING NAME: AEROSOLS IN LIMITED QUANTITIES OF CLASS 2
PRIMARY HAZARD CLASS/DIVISION: 2.2
UN/NA NUMBER: UN1950

15. REGULATORY INFORMATION

UNITED STATES

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

311/312 HAZARD CATEGORIES: IMMEDIATE / PRESSURE

PRESSURE GENERATING: YES **ACUTE:** YES

313 REPORTABLE INGREDIENTS: Not considered a SARA 313 "Toxic Chemical".

CERCLA (COMPREHENSIVE RESPONSE, COMPENSATION, AND LIABILITY ACT)

CERCLA REGULATORY: Releases to air, land, or water which exceed the RQ must be reported to the National Response Center [(800)424-8802] and to your Local Emergency Planning Committee.

TSCA (TOXIC SUBSTANCE CONTROL ACT)

TSCA REGULATORY: This product is listed on the TSCA Inventory.

CANADA

DOMESTIC SUBSTANCE LIST (INVENTORY): All components of this product are listed on the Canadian DSL.

GENERAL COMMENTS: 1,1,1,2-tetrafluoroethane is subject to U.S. Environmental Agency Clean Air Act Regulations,
(40CFR Part 82).

COMMENTS: WARNING: Contains 1,1,1,2-tetrafluoroethane (HFC-134a), a greenhouse gas which may contribute to global warming.

16. OTHER INFORMATION

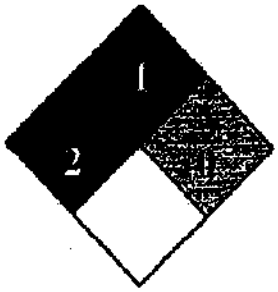
APPROVED BY: Dana M. Morelos **TITLE:** Chemist

PREPARED BY: Steve Cook

HMIS RATING

HEALTH:	1
FLAMMABILITY:	1
[illegible]	0
PERSONAL PROTECTION:	

NFPA CODES



DATA SOURCES: Code of Federal Regulations (CFR)
The Sigma-Aldrich Library of Regulatory and Safety Data
OSHA Hazard Communication Standard (29CFR1910.1200)
Various Federal, State and Local Regulations

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