

# REFRIGERANT R-507



## Du Pont Material Safety Data Sheet

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CEFOR507 SUVA\* 507 Revised 7-Jan-08 Printed 01/08/2008

Substance ID :130000000772

### CHEMICAL PRODUCT/COMPANY IDENTIFICATION

#### Product Use

Refrigerant

#### Tradenames and Synonyms

R-507

Refrigerant

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#### Company Identification

##### MANUFACTURER/DISTRIBUTOR

E.I. du Pont Canada Company  
P.O. Box 2200  
Streetsville  
Mississauga, Ontario L5M 2H3

##### PHONE NUMBERS

Product Information : 1-800-387-2122

Medical Emergency : 1-800-441-3637 (24 hours)

### COMPOSITION/INFORMATION ON INGREDIENTS

#### Components

Material	CAS Number	%
PENTAFLUOROETHANE (HFC 125)	354-33-6	50 %
1,1,1-TRIFLUOROETHANE (HFC 143a)	420-46-2	50 %

### HAZARDS IDENTIFICATION

#### Potential Health Effects

##### Potential Health Effects

##### SKIN CONTACT

Immediate effects of overexposure may include: Frostbite, if liquid or escaping vapor contacts the skin. Significant skin permeation, and systemic toxicity, after contact appears unlikely.

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**INHALATION**

Gross overexposure may cause: Central nervous system depression with dizziness, headache, confusion, incoordination, drowsiness or unconsciousness. Suffocation, if air is displaced by vapors. Based on animal data, this material may cause: Irregular heart beat with a strange sensation in the chest, "heart thumping", cardiac arrhythmias, apprehension, lightheadedness, feeling of fainting, dizziness, inadequate circulation, weakness, sometimes progressing to loss of consciousness and death.

At flame temperatures, this material can decompose to hydrogen fluoride which can be lethal at much lower concentrations.

**ADDITIONAL HEALTH EFFECTS**

Increased susceptibility to the effects of this material may be observed in persons with pre-existing disease of the: cardiovascular system.

**Carcinogenicity Information**

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.

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**FIRST AID MEASURES**  
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**First Aid****INHALATION**

If inhaled, immediately remove to fresh air. Keep person calm. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

**SKIN CONTACT**

In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician. Wash contaminated clothing before reuse. Treat for frostbite if necessary by gently warming affected area.

**EYE CONTACT**

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.



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**INGESTION**

Ingestion is not considered a potential route of exposure.

**Notes to Physicians**

Because of possible disturbances of cardiac rhythm, catecholamine drugs, such as epinephrine, should only be used with special caution in situations of emergency life support.

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**FIRE FIGHTING MEASURES**  
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**Flammable Properties**

Flash Point	: Will not burn
Method	: Tag Open Cup - TOC.
Flammable limits in Air, % by Volume	
LEL	: Not applicable
UEL	: Not applicable
Autoignition	: Not determined

Containers may rupture under fire conditions. Decomposition may occur.

R-507 is not flammable at temperatures up to 80 deg C (176 deg F) and at atmospheric pressure. Data are not available at higher temperatures and pressures. However, one of the components, HFC 143a is flammable.

Contact of welding or soldering torch flame with high concentrations of refrigerant can result in visible changes in the size and color of the torch flame. This flame effect will occur in concentrations of product well above the recommended exposure limit, therefore stop all work and ventilate the area before proceeding. Use forced ventilation to disperse refrigerant vapors from the work area before using any open flames.

**Extinguishing Media**

As appropriate for combustibles in area.

**Fire Fighting Instructions**

Cool cylinder with water spray or fog. Self-contained breathing apparatus (SCBA) is required if cylinders rupture and contents are released under fire conditions.

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**ACCIDENTAL RELEASE MEASURES**  
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**Safeguards (Personnel)**

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

**Accidental Release Measures**

Ventilate area (using forced ventilation), especially low or enclosed places where heavy vapors might collect. Remove open flames. Use self-contained breathing apparatus (SCBA) for large spills or releases.

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**HANDLING AND STORAGE**  
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**Handling (Personnel)**

Avoid breathing high concentrations of vapor. Avoid contact of liquid with eyes and prolonged skin exposure. Use with sufficient ventilation to keep employee exposure below recommended limits.

Contact with chlorine or other strong oxidizing agents should also be avoided. See Fire and Explosion Data section.

**Storage**

Do not heat above 52 C (126 F). Store in a clean, dry place.

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**EXPOSURE CONTROLS/PERSONAL PROTECTION**  
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**Engineering Controls**

Refrigerant concentration monitors may be necessary to determine vapor concentrations in work areas prior to use of torches or other open flames, or if employees are entering enclosed areas.

