



4801 North Ravenswood Avenue

Chicago, IL 60640-4496

Phone: (773) 907-5181

Fax: (773) 907-5180

E-mail (techsupport@spctechnology.com)

Doc. No.: MSDS-015  
DCP No.: 1653  
Effective Date: 11/17/03  
New MSDS

# Material Safety Data Sheet

Emergency/Information: (800) 420-8021

---

## 1. PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** Dusting Gas

**PRODUCT DESCRIPTION:** Inert Dusting Gas

**SPC Part Number:** SPC12778

**CHEMICAL FAMILY:** Hydrofluorocarbons

**GENERIC NAME:** HFC-134a

## 2. COMPOSITION / INFORMATION ON INGREDIENTS

<u>Chemical Name</u>	<u>Wt. %</u>	<u>CAS#</u>	<u>EINECS#</u>
1,1,1,2-Tetrafluoroethane (HFC-134a)	100	811-97-2	212-377-0

### EEC LABEL CLASSIFICATION

EEC Irritant - "Xi"

---

## 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.



4801 North Ravenswood Avenue  
Chicago, IL 60640-4496

Phone: (773) 907-5181

Fax: (773) 907-5180

E-mail (techsupport@spctechnology.com)

Doc. No.: MSDS-015  
DCP No.: 1653  
Effective Date: 11/17/03  
New MSDS

# Material Safety Data Sheet

Emergency/Information: (800) 420-8021

---

## 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



4801 North Ravenswood Avenue  
Chicago, IL 60640-4496  
Phone: (773) 907-5181  
Fax: (773) 907-5180  
E-mail (techsupport@spctechnology.com)

Doc. No.: MSDS-015  
DCP No.: 1653  
Effective Date: 11/17/03  
New MSDS

# Material Safety Data Sheet

Emergency/Information: (800) 420-8021

---

**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



4801 North Ravenswood Avenue  
 Chicago, IL 60640-4496  
 Phone: (773) 907-5181  
 Fax: (773) 907-5180  
 E-mail (techsupport@spctechnology.com)

Doc. No.: MSDS-015  
 DCP No.: 1653  
 Effective Date: 11/17/03  
 New MSDS

# Material Safety Data Sheet

Emergency/Information: (800) 420-8021

---

**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)

	<u>EXPOSURE LIMITS</u>			
	<u>OSHA PEL</u>		<u>ACGIH TLV</u>	
	<u>ppm</u>	<u>mg/m<sup>3</sup></u>	<u>ppm</u>	<u>mg/m<sup>3</sup></u>
1,1,1,2-Tetrafluoroethane (HFC-134a)	TWA	NONE	NONE	NONE

**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



4801 North Ravenswood Avenue  
Chicago, IL 60640-4496  
Phone: (773) 907-5181  
Fax: (773) 907-5180  
E-mail (techsupport@spctechnology.com)

Doc. No.: MSDS-015  
DCP No.: 1653  
Effective Date: 11/17/03  
New MSDS

# Material Safety Data Sheet

## Emergency/Information: (800) 420-8021

---

**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)

---

### 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



4801 North Ravenswood Avenue  
Chicago, IL 60640-4496  
Phone: (773) 907-5181  
Fax: (773) 907-5180  
E-mail (techsupport@spctechnology.com)

Doc. No.: MSDS-015  
DCP No.: 1653  
Effective Date: 11/17/03  
New MSDS

# Material Safety Data Sheet

Emergency/Information: (800) 420-8021

---

## ACUTE

**INHALATION LC<sub>50</sub>:** >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:** 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:** 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



4801 North Ravenswood Avenue

Chicago, IL 60640-4496

Phone: (773) 907-5181

Fax: (773) 907-5180

E-mail (techsupport@spctechnology.com)

Doc. No.: MSDS-015  
DCP No.: 1653  
Effective Date: 11/17/03  
New MSDS

# Material Safety Data Sheet

Emergency/Information: (800) 420-8021

---

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

**PRIMARY HAZARD CLASS/DIVISION:** No classification

**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

**PACKING GROUP:** NA

**IATA NOTE:** Domestic shipments only.

## VESSEL (IMO/IMDG)

**PROPER SHIPPING NAME:** AEROSOLS IN LIMITED QUANTITIES OF CLASS 2

**PRIMARY HAZARD CLASS/DIVISION:** 2.2

**UN/NA NUMBER:** UN1950

**PACKING GROUP:** NA

**IMDG NOTE:** Page 2102

---

## 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)**



4801 North Ravenswood Avenue  
Chicago, IL 60640-4496

Phone: (773) 907-5181

Fax: (773) 907-5180

E-mail (techsupport@spctechnology.com)

Doc. No.: MSDS-015  
DCP No.: 1653  
Effective Date: 11/17/03  
New MSDS

# Material Safety Data Sheet

Emergency/Information: (800) 420-8021

---

**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

**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 CLASSIFICATION

EEC Irritant - "Xi"

**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.

---





4801 North Ravenswood Avenue  
Chicago, IL 60640-4496  
Phone: (773) 907-5181  
Fax: (773) 907-5180  
E-mail (techsupport@spctechnology.com)

Doc. No.: MSDS-015  
DCP No.: 1653  
Effective Date: 11/17/03  
New MSDS

# Material Safety Data Sheet

Emergency/Information: (800) 420-8021

---

## 16. OTHER INFORMATION

### HMIS RATING

HEALTH: **1**

FLAMABILITY: **1**

PHYSICAL HAZARD: **0**

PERSONAL PROTECTION:

### NFPA CODES

Health: **1**

Fire: **2**

Reactivity: **0**

Special: **0**

**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, SPC Technology does not assume 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.

