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This information is based upon technical information DuPont believes to be reliable. It is subject to revision as additional knowledge and experience are gained. Please return to this website for the most current version.

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## "SUVA" 134a (AUTO)

2188FR

Revised 23-MAR-1999

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### CHEMICAL PRODUCT/COMPANY IDENTIFICATION

#### Material Identification

"SUVA" is a trademark of DuPont.

Corporate MSDS Number : DU000693  
CAS Number : 811-97-2  
Formula : CH<sub>2</sub>FCF<sub>3</sub>  
CAS Name : 1,1,1,2-TETRAFLUOROETHANE

#### Tradenames and Synonyms

"SUVA" 134a  
HFC 134a

#### Company Identification

MANUFACTURER/DISTRIBUTOR  
DuPont  
Fluoroproducts  
1007 Market Street  
Wilmington, DE 19898

#### PHONE NUMBERS

Product Information : 1-800-441-7515  
Transport Emergency : CHEMTREC 1-800-424-9300  
Medical Emergency : 1-800-441-3637

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### COMPOSITION/INFORMATION ON INGREDIENTS

#### Components

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 only 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

Use media appropriate for surrounding material.

#### Fire Fighting Instructions

Cool tank/container with water spray. Self-contained breathing apparatus (SCBA) may be required if cylinders rupture or release under fire conditions.

Water runoff should be contained and neutralized prior to release.

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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.

Ventilate area, especially low or enclosed places where heavy vapors might collect. Remove open flames. Use self-contained breathing apparatus (SCBA) if large spill or leak occurs.

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### HANDLING AND STORAGE

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#### Handling (Personnel)

Use with sufficient ventilation to keep employee exposure below recommended limits.

#### Handling (Physical Aspects)

HFC-134a should not be mixed with air for leak testing or used for any other purpose above atmospheric pressure. See Flammable Properties section. Contact with chlorine or other strong oxidizing agents should also be avoided.

#### Storage

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

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### EXPOSURE CONTROLS/PERSONAL PROTECTION

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#### Engineering Controls

Normal ventilation for standard manufacturing procedures is generally adequate. Local exhaust should be used when large amounts are released. Mechanical ventilation should be used in low or enclosed places. 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

Impervious gloves and chemical splash goggles should be used when handling liquid.

Under normal manufacturing conditions, no respiratory protection is required when using this product.

Self-contained breathing apparatus (SCBA) is required if a large release occurs.

#### Exposure Guidelines

##### Exposure Limits

"SUVA" 134a (AUTO)

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.

## PHYSICAL AND CHEMICAL PROPERTIES

### # Physical Data

Boiling Point	: -26.5 C (-15.7 F) @ 736 mm Hg
Vapor Pressure	: 96 psia @ 25 C (77 F)
Vapor Density	: 3.6 (Air=1.0) @ 25 C (77 F)
% Volatiles	: 100 WT%
Solubility in Water	: 0.15 WT% @ 25 C (77 F) @ 14.7 psia
Odor	: Ether (slight).
Form	: Liquified Gas.
Color	: Colorless.
Liquid Density	: 1.21 g/cm <sup>3</sup> @ 25 C (77 F)
Specific Gravity	: 1.208 @ 77 F (25 C)

Evaporation Rate : (CCL4 = 1); greater than 1

## STABILITY AND REACTIVITY

### Chemical Stability

Stable.

### Conditions to Avoid

Avoid open flames and high temperatures.

### Incompatibility with Other Materials

Incompatible with 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.

These materials are toxic and irritating. Contact should be avoided.

#### Polymerization

Polymerization will not occur.

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## TOXICOLOGICAL INFORMATION

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### Animal Data

ETHANE, 1,1,1,2-TETRAFLUORO-

#### EYE:

A short duration spray of vapor produced very slight eye irritation.

#### SKIN:

Animal testing indicates this material is a slight skin irritant, but not a skin sensitizer.

#### INHALATION:

4 hour, ALC, rat: 567,000 ppm.

Single exposure caused: Cardiac sensitization, a potentially fatal disturbance of heart rhythm associated with a heightened sensitivity to the action of epinephrine.

Lowest-Observed-Adverse-Effect-Level for cardiac sensitization: 75,000 ppm. Single exposure caused: Lethargy. Narcosis.

Increased respiratory rates. These effects were temporary.

Single exposure to near lethal doses caused: Pulmonary edema.

Repeated exposure caused: Increased adrenals, liver, spleen weight. Decreased uterine, prostate weight. Repeated dosing of higher concentrations caused: the following temporary effects - Tremors. Incoordination.

#### CARCINOGENIC, DEVELOPMENTAL, REPRODUCTIVE, MUTAGENIC EFFECTS:

In a two-year inhalation study, HFC-134a, at a concentration of 50,000 ppm, produced an increase in late-occurring benign testicular tumors, testicular hyperplasia and testicular weight. The no-effect-level for this study was 10,000 ppm. Animal data show slight fetotoxicity but only at exposure levels producing other toxic effects in the adult animal. Reproductive data on male mice show: No change in reproductive performance. Tests have shown that this material does not cause genetic damage in bacterial or mammalian cell cultures, or in animals. In animal testing, this material has not caused permanent genetic damage in reproductive cells of mammals (has not produced heritable genetic damage).

**ECOLOGICAL INFORMATION**

## Ecotoxicological Information

AQUATIC TOXICITY:  
48 hour EC50 - Daphnia magna: 980 mg/L.  
96 hour LC50 - Rainbow trout: 450 mg/L

**DISPOSAL CONSIDERATIONS**

## Waste Disposal

Contaminated HFC-134a can be recovered by distillation or removed to a permitted waste disposal facility. Comply with Federal, State, and local regulations.

**TRANSPORTATION INFORMATION**

## Shipping Information

DOT/IMO  
Proper Shipping Name : 1,1,1,2-TETRAFLUOROETHANE  
Hazard Class : 2.2  
UN No. : 3159  
DOT/IMO Label : NONFLAMMABLE GAS

## Shipping Containers

Tank Cars.  
Tank Trucks.  
Ton Tanks.  
Cylinders.

**REGULATORY INFORMATION**

## U.S. Federal Regulations

TSCA Inventory Status : Reported/Included.

TITLE III HAZARD CLASSIFICATIONS SECTIONS 311, 312

Acute : Yes  
Chronic : Yes  
Fire : No  
Reactivity : No  
Pressure : Yes

## HAZARDOUS CHEMICAL LISTS

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

**OTHER INFORMATION**

## 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

MEDICAL USE: CAUTION: Do not use in medical applications involving permanent implantation in the human body. For other medical applications see DuPont CAUTION Bulletin No. H-50102.

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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 : MSDS Coordinator  
> : DuPont Fluoroproducts  
Address : Wilmington, DE 19898  
Telephone : (800) 441-7515

# Indicates updated section.

End of MSDS