1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Anti-Static Freezer
PRODUCT DESCRIPTION: HFC-134a with Anti-stat
PRODUCT CODE: 1747/CAN/EUR-10S/15S
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 (US Transportation) : (800) 424 - 9300
CANUTEC (Canadian Transportation) : (613) 996 - 6666
Emergency Phone : (800) 858 - 4043

2. COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Content</th>
<th>CAS</th>
<th>EINECS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,1,1,2-Tetrafluoroethane (HFC-134a)</td>
<td>98</td>
<td>811-97-2</td>
<td>223770</td>
</tr>
<tr>
<td>Methanol</td>
<td>2</td>
<td>67-56-1</td>
<td>200-659-6</td>
</tr>
</tbody>
</table>

EEC LABEL SYMBOL AND CLASSIFICATION

R20/22 - Harmful by inhalation and if swallowed.

EEC Harmful - "Xn"

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. Very mild (if any) eye/skin irritant.

POTENTIAL HEALTH EFFECTS

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

SKIN: Liquid contact could cause frostbite.

INGESTION: Not likely to be ingested.

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).

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: Not Established

CARCINOGENICITY: Not Established

MUTAGENICITY: None known.

REPRODUCTIVE TOXICITY

REPRODUCTIVE EFFECTS: Not yet Determined

TERATOGENIC EFFECTS: Contains Methanol which has been established as a teratogen by inhalation. See Sec.11 for details.

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)
### Chemical Name

<table>
<thead>
<tr>
<th></th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
<th>Supplier OEL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ppm</td>
<td>mg/m³</td>
<td>ppm</td>
</tr>
<tr>
<td>1,1,1,2-Tetrafluorothane (HFC-134a)</td>
<td>TWA NE</td>
<td>NE</td>
<td>1,000 ppm</td>
</tr>
<tr>
<td>Methanol</td>
<td>TWA S 200 ppm</td>
<td>S 200 ppm</td>
<td>260 mg/m³</td>
</tr>
<tr>
<td></td>
<td>STEL 250 ppm</td>
<td>310 mg/m³</td>
<td>250 ppm</td>
</tr>
</tbody>
</table>

**OSHA TABLE COMMENTS:**

1. *(AEL)=Acceptable Exposure Limit as established by the manufacture
2. S = Skin

**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 Hydrofluoric acid or Carbonyl Halides.

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

11. TOXICOLOGICAL INFORMATION

<table>
<thead>
<tr>
<th>INGREDIENT(S)</th>
<th>ORAL LD&lt;sub&gt;50&lt;/sub&gt; (rat)</th>
<th>DERMAL LD&lt;sub&gt;50&lt;/sub&gt; (rabbit)</th>
<th>INHALATION LC&lt;sub&gt;50&lt;/sub&gt; (rat)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,1,1,2-Tetrafluoroethane (HFC-134a)</td>
<td></td>
<td></td>
<td>500000 - ppm</td>
</tr>
<tr>
<td>Methanol</td>
<td>6.2 - 12.98 mg/kg</td>
<td>16 - g/kg</td>
<td>64000 - ppm</td>
</tr>
</tbody>
</table>

ACUTE

**EYES:** Moderately to severely irritating

**DERMAL LD<sub>50</sub>**: Mildly to moderately irritating.

**ORAL LD<sub>50</sub>:** Oral Rat LD50: 5628 mg/kg for methanol.

**INHALATION LC<sub>50</sub>:** > 500000 ppm, 4-hour

Inhalation Rat LC50: 64000 ppm/4H for methanol.

**EYE EFFECTS:** High vapor concentrations may cause moderate to severe eye irritation.

**SUBCHRONIC:** Subchronic inhalation (rat) NOEL - 50,000 ppm

**CHRONIC:** Chronic NOEL - 10,000 ppm

**CARCINOGENICITY:**

**IARC:** NOT listed

**OSHA:** NOT listed

**MUTAGENICITY:** Collective data indicate non-mutagenic.

**REPRODUCTIVE EFFECTS:** Not Established

**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
- **TECHNICAL 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.

**ROAD AND RAIL (ADR/RID):**
- **KEMLER NUMBER:** UN1950
- **HAZARD CLASS:** 2.2

**AIR (ICAO/IATA)**
- **PROPER SHIPPING NAME:** CONSUMER COMMODITY ID8000
- **UN/NA NUMBER:** ID8000
- **PRIMARY HAZARD CLASS/DIVISION:** 2.2
- **PACKING GROUP:** NA

**VESSEL (IMO/IMDG)**
- **PROPER SHIPPING NAME:** AEROSOLS IN LIMITED QUANTITIES OF CLASS 2
- **UN/NA NUMBER:** UN1950
- **NOTE:** Page 2102

15. REGULATORY INFORMATION

**UNITED STATES**

**SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)**
- **311/312 HAZARD CATEGORIES:** IMMEDIATE / PRESSURE
- **FIRE:** NO  **PRESSURE GENERATING:** YES  **REACTIVITY:** NO  **ACUTE:** YES  **CHRONIC:** NO
- **313 REPORTABLE INGREDIENTS:** Methanol (<1%)

**302/304 EMERGENCY PLANNING**
- **EMERGENCY PLAN:** Methanol (#67-56-1)

**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. Methanol (#67-56-1)

http://www.techni-tool.com
CERCLA RQ: 5000 lbs

TSCA (TOXIC SUBSTANCE CONTROL ACT)

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

RCRA STATUS: U154


OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA)

29 CFR 1910.119---PROCESS SAFETY MANAGEMENT OF HIGHLY HAZARDOUS CHEMICALS: None of the chemicals in this product are considered highly hazardous by OSHA.

CANADA

WHMIS (WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM): This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

WHMIS CLASS: Class A, Class D2B.

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

EUROPEAN COMMUNITY

EEC LABEL SYMBOL AND CLASSIFICATION

R20/22 - Harmful by inhalation and if swallowed.

EEC Harmful - "Xn"

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

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

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

16. OTHER INFORMATION

APPROVED BY: Pierce A. Pillon	TITLE: Chemist

PREPARED BY: Steve Cook

REVISION SUMMARY Revision #: 6 This MSDS replaces the August 15, 2005 MSDS. Any changes in information are as follows: In Section 16 NFPA Flammability NFPA Health NFPA Reactivity
Anti-Static Freezer

**HMIS RATING**

<table>
<thead>
<tr>
<th>Category</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
<td>1</td>
</tr>
<tr>
<td>Flammability</td>
<td>0</td>
</tr>
<tr>
<td>Physical Hazard</td>
<td>1</td>
</tr>
<tr>
<td>Personal Protection</td>
<td></td>
</tr>
</tbody>
</table>

**NFPA CODES**

- Health: 1
- Flammability: 0
- Physical Hazard: 2
- Personal Protection: 0


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