

# MATERIAL SAFETY DATA SHEET

Trade Name: Johnsens 134a Refrigerant  
MSDS NO. 6330  
Revision Date: NOT AUTHORIZED  
Date Printed 10/14/2009

## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Trade Name: Johnsens 134a Refrigerant  
Chemical Family: Refrigerant Gas  
Synonyms: None  
Emergency Telephone (24 hr.): CHEMTREC 1-800-424-9300  
Supplier: Technical Chemical Company, P.O. Box 139, Cleburne, Texas 76033

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

Component	Weight %	OSHA TWA	OSHA STEL	OSHA SKIN
1,1,1,2-Tetrafluoroethane 811-97-2	98-100	Not Listed	Not Listed	Not Listed

Component	Weight %	OSHA Z PEL	OSHA Z TWA	OSHA Z Ceiling
1,1,1,2-Tetrafluoroethane 811-97-2	98-100	Not Listed	Not Listed	Not Listed

Component	ACGIH TLV TWA	ACGIH TLV STEL	ACGIH TLV Ceiling
1,1,1,2-Tetrafluoroethane 811-97-2	Not Listed	Not Listed	Not Listed

Other: Contains no other ingredients in concentrations >.1% that are now known to be hazardous as defined by OSHA.

## 3. HAZARDS IDENTIFICATION

**Emergency Overview:** Content under pressure. "Frostbite-like" effects may occur if the liquid or escaping vapors contact the eyes or skin. May decompose on contact with flames or extremely hot metal surfaces to produce toxic and corrosive products. Gross inhalation overexposure may cause heart irregularities, unconsciousness or death. Vapor reduces oxygen available for breathing and is heavier than air. Workers with heart disease or compromised heart function should limit exposure to this material. Keep away from heat, sparks and flame.

**HMIS Classification:** Health: 1 Flammability: 1 Reactivity: 0  
**NFPA Rating:** Health: 2 Flammability: 1 Reactivity: 0

## 4. FIRST AID MEASURES

**Eye Contact:** In case of contact, or suspected contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention immediately after flushing. In case of frostbite, water should be lukewarm, lifting eyelids occasionally to facilitate irrigation

**Ingestion:** Not applicable - product is a gas at ambient temperatures.

**Inhalation:** If inhaled, remove to fresh air. If not breathing give artificial respiration, preferably mouth-to-mouth. If breathing is difficult give oxygen. Get medical attention. Do not give adrenaline, epinephrin or similar drugs following exposure to this product.

**Skin Contact:** For exposure to liquid, immediately warm frostbite area with warm water (not to exceed 105°F). In case of massive exposure, remove clothing while showering with warm water. Get medical attention. Irritation may result from a defatting action on tissue

## 5. FIRE FIGHTING MEASURES

### Flammable Properties

Flash Point °F(°C): NA - Gas  
Flash Point Method: Not Applicable  
Flammable Limits in Air - Lower (%): Not Applicable  
Flammable Limits in Air - Upper (%): Not Applicable

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### 5. FIRE FIGHTING MEASURES

**Autoignition Temperature °F(°C):** 1369 F (743 C)  
**Extinguishing Media:** Use water spray to keep containers cool that are exposed to heat or flames. Use extinguishing media appropriate for surrounding fire.

**Protection Of Fire-Fighters:**

**Special Fire-Fighting Procedures:** Warning!! Contents under pressure. Container may rupture under fire conditions. Decomposition may occur. Wear approved positive-pressure self-contained breathing apparatus and protective clothing.

**Hazardous Combustion Products:** May decompose on contact with flames or extremely hot metal surfaces to produce toxic and corrosive products. Liquid and gas under pressure, overheating or overpressurizing may cause gas release and/or violent cylinder bursting. Container may explode if heated due to resulting pressure rise. Some mixtures of HFCs and/or HFCs, and air or oxygen may be combustible if pressurized and exposed to extreme heat or flame.

**Aerosol Comments:** NFPA Level 1 Aerosol

### 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautions:** Wear appropriate protective clothing and equipment to prevent skin and eye contact. Avoid breathing vapor. When airborne exposure limits are exceeded use NIOSH approved respiratory protection equipment appropriate to the material and/or its components.

**Spill Procedures:** Wear protective equipment specified. Avoid all sources of ignition; heat, sparks and open flames. Use Halogen leak detector or other suitable means to locate leaks or check atmosphere. Keep upwind. Evacuate enclosed spaces and disperse gas with floor-level forced-air ventilation. Exhaust vapors outdoors. Do not smoke or operate internal combustion engines. Evacuate unprotected personnel

**Action to be taken if material is released or spilled:** Increase area ventilation. Do not puncture or incinerate container. Contents under pressure.

**Environmental Precautions:** Do not allow entry to the atmosphere. Recover, reclaim or recycle when practical.

### 7. HANDLING AND STORAGE

**Handling and Storage:** CAUTION: COMPRESSED GAS. Do not puncture, incinerate or store above 120 F. Do not store in passenger compartment of automobile. Avoid breathing vapors, if exposed to high vapor concentration, leave area at once. Avoid contact with skin and eyes. Should not be mixed with air for leak testing or used for any other purpose above atmospheric pressure. Use only in a well ventilated area. Do not reuse this container. Keep away from heat and open flame. Protect from light and heat

### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Engineering Controls:** Local exhaust ventilation as necessary to maintain exposures to within applicable limits. Showers. Eyewash stations.

