# MATERIAL SAFETY DATA SHEET

**Date Issued:** 08/22/2012
**MSDS No:** 1671/1672/1697
**Date Revised:** 09/04/2012
**Revision No:** 1

## Dusting Gas/Freeze Spray

## 1. PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** Dusting Gas/Freeze Spray
**PRODUCT DESCRIPTION:** Inert Dusting Gas
**PRODUCT CODE:** 1671/1672/1697
**ACTIVE INGREDIENT(S):** 1,1,1,2-Tetrafluoroethane

**MANUFACTURER**
Tech Spray, LLC
1001 NW 1st Street
P.O. Box 949
Amarillo, TX 79107

**24 HR. EMERGENCY TELEPHONE NUMBERS**
**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:** 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.

## 3. COMPOSITION / INFORMATION ON INGREDIENTS

| Chemical Name | Wt.% | CAS | EINECS |
|---|---|---|---|
| 1,1,1,2-Tetrafluoroethane | 100 | 811-97-2 | 212-337-0 |

## 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.

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**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.

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

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

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**EXPOSURE GUIDELINES**

| OSHA HAZARDOUS COMPONENTS (29 CFR1910.1200) | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | EXPOSURE LIMITS | | | | | |
| | | OSHA PEL | | ACGIH TLV | | SupplierOEL | |
| **Chemical Name** | | **ppm** | **mg/m³** | **ppm** | **mg/m³** | **ppm** | **mg/m³** |
| 1,1,1,2-Tetrafluoroethane | **TWA** | NE | | NE | | 1,000 ppm [1] | [1] |
| **OSHA TABLE COMMENTS:**<br>**1**. * (AEL)=Acceptable Exposure Limit as established by the manufacture | | | | | | | |

**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

| Chemical Name | Boiling Point (°C) | Freezing Point (°C) | Solubility in Water | Specific Gravity |
|---|---|---|---|---|
| 1,1,1,2-Tetrafluoroethane | -26.4 | -101 | NEGLIGIBLE | 1.21 |

**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)

**FLASHPOINT AND METHOD:** Not Applicable

**SOLUBILITY IN WATER:** Negligible

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

**SPECIFIC GRAVITY:** 1.220 (water=1) at 20°C (68°F)

## 10. STABILITY AND REACTIVITY

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**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 hydrochloric and hydrofluoric acids - possibly carbonyl halides.

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

## 11. TOXICOLOGICAL INFORMATION

**ACUTE**

| Chemical Name | INHALATION $LC_{50}$ (rat) |
|---|---|
| 1,1,1,2-Tetrafluoroethane | > 500000 ppm |

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

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

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

**CARCINOGENICITY**

| Chemical Name | NTP Status | IARC Status | OSHA Status |
|---|---|---|---|
| 1,1,1,2-Tetrafluoroethane | NOT LISTED | NOT LISTED | NOT LISTED |

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

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

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

## 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:** 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, DOT-SP 15146

**PRIMARY HAZARD CLASS/DIVISION:** 9

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## Dusting Gas/Freeze Spray

**UN/NA NUMBER:** N/A

**PACKING GROUP:** NA

**NAERG:** #12

**OTHER SHIPPING INFORMATION:** Must have a copy of DOT-SP 15146 with each shipment.

**SPECIAL SHIPPING NOTES:** Domestic Shipments Only. For International shipments use 1,1,1,2-Tetrafluoroethane, UN3159, 2.2; Pkg. Instr. 200.; Authorization: DOT-SP 15146.; **NOTE:** Copy of the Exemption is required with all shipments.; HAZARD LABEL: Non-Flammable Gas.; ["LTD QTY of class 2" when <120mL (5 oz)]

**ROAD AND RAIL (ADR/RID)**

**KEMLER NUMBER:** UN3159

**HAZARD CLASS:** 2.2

**AIR (ICAO/IATA)**

**SHIPPING NAME:** CONSUMER COMMODITY, ORM-D-AIR, DOT-SP 15146

**UN/NA NUMBER:** ID8000

**PRIMARY HAZARD CLASS/DIVISION:** 9

**PACKING GROUP:** NA

**VESSEL (IMO/IMDG)**

**SHIPPING NAME:** 1,1,1,2-Tetrafluoroethane

**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".

**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)**

| Chemical Name | CAS |
|---|---|
| 1,1,1,2-Tetrafluoroethane | 811-97-2 |

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

**CLEAN AIR ACT**

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| Chemical Name | Wt.% | CAS |
|---|---|---|
| 1,1,1,2-Tetrafluoroethane | 100 | 811-97-2 |

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

**CANADA**

**WHMIS CLASS:** Class A, Class D2B.

**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:** Pierce A. Pillon **TITLE:** Chemist

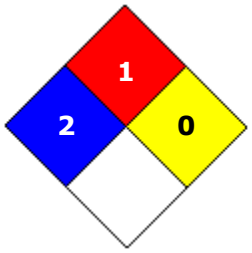
**PREPARED BY:** Lindsey Shehan

**REVISION SUMMARY:** This MSDS replaces the 08/22/2012 MSDS. Revised: **Section 1:** PRODUCT CODE.

**HMIS RATING**

| | |
|---|---|
| HEALTH | 1 |
| FLAMMABILITY | 1 |
| PHYSICAL HAZARD | 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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