



## DuPont™ SUVA® 134a Refrigerant

Version 2.2

Revision Date 12.04.2006

Ref. 13000000349

This SDS adheres to the standards and regulatory requirements of Great Britain and may not meet the regulatory requirements in other countries.

### 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

#### Product information

Product name : DuPont™ SUVA® 134a Refrigerant

Types : ASHRAE Refrigerant number designation: R-134a

Use of the Substance/Preparation : refrigerant

Company : Du Pont de Nemours (Nederland) B.V.  
Baanhoekweg 22  
NL-3313 LA Dordrecht  
The Netherlands

Telephone : +31-78-630.1011

Telefax : +31-78-630.1181

Emergency telephone number : +44-(0)8456-006.640

### 2. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name of the substance : 1,1,1,2-Tetrafluoroethane(R134a)

Chemical Name	CAS-No.	EC-No.	Classification	Concentration [%]
1,1,1,2-Tetrafluoroethane (R134a)	811-97-2	212-377-0		100

### 3. HAZARDS IDENTIFICATION

Rapid evaporation of the liquid may cause frostbite.  
Vapours are heavier than air and can cause suffocation by reducing oxygen available for breathing.

### 4. FIRST AID MEASURES

General advice : If unconscious place in recovery position and seek medical advice. Never give anything by mouth to an unconscious person. If breathing is irregular or stopped, administer artificial respiration. If symptoms persist, call a physician.

Inhalation : Move to fresh air. Keep patient warm and at rest. Artificial respiration and/or oxygen may be necessary.

Skin contact : Wash off with warm water. Take off all contaminated clothing immediately.

Eye contact : Rinse thoroughly with plenty of water, also under the eyelids. Consult a physician.

#### Notes to physician


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Treatment : Do not give adrenaline or similar drugs.

**5. FIRE-FIGHTING MEASURES**

Specific hazards during fire fighting : pressure build-up

Special protective equipment for fire-fighters : In the event of fire, wear self-contained breathing apparatus.

Further information : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Cool containers / tanks with water spray.

**6. ACCIDENTAL RELEASE MEASURES**

Personal precautions : Evacuate personnel to safe areas. Ventilate the area. Refer to protective measures listed in sections 7 and 8.

Environmental precautions : Should not be released into the environment.

Methods for cleaning up : Evaporates.

**7. HANDLING AND STORAGE**
**Handling**

Advice on safe handling : Provide sufficient air exchange and/or exhaust in work rooms. For personal protection see section 8.

Advice on protection against fire and explosion : No special protective measures against fire required.

**Storage**

Requirements for storage areas and containers : Keep container tightly closed in a dry and well-ventilated place. Store in original container.

Advice on common storage : No materials to be especially mentioned.

German storage class : 2A : Compressed, liquefied or pressurised gas

**8. EXPOSURE CONTROLS / PERSONAL PROTECTION**
**Components with workplace control parameters**

Components	CAS-No.	Type Form of exposure	Control parameters	Update	Basis
1,1,1,2-Tetrafluoroethane (R134a)	811-97-2	TWA	4 240 mg/m <sup>3</sup> 1 000 ppm	2001	EH40 OES

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**Engineering measures**

Ensure adequate ventilation, especially in confined areas.

**Personal protective equipment**

Respiratory protection : For rescue and maintenance work in storage tanks use self-contained breathing apparatus. Vapours are heavier than air and can cause suffocation by reducing oxygen available for breathing.

Hand protection : heat insulating gloves

Eye protection : safety glasses

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

Form	: Liquefied gas,
Colour	: none,
Odour	: ether-like,
pH	: neutral
Melting point/range	: -101 - 103 °C at 1 013 hPa
Boiling point/range	: -26,5 °C at 1 013 hPa
Flash point	: does not flash
Ignition temperature	: > 750 °C
Upper explosion limit	: , not applicable
Vapour pressure	: 6 661 hPa at 25 °C
Vapour pressure	: 13 190 hPa at 50 °C
Density	: 1,21 g/cm <sup>3</sup> at 25 °C, (as liquid)
Density	: 0,0042 g/cm <sup>3</sup> at 25 °C (1 013 hPa)
Density	: 0,0053 g/cm <sup>3</sup> at -26,1 °C (1 013 hPa)
Water solubility	: 1,5 g/l at 25 °C at 1 013 hPa

**10. STABILITY AND REACTIVITY**

Conditions to avoid : The product is not flammable in air under ambient conditions of temperature and pressure. When pressurised with air or oxygen the mixture may become flammable. Certain mixtures of HCFCs or HFCs with chlorine may become flammable or reactive under certain conditions.

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Hazardous decomposition products : hydrogen halides, carbon dioxide (CO<sub>2</sub>), Carbon monoxide, fluorocarbons, carbonyl halides

**11. TOXICOLOGICAL INFORMATION**

Acute inhalation toxicity

• 1,1,1,2-Tetrafluoroethane (R134a) : LC50/ 4 h/ rat : > 2 085 mg/l

Human experience : Excessive exposures may affect human health, as follows:

Inhalation

severe shortness of breath, narcosis, Irregular cardiac activity

Further information

: Cardiac sensitisation threshold limit : 312 975 mg/m<sup>3</sup>Anaesthetic effects threshold limit : 834 600 mg/m<sup>3</sup>

Did not show carcinogenic or teratogenic effects in animal experiments. Concentrations substantially above the TLV value may cause narcotic effects. Inhalation of decomposition products in high concentration may cause shortness of breath (lung oedema). Rapid evaporation of the liquid may cause frostbite.

**12. ECOLOGICAL INFORMATION**

Toxicity to fish

• 1,1,1,2-Tetrafluoroethane (R134a) : LC50 / 96 h/ Oncorhynchus mykiss (rainbow trout) : 450 mg/l

Aquatic toxicity

• 1,1,1,2-Tetrafluoroethane (R134a) : / EC50/ 48 h/ Daphnia: 980 mg/l

Ozone depletion potential : 0

Global warming potential (GWP) : 1 300

**13. DISPOSAL CONSIDERATIONS**

Product : Can be used after re-conditioning.

Contaminated packaging : Empty pressure vessels should be returned to the supplier.

**14. TRANSPORT INFORMATION****ADR**

Class: 2  
Classification Code: 2A  
HI No.: 20

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UN-No: 3159  
Labelling No.: 2.2  
Proper shipping name: 1,1,1,2-Tetrafluoroethane

**IATA\_C**

Class: 2.2  
UN-No: 3159  
Labelling No.: 2.2  
Proper shipping name: 1,1,1,2-Tetrafluoroethane

**IMDG**

Class: 2.2  
UN-No: 3159  
Labelling No.: 2.2  
Proper shipping name: 1,1,1,2-Tetrafluoroethane

**15. REGULATORY INFORMATION****Labelling according to EC Directives**

The product does not need to be labelled in accordance with EC directives or respective national laws.

**16. OTHER INFORMATION****Further information**

Before use read DuPont's safety information., For further information contact the local DuPont office or DuPont's nominated distributors., ® DuPont's registered trademark

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