**Eyes:** Chemical goggles; also wear a face shield if splashing hazard exists.

**Skin Protection:** Avoid skin contact. Wear protective clothing and gloves.

**Respiratory Protection:** An approved respirator (i.e. NIOSH, etc.) should be worn when exposures are expected to exceed the applicable limits. Use in a well ventilated area.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance:** Clear, colorless liquid and vapor  
**Odor:** MILD ETHER LIKE  
**pH Value:** Not Determined  
**Vapor Pressure:** .665 MPa (6.66 bar) (25C)  
**Vapor Density (Air=1):** 3.25  
**Boiling Point (°F):** -15.5 F (-26.4 C)  
**Melting/Freezing Point:** -160 C (Freezing Point)  
**Solubility in Water:** .9 g/l @ 25 C.  
**Bulk Density at 20°C:** 1.21 @ 25 C (g/cm3)  
**Molecular Weight:** 102.03  
**Specific Gravity (H2O=1):** 1.21 @ 4 C.  
**Viscosity:** Not determined.  
**Evaporation Rate:** Not Determined  
**VOC Content(%):** Not determined.  
**Decomposition Temperature:** >698 F (>370 C)

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### 10. STABILITY AND REACTIVITY

**Chemical Stability:** Stable under normal temperatures and pressures.  
**Conditions to Avoid:** Do not expose to heat or store at temperatures above 120 F. Keep away from heat, sparks and flame.  
**Materials to Avoid:** Avoid contact with alkali or alkaline earth metals. Avoid finely powdered metals such as aluminum, magnesium or zinc. Strong oxidizers.  
**Hazardous Decomposition Products:** Thermal decomposition products include hydrogen fluoride, hydrogen chloride, carbon monoxide, carbon dioxide and chlorine.  
**Hazardous Polymerization:** WILL NOT OCCUR

### 11. TOXICOLOGICAL INFORMATION

Toxicological Data:

Component	Route	Species	Dose
1,1,1,2-Tetrafluoroethane 811-97-2	Inhalation	Rats	LC50 1500 gm/m <sup>3</sup> /4H

Carcinogenicity:

Component	IARC	NTP	OSHA
1,1,1,2-Tetrafluoroethane 811-97-2	Not Listed	Not Listed	Not Listed

### 12. ECOLOGICAL INFORMATION

**Remarks:** Aquatic Toxicity: 48 hour EC50 - Daphnia magna: 980 mg/L, 96 hour LC50 - Rainbow trout: 450 mg/L

### 13. DISPOSAL CONSIDERATION

**Waste Classification:** Not determined.  
**Waste Management:** Not determined.  
**Disposal Method:** Disposal should be made in accordance with federal, state and local regulations. Recover, reclaim or recycle when practical.

### 14. TRANSPORTATION INFORMATION

U.S. DOT:

Proper Shipping Name: 1,1,1,2-Tetrafluoroethane  
Hazard Class: 2.2  
UN/NA Number: UN 3159  
DOT Packing Group: Not Applicable

IMDG:

Proper Shipping Name: 1,1,1,2-Tetrafluoroethane  
Hazard Class: 2.2  
Hazard Subclass: Not Applicable  
UN No.: UN 3159  
Packing Group: Not Applicable  
Marine Pollutant: No

### 15. REGULATORY INFORMATION

US Federal Regulations:

Component	SARA 313	SARA 302	TPQ	RQ
1,1,1,2-Tetrafluoroethane 811-97-2	Not Listed	Not Listed	Not Listed	Not Listed

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SARA 311/312 Hazard Categories: Acute, Chronic, Pressure

### State Regulations:

Component	California Prop. 65 Cancer list	California - Prop 65 Developmental Toxicity	California Prop. 65 Reproductive Female	California Prop. 65 Reproductive Male
1,1,1,2-Tetrafluoroethane 811-97-2	Not Listed	Not Listed	Not Listed	Not Listed

U.S. TSCA: The components of this product are listed on the TSCA Inventory.  
Canadian Inventory: The components of this product are listed on the Canadian DSL or NDSL Inventory.

### Consumer Product Safety Improvement Act of 2008 General Conformity Certification

The Supplier identified in Section 1 of this MSDS has evaluated this product and certifies it to be labeled and packaged in compliance with the applicable provisions of the Federal Hazardous Substance Act as stated in 16 CFR 1500 and enforced by the Consumer Product Safety Commission, and where applicable the products that require Child Resistant Closures are packaged in accordance with the Poison Prevention Packaging Act as stated in 16 CFR 1700 and enforced by the Consumer Product Safety Commission. All closures have been tested in accordance with the latest protocols. No other testing is required to certify compliance with the above. The date of manufacture is stamped on the product container.

## 16. OTHER INFORMATION

### General Notes: Disclaimer:

Do not allow undiluted material or large quantities to reach groundwater, bodies of water or sewer system. The information and recommendations contained herein are based upon tests believed to be reliable. However, the manufacturer/distributor of this product does not guarantee their accuracy or completeness NOR SHALL ANY OF THIS INFORMATION CONSTITUTE A WARRANTY, WHETHER EXPRESSED OR IMPLIED, AS TO THE SAFETY OF THE GOODS, THE MERCHANTABILITY OF THE GOODS, OR THE FITNESS OF THE GOODS FOR A PARTICULAR PURPOSE. Adjustment to conform to actual conditions of usage may be required. The manufacturer/distributor assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied.