

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.

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

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

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

EXPOSURE GUIDELINES

OSHA HAZARDOUS COMPONENTS <input type="checkbox"/> 29 CFR1910.1200 <input type="checkbox"/>							
		EXPOSURE LIMITS					
		OSHA PEL		ACGIH TLV		Supplier OEL	
Chemical Name		ppm	mg/m ³	ppm	mg/m ³	ppm	mg/m ³
1,1,1,2-Tetrafluoroethane	TWA	NE		NE		1,000 ppm [1]	[1]

OSHA TABLE COMMENTS:
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

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

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 <input type="checkbox"/> rat <input type="checkbox"/>
1,1,1,2-Tetrafluoroethane	> 500000 ppm

INHALATION LC₅₀: > 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

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

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

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

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

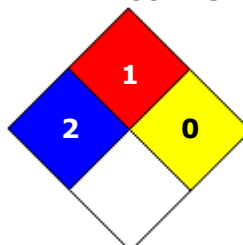
PREPARED BY: Lindsey Shehan

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

HMIS RATING

HEALTH	<input type="checkbox"/>	1
FLAMMABILITY	<input type="checkbox"/>	1
PHYSICAL HAZARD	<input type="checkbox"/>	0
PERSONAL PROTECTION	<input type="checkbox"/>	

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

MANUFACTURER DISCLAIMER: To the best of our knowledge, the information contained herein is accurate. However, neither Tech Spray, L.P., or any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist.



U.S. Department
of Transportation

East Building, PHH - 30
1200 New Jersey Avenue, Southeast
Washington, D.C. 20590

**Pipeline and Hazardous
Materials Safety Administration**

SPECIAL PERMIT AUTHORIZATION

DOT-SP 15146

EXPIRATION DATE: August 30, 2013

GRANTEE: ITW Tech Spray LLC
AMARILLO, TX

In response to your February 21, 2012 application for Special Permit DOT-SP 15146, ITW Tech Spray LLC is hereby granted authorization under DOT-SP 15146 in accordance with 49 CFR § 107.105.

Copies of this special permit may be obtained by accessing the Office of Hazardous Materials Safety Homepage at http://hazmat.dot.gov/sp_app/special_permits/spec_perm_index.htm. The most recent revision of the special permit supersedes all previous revisions of the special permit. Photo reproductions and legible reductions of this special permit are permitted. Any alteration of this special permit is prohibited.

If you have questions regarding this action please call the Office of Hazardous Materials Special Permits and Approvals at (202) 366-4535.

Issued in Washington D.C. on February 23, 2012.

for Dr. Magdy El-Sibaie
Associate Administrator for Hazardous Materials Safety

February 23, 2012



U.S. Department
of Transportation

East Building, PHH-30
1200 New Jersey Avenue S.E.
Washington, D.C. 20590

**Pipeline and Hazardous
Materials Safety Administration**

DOT-SP 15146
(THIRD REVISION)

(FOR RENEWAL, SEE 49 CFR § 107.109)

1. GRANTEE: (See Individual Authorization Letter)
2. PURPOSE AND LIMITATION:
 - a. This special permit authorizes the transportation in commerce of those materials specified in Paragraph 6 in non-DOT specification, non-refillable, inside metal containers conforming in part with DOT specification 2Q. This special permit provides no relief from the Hazardous Materials Regulations (HMR) other than as specifically stated herein. The most recent revision supersedes all previous revisions.
 - b. The safety analyses performed in the development of this special permit only considered the hazards and risks associated with the transportation in commerce.
 - c. Unless otherwise stated herein, this special permit consists of the special permit authorization letter issued to the grantee together with this document.
3. REGULATORY SYSTEM AFFECTED: 49 CFR Parts 106, 107 and 171-180.
4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR § 173.304(d) in that a non-DOT specification package is not authorized, except as specified herein.
5. BASIS: This special permit is based on the application of ITW Tech Spray LLC dated September 29, 2010, November 19, 2010, June 3, 2011 and August 22, 2011 submitted in accordance with § 107.105 and the public proceeding thereon and additional information submitted on February 1, 2012.

February 23, 2012

6. HAZARDOUS MATERIALS (49 CFR § 172.101):

Hazardous Materials Description			
Proper Shipping Name	Hazard Class/ Division	Identification Number	Packing Group
1,1,1,2-Tetrafluoroethane or Refrigerant gas R 134a	2.2	UN3159	N/A
Refrigerant gases, n.o.s.	2.2	UN1078	N/A

7. SAFETY CONTROL MEASURES:

a. PACKAGING - Prescribed packaging are four non-DOT specification, non-refillable inside metal containers conforming with DS Containers drawings "Container Specification - DOT SP 15146, 205x604 and 205x710 AEROSOL CONTAINERS" dated August 22, 2011 and "Container Specification - DOT SP 15146, 211x604 and 211x713 AEROSOL CONTAINERS" dated August, 19, 2011, on file with the Office of Hazardous Materials Special Permits and Approvals (OHMSPA) and DOT Specification 2Q (§ 178.33a) except as follows:

§ 178.33a-2 Type and size.

(a) * * *

(b) The maximum capacity of the containers manufactured under this special permit may not exceed 665 cubic centimeters (22.5 fluid ounces). The maximum diameter must not be more than 2.7 inches.

§ 178.33a-6 Manufacture.

