

# Safety Data Sheet

**Product :** 1,1,1,2-Tetrafluoroethane, R134a

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MSDS Nr : 300-00-0045BOC(U)

Version : 1.01

Date : 23/04/2001

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

Product name 1,1,1,2-Tetrafluoroethane, R134a  
Company identification see heading and/or footer  
Emergency phone numbers see heading and/or footer

## 2 COMPOSITION/INFORMATION ON INGREDIENTS

Substance/Preparation Substance.  
Components/Impurities Contains no other components or impurities which will influence the classification of the product.  
CAS Nr 00811-97-2  
EEC Nr (from EINECS) 212-377-0

## 3 HAZARDS IDENTIFICATION

Hazards identification In high concentrations may cause asphyxiation.  
Liquefied gas

## 4 FIRST AID MEASURES

Inhalation In low concentrations may cause narcotic effects. Symptoms may include dizziness, headache, nausea and loss of co-ordination.  
In high concentrations may cause asphyxiation. Symptoms may include loss of mobility/consciousness.  
Victim may not be aware of asphyxiation.  
Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.  
Skin/eye contact In case of frostbite spray with water for at least 15 minutes. Apply a sterile dressing.  
Obtain medical assistance  
Ingestion Immediately flush eyes thoroughly with water for at least 15 minutes.  
Ingestion is not considered a potential route of exposure.

## 5 FIRE FIGHTING MEASURES

Specific hazards Exposure to fire may cause containers to rupture/explode.  
Non flammable  
Hazardous combustion products If involved in a fire the following toxic and/or corrosive fumes may be produced by thermal decomposition:  
Carbonyl fluoride  
Hydrogen fluoride  
Carbon monoxide

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Suitable extinguishing media	All known extinguishants can be used.
Specific methods	If possible, stop flow of product. Move away from the container and cool with water from a protected position.
Special protective equipment for fire fighters	Use self-contained breathing apparatus and chemically protective clothing.

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## 6 ACCIDENTAL RELEASE MEASURES

Personal precautions	Evacuate area. Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe. Ensure adequate air ventilation.
Environmental precautions	Try to stop release. Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous.
Clean up methods	Ventilate area.

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## 7 HANDLING AND STORAGE

Handling and storage	Suck back of water into the container must be prevented. Do not allow backfeed into the container. Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact your gas supplier if in doubt. Refer to supplier's container handling instructions. Keep container below 50°C in a well ventilated place.
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## 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure limit value for country	UK: 1,1,1,2-Tetrafluoroethane - LTEL: 1000ppm (EH40/2000)
Personal protection	Ensure adequate ventilation. Do not smoke while handling product.

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## 9 PHYSICAL AND CHEMICAL PROPERTIES

Molecular weight	102
Melting point	-101 °C
Boiling point	-26.5 °C
Relative density, gas	3.5 (air=1)
Relative density, liquid	1.2 (water=1)
Vapour Pressure 20°C	4.7 bar



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Before transporting product containers ensure that they are firmly secured and:

- cylinder valve is closed and not leaking
- valve outlet cap nut or plug (where provided) is correctly fitted
- valve protection device (where provided) is correctly fitted
- there is adequate ventilation.
- compliance with applicable regulations.

## 15 REGULATORY INFORMATION

Number in Annex I of Dir 67/548

Not applicable for preparations

EC Classification

Not classified as dangerous substance.

Labelling of cylinders

-Symbols

Label 2: non flammable non toxic gas

## 16 OTHER INFORMATION

Ensure all national/local regulations are observed.

Contact with liquid may cause cold burns/frost bite.

Asphyxiant in high concentrations.

Keep container in well ventilated place.

Do not breathe the gas.

The hazard of asphyxiation is often overlooked and must be stressed during operator training.

Users of breathing apparatus must be trained.

Before using this product in any new process or experiment, a thorough material compatibility and safety study should be carried out.

Details given in this document are believed to be correct at the time of going to press. Whilst proper care has been taken in the preparation of this document, no liability for injury or damage resulting from its use can be accepted.

**End of document.**

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