MATERIAL SAFETY DATA SHEET

Date Issued: 04/24/2012  
MSDS No: 1583-A

Eco-Freezer

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Eco-Freezer  
PRODUCT DESCRIPTION: Diagnostic Freeze Spray  
PRODUCT CODE: 1583-10S

24 HR. EMERGENCY TELEPHONE NUMBERS

Techspray, L.P.  
1001 N.W. 1st Street  
P.O. Box 949  
Amarillo, TX 79107

Emergency Contact: Chemtrec  
Emergency Phone: 1-800-858-4043  
Service Number: 1-800-858-4043

CHEMTREC CCN#21858 (US Transportation) : (800) 424 - 9300
CANUTEC (Canadian Transportation) : (613) 996 - 6666
Emergency Phone: (800) 858 - 4043

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

PHYSICAL APPEARANCE: Liquified gas, colorless, slight odor

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). Liquid contact could cause frostbite.

INGESTION: Not likely to be ingested.

INHALATION: May cause central nervous system effects, cardiac arrhythmia, drowsiness and dizziness.

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).

INGESTION: Not a likely route of exposure.

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.

CHRONIC EFFECTS: None known.

MUTAGENICITY: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP, IARC, or OSHA.

3. COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Wt.%</th>
<th>CAS</th>
</tr>
</thead>
<tbody>
<tr>
<td>trans-1,3,3,3-tetrafluoroprop-1-ene</td>
<td>100</td>
<td>29118-24-9</td>
</tr>
</tbody>
</table>
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.

5. FIRE FIGHTING MEASURES

**FLASHPOINT AND METHOD:** None

**FLAMMABLE LIMITS:** Product exhibits flame limits at temperatures in excess of 28 C.

**AUTOIGNITION TEMPERATURE:** 368°C (694°F)

**FLAMMABLE CLASS:** Not Applicable

**FLAME PROPAGATION OR BURNING RATE OF SOLIDS:** Not Applicable

**EXTINGUISHING MEDIA:** Foam, carbon dioxide, dry chemical

**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.

**HAZARDOUS DECOMPOSITION PRODUCTS:** Some risk may be expected of corrosive and toxic decomposition products. Fire may cause evoution of hydrogen fluoride.

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.

**STORAGE TEMPERATURE:** Contents under pressure. Do not expose to heat or store above (120) F (49) C.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**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
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: 60.799 psi at 20°C (68°F)
VAPOR DENSITY: 4 (Air=1)
BOILING POINT: -19°C (-2°F)
FLASHPOINT AND METHOD: None
SOLUBILITY IN WATER: 0.373 g/l

DENSITY: 1.12 at 21.1°C (70°F)

10. STABILITY AND REACTIVITY

STABLE: Yes
HAZARDOUS POLYMERIZATION: No
STABILITY: Stable.
POLYMERIZATION: Will not occur.
CONDITIONS TO AVOID: Stable. However, may decompose if heated.

HAZARDOUS DECOMPOSITION PRODUCTS: When exposed to high temperatures or flames this product may form fluorocarbons and hydrogen fluoride.

INCOMPATIBLE MATERIALS: Incompatible with alkali or alkaline earth metals - powdered Al, Zn, Be, etc.

11. TOXICOLOGICAL INFORMATION

ACUTE

INHALATION LC₅₀: > 100000 ppm, 4-hour, mouse

CHRONIC: HFO-1234ze repeated dose toxicity, rat, 13 weeks - NOEL 5000 ppm

CARCINOGENICITY

IARC: NOT listed
NTP: NOT listed
OSHA: NOT listed

IRRITATION: OECD Test guideline, Rabbit - no skin irritation

SENSITIZATION: Cardiac sensitization, dogs - did not cause sensitization in laboratory animals

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL DATA: Aerobic degradability: Not readily biodegradable.

13. DISPOSAL CONSIDERATIONS
GENERAL COMMENTS: Dispose of in a manner consistent with federal, state, and local regulations.

14. TRANSPORT INFORMATION

DOT (DEPARTMENT OF TRANSPORTATION)

PROPER SHIPPING NAME: CONSUMER COMMODITY ORM-D
UN/NA NUMBER: N/A
PACKING GROUP: NA

ROAD AND RAIL (ADR/RID)

PROPER SHIPPING NAME: Liquefied Gas, n.o.s.
UN NUMBER: 3163
HAZARD CLASS: 2.2

AIR (ICAO/IATA)

SHIPPING NAME: Liquefied Gas, n.o.s.
TECHNICAL NAME: trans-1,3,3,3-tetrafluoroprop-1-ene
UN/NA NUMBER: UN3163
PRIMARY HAZARD CLASS/DIVISION: 2.2
PACKING GROUP: NA

VESSEL (IMO/IMDG)

SHIPPING NAME: Liquefied Gas, n.o.s.
TECHNICAL NAME: trans-1,3,3,3-tetrafluoroprop-1-ene
UN/NA NUMBER: 3159
PRIMARY HAZARD CLASS/DIVISION: 2.2
PACKING GROUP: NA
LIMITED QUANTITY: 120mL

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".

TSCA (TOXIC SUBSTANCE CONTROL ACT)

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

CALIFORNIA PROPOSITION 65: This product does not contain any chemicals known to the State of California to cause cancer.

CANADA

WHMIS CLASS: Class A - Aerosol
DOMESTIC SUBSTANCE LIST (INVENTORY): All components of this product are listed on the Canadian DSL.

16. OTHER INFORMATION

APPROVED BY: Pierce A. Pillon  TITLE: Chemist

<table>
<thead>
<tr>
<th>HMIS RATING</th>
<th>NFPA CODES</th>
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<tbody>
<tr>
<td>HEALTH</td>
<td>2</td>
</tr>
<tr>
<td>FLAMMABILITY</td>
<td>0</td>
</tr>
<tr>
<td>PHYSICAL HAZARD</td>
<td>0</td>
</tr>
<tr>
<td>PERSONAL PROTECTION</td>
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