(a) * * *

(b) Containers are of two-piece construction. No side seam is authorized. The container consists of one crimped bottom seam only.

(c) Ends: The bottom must be designed to buckle prior to the burst of the sidewall.

February 23, 2012

§ 178.33a-8 Tests.

(a) Each 25,000 containers or less, successively produced as a batch or part thereof must constitute a lot. One container taken randomly from the lot and complete with the ends assembled must be pressure tested to destruction. The end must not buckle below 261 psig. The burst pressure of containers must not be less than 320 psig.

(b) If the test container fails to meet the above requirements, the lot must be rejected. However, an additional 5 randomly selected pairs of containers from that lot may be pressure tested to qualify that lot. If any of the additional test containers fail the pressure test, that lot must be rejected.

§ 173.33a-9 Marking.

(a) * * *

(1) Containers must be marked "DOT-SP 15146" in lieu of "DOT 2Q".

(2) * * *

b. TESTING - Prior to shipment, each completed container must be heated until the pressure in the container is equivalent to the equilibrium pressure of the lading at 131°F. Lading equilibrium pressure may not exceed 200 psig at 131°F. Acceptable containers must show no evidence of leakage, distortion, or other defect.

c. OPERATIONAL CONTROLS

(1) Test data obtained under the qualification burst tests in §178.33a-8 must be kept on file and be made available upon request by OHMSPA.

(2) The liquid content of the lading may not completely fill the container at 131°F.

(3) The container must be packed in a strong outside packaging as prescribed in § 173.301(a) (9).

(4) Each outside packaging must be marked "INSIDE CONTAINERS COMPLY WITH DOT-SP 15146".

February 23, 2012

(5) Containers filled with a material meeting the definition of a "consumer commodity" in § 171.8 may be reclassified as an ORM-D and shipped as "consumer commodity" in accordance with § 173.306(i). These outside packagings are not required to be marked "INSIDE CONTAINERS COMPLY WITH DOT-SP 15146" as specified above in paragraph 7.c.(4).

8. SPECIAL PROVISIONS:

a. A person who is not a holder of this special permit who receives a package covered by this special permit may reoffer it for transportation provided no modification or change is made to the package and it is reoffered for transportation in conformance with this special permit and the HMR.

b. A current copy of this special permit must be maintained at each facility where the package is offered or reoffered for transportation.

c. MARKING -

(1) Each container must be plainly and durably marked "DOT-SP 15146" as specified in § 172.301(c) and be shipped in strong outside packagings.

(2) Each outside packaging must be marked "INSIDE CONTAINERS COMPLY WITH DOT-SP 15146".

9. MODES OF TRANSPORTATION AUTHORIZED: Motor Vehicle, Cargo aircraft, Cargo Vessel, Rail Freight.

10. MODAL REQUIREMENTS: A current copy of this special permit must be carried aboard each cargo vessel, aircraft, or motor vehicle used to transport packages covered by this special permit. The shipper must furnish a copy of this special permit to the air carrier before or at the time the shipment is tendered.

11. COMPLIANCE: Failure by a person to comply with any of the following may result in suspension or revocation of this special permit and penalties prescribed by the Federal hazardous materials transportation law, 49 U.S.C. 5101 et seq:

- o All terms and conditions prescribed in this special permit and the Hazardous Materials Regulations, 49 CFR Parts 171-180.
- o Persons operating under the terms of this special permit must comply with the security plan requirement in Subpart I of Part 172 of the HMR, when applicable.
- o Registration required by § 107.601 et seq., when applicable.

Each "Hazmat employee", as defined in § 171.8, who performs a function subject to this special permit must receive training on the requirements and conditions of this special permit in addition to the training required by §§ 172.700 through 172.704.

No person may use or apply this special permit, including display of its number, when this special permit has expired or is otherwise no longer in effect.

Under Title VII of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)—"The Hazardous Materials Safety and Security Reauthorization Act of 2005" (Pub. L. 109-59), 119 Stat. 1144 (August 10, 2005), amended the Federal hazardous materials transportation law by changing the term "exemption" to "special permit" and authorizes a special permit to be granted up to two years for new special permits and up to four years for renewals.

12. REPORTING REQUIREMENTS: Shipments or operations conducted under this special permit are subject to the Hazardous Materials Incident Reporting requirements specified in 49 CFR §§ 171.15 Immediate notice of certain hazardous materials incidents, and 171.16 Detailed hazardous materials incident reports. In addition, the grantee(s) of this

February 23, 2012

special permit must notify the Associate Administrator for Hazardous Materials Safety, in writing, of any incident involving a package, shipment or operation conducted under terms of this special permit.

Issued in Washington, D.C.:



for Dr. Magdy El-Sibaie
Associate Administrator for Hazardous Materials Safety

Address all inquiries to: Associate Administrator for Hazardous Materials Safety, Pipeline and Hazardous Material Safety Administration, U.S. Department of Transportation, East Building PHH-30, 1200 New Jersey Avenue, Southeast, Washington, D.C. 20590.

Copies of this special permit may be obtained by accessing the Hazardous Materials Safety Homepage at http://hazmat.dot.gov/sp_app/special_permits/spec_perm_index.htm. Photo reproductions and legible reductions of this special permit are permitted. Any alteration of this special permit is prohibited.

PO: BEMOORE:dl