March 7, 2011



U.S. Department  
of Transportation

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

**Pipeline and Hazardous  
Materials Safety Administration**

DOT-SP 10232  
(FIFTEENTH REVISION)

EXPIRATION DATE: March 31, 2014

(FOR RENEWAL, SEE 49 CFR § 107.109)

1. GRANTEE: ITW Sexton  
Cambridge, MA
2. PURPOSE AND LIMITATIONS:
  - a. This special permit authorizes the manufacture, marking, sale, and use of a non-DOT specification packaging conforming in part with the DOT Specification 2Q, except as specified herein, for the transportation in commerce of the material authorized in this special permit. 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 development of this special permit only considered the hazards and risks associated with transportation in commerce.
3. REGULATORY SYSTEM AFFECTED: 49 CFR Parts 106, 107 and 171-180.
4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR §§ 173.304(d) and 173.306(a)(3) in that non-DOT specification cylinders are not authorized, except as specified herein.
5. BASIS: This special permit is based on the application of ITW Sexton dated April 1, 2010, submitted in accordance with § 107.109.

6. HAZARDOUS MATERIALS (49 CFR § 172.101):

<b>Hazardous Materials Description</b>			
<b>Proper Shipping Name</b>	<b>Hazard Class/ Division</b>	<b>Identification Number</b>	<b>Packing Group</b>
Refrigerant gases, n.o.s.	2.2	UN1078	N/A
1,1,1,2-Tetrafluoroethane	2.2	UN3159	N/A

7. SAFETY CONTROL MEASURES:

a. PACKAGING - Prescribed packaging is a non-refillable non-DOT specification inside metal container conforming with Sexton Can Company drawing No. 995D0017, Revision G, dated November 26, 2007, on file with the Office of Hazardous Materials Special Permits and Approvals (OHMSPA). The cylinder must be in conformance with DOT Specification 2Q (§ 178.33a), except as follows:

§ 178.33a-6 Manufacture.

(a) \* \* \*

(b) \* \* \*

(1) \* \* \*

(2) Side seams. Not permitted.

(c) Ends: The ends shall be designed to withstand pressure and bottom end is fitted with a pressure relief device (PRD).

§ 178.33a-8 Tests.

**Burst Test** - For qualification burst tests, each 5000 containers or less, successively produced as a batch or part thereof shall constitute a lot. Two containers, one with a PRD and one without a PRD, taken randomly from each lot and complete with the ends assembled must be pressure tested to destruction. The burst pressure of containers fitted with a bottom PRD may not be below 250 psig. The burst pressure of containers without a bottom PRD may not be less than 370 psig. If either of the test container fails to meet the

**March 7, 2011**

above requirements, the lot shall be rejected. However, an additional 5 randomly selected pairs of containers from that lot may be burst tested to qualify that lot. If any of the additional test containers fail the burst test, that lot must be rejected.

§ 178.33a-9 Marking.

Applies except that the container must be marked with "DOT-SP 10232" in lieu of "DOT 2Q".

b. OPERATIONAL CONTROLS - Each packaging must be prepared and shipped in accordance with the following:

- (1) The filling density may not exceed 87 percent.
- (2) Prior to initial shipment of the filled containers, each completed container must be heated until the pressure in the container is equivalent to the equilibrium pressure of the lading at 130°F. Lading equilibrium pressure may not exceed 200 psig at 130°F. Liquid content of lading may not completely fill the container at 130°F. Acceptable containers must show no evidence of leakage, distortion or other defect.
- (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 10232".
- (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 10232" as specified above in paragraph 7(c)(4).

8. SPECIAL PROVISIONS:

a. In accordance with the provisions of Paragraph (b) of § 173.22a, persons may use the packaging authorized by this special permit for the transportation of the hazardous materials specified in paragraph 6, only in conformance with the terms of this special permit.

**March 7, 2011**

- b. A person who is not a holder of this special permit, but receives a packaging covered by this special permit, may reoffer it for transportation provided no modification or change is made to the packaging and it is offered for transportation in conformance with this special permit and the HMR.
- c. A current copy of this special permit must be maintained at each facility where the package is offered or reoffered for transportation.
- d. Each packaging manufactured under the authority of this special permit must be marked with a registration symbol designated by the Office of Hazardous Materials Special Permits and Approvals for a specific manufacturing facility.
- e. A current copy of this special permit must be maintained at each facility where the package is manufactured under this special permit. It must be made available to a DOT representative upon request.
- f. Test data obtained under the qualification burst test (§ 178.33a-8) of this special permit, must be kept on file and be made available upon request by OHMSPA.
9. MODES OF TRANSPORTATION AUTHORIZED: Motor vehicle, rail freight, cargo vessel, cargo aircraft only, and passenger-carrying aircraft.
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 shall furnish a current 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, 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 the 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 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](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: BMOORE/sln