**Personal Protective Equipment**

For large spills or releases, use self-contained breathing apparatus (SCBA).

**Exposure Guidelines****Applicable Exposure Limits****PENTAFLUOROETHANE (HFC 125)**

PEL (OSHA)	: None Established
TLV (ACGIH)	: None Established
AEL * (DuPont)	: 1000 ppm, 8 & 12 Hr. TWA
WEEL (AIHA)	: 1000 ppm, 4900 mg/m3, 8 Hr. TWA



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1,1,1-TRIFLUOROETHANE (HFC 143a)  
PEL (OSHA) : None Established  
TLV (ACGIH) : None Established  
AEL \* (DuPont) : 1000 ppm, 8 & 12 Hr. TWA  
WEEL (AIHA) : 1000 ppm, 8 Hr. TWA

\* AEL is DuPont's Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.

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PHYSICAL AND CHEMICAL PROPERTIES  
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Physical Data

% Volatiles : 100 %  
Evaporation Rate : >1  
Solubility in Water : Not Determined  
Odor : Ethereal (slight).  
Form : Liquified Gas.  
Color : Clear, Colorless.  
Boiling Point : -46.9 C (-52.4 F) @ 1 atm  
Vapor Pressure : 184.9 psia @ 25 C (77 F)  
Specific Gravity : 1.079 @ 25 C (77 F)

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STABILITY AND REACTIVITY  
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Chemical Stability

Stable at normal temperatures and storage conditions.

However, avoid open flames and high temperatures.

Incompatibility with Other Materials

Incompatible with active metals, alkali or alkaline earth metals--powdered Al, Zn, Be, etc.

Decomposition

Decomposition products are hazardous. This material can be decomposed by high temperatures (open flames, glowing metal surfaces, etc.) forming hydrofluoric acid and possibly carbonyl fluoride.

Polymerization

Polymerization will not occur.

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TOXICOLOGICAL INFORMATION  
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**Animal Data**

HFC-125

**INHALATION:**

4 hour, ALC, rat: > 709,000 ppm (Very low toxicity).

Single exposure to high doses caused: Lethargy. Labored breathing. Weak cardiac sensitization, a potentially fatal disturbance of heart rhythm caused by a heightened sensitivity to the action of epinephrine. Repeated exposure caused: No significant toxicological effects.

No-Observed-Adverse-Effect-Level (NOAEL): 50,000 ppm

**ADDITIONAL TOXICOLOGICAL EFFECTS:**

No animal data are available to define the following effects of this material: carcinogenicity, reproductive toxicity. In animal testing this material has not caused developmental toxicity. Tests have shown that this material does not cause genetic damage in bacterial or mammalian cell cultures, or in animals. This material has not been tested for its ability to cause permanent genetic damage in reproductive cells of mammals (not tested for heritable genetic damage).

HFC-143a

Inhalation 4 hour LC50: > 540,000 ppm in rats (Very low toxicity by inhalation)

**INHALATION:** Single exposure to 500,000 ppm caused anaesthesia, but no mortality at 540,000 ppm. Cardiac sensitization occurred in dogs at 300,000 ppm from the action of exogenous epinephrine. Two, 4-week inhalation studies have been conducted. In the first study, pathological changes in the testes were observed at all exposures concentrations; no effects were observed in females. The testicular effect was considered related to the method used to expose the rats to HFC-143a. In the second study using the same exposure concentrations, no effects were noted in males at any concentration. Data from a 90-day study revealed no effects in male or female rats at exposures up to 40,000 ppm.

**INGESTION:** Long-term exposure caused significantly decreased body weights in male rats fed 300 mg/kg for 52 weeks, but there was no effect on mortality. During this long-term exposure study, tests in rats demonstrated no carcinogenic activity when HFC-143a was administered orally in corn oil at 300 mg/kg/day, five days a week, for 52 weeks and observed for an additional 73 weeks. Tests in animals demonstrate no developmental toxicity. No animal test

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Reactivity : No

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Pressure : Yes

HAZARDOUS CHEMICAL LISTS

SARA Extremely  
Hazardous Substance - No  
CERCLA Hazardous Substance - No  
SARA Toxic Chemical - No

Canadian Regulations

WHMIS Classification:

CLASS A Compressed Gas

This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

CEPA Status : All components either on DSL, or notified.

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OTHER INFORMATION  
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NFPA, NPCA-HMIS

NPCA-HMIS Rating  
Health : 1  
Flammability : 0  
Reactivity : 1

Personal Protection rating to be supplied by user depending on use conditions.

Additional Information

HFC-143a is TSCA listed, and is controlled by a TSCA Section 5 Consent Order.

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The data in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

Responsibility for MSDS  
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FLUOROPRODUCTS E.I. E.I. du Pont Canada Company Company  
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End of MSDS

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