
1. Identification of the substance/mixture and of the company/undertaking

Product identifier

Name of product R-134a (1,1,1,2,-Tetrafluorethan) type test leak (n.r.)
Name of substance 1,1,1,2-Tetrafluoroethane (R-134a); Norflurane
EC No 212-377-0
CAS No 811-97-2

Manufacturer/distributor

INFICON GmbH
Bonner Straße 498, D-50968 Köln
Phone +49(0)221- 56788-0, Fax +49(0)221- 56788-90
E-Mail leakdetection@inficon.com
Internet www.inficon.com

Advice

Entwicklung / Konstruktion (RESEARCH / DESIGN)
Phone +49(0)221- 56788-354

Emergency advice

Giftinformationszentrale Bonn
Phone +49(0)228 - 19 240

Recommended intended purpose(s)
test gas

2. Hazards identification

Classification according to Regulation (EC) No 1272/2008 [CLP/GHS]

Hazard classes and Hazard categories	Hazard Statements	Classification procedure
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Liquef. Gas	H280	
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Hazard Statements

H280 Contains gas under pressure; may explode if heated.

Labelling according to Regulation (EC) No 1272/2008 [CLP/GHS]



GHS04

Signal word

Warning

Hazard Statements

H280 Contains gas under pressure; may explode if heated.

Precautionary Statements

P410 + P403 Protect from sunlight. Store in a well-ventilated place.

Hazardous ingredients for labeling

1,1,1,2-Tetrafluoroethane (R-134a); Norflurane

Information pertaining to special dangers for human and environment

No hazardous product as specified in Directive 67/548/EEC.

Rapid evaporation of the liquid can cause cold burns.

Vapours are heavier than air and may cause asphyxiation due to oxygen displacement from the atmosphere.

Container under pressure. Protect from direct sunlight and temperatures above 50°C. Do not spray into flames or onto glowing objects.

3. Composition/information on ingredients**Description**

pressure-liquefied gas

CAS No 811-97-2**1,1,1,2-Tetrafluoroethane (R-134a); Norflurane**

EC No 212-377-0

4. First aid measures**General information**

Remove contaminated soaked clothing immediately.

In case of inhalation

Remove the casualty into fresh air and keep him immobile.

In high concentrations may cause asphyxiation.

Remove aggrieved persons from danger zone

In the event of symptoms refer for medical treatment.

In case of respiratory standstill give artificial respiration by respirator and send for a doctor.

In case of skin contact

In case of contact with skin wash off with water.

In case of frostbite rinse with plenty of water. Don't remove clothing.

In case of eye contact

In case of contact with eyes rinse thoroughly with plenty of water and seek medical advice.

In case of ingestion

not relevant

Physician's information / possible symptoms

The following symptoms may occur:

Unconsciousness

Anaesthetic state

Headache

Confusion

Dizziness

5. Firefighting measures**Suitable extinguishing media**

Product does not burn, fire-extinguishing activities according to surrounding.

Special hazards arising from the substance or mixture

Exposure to fire may cause containers to rupture / explode.

Fire gas of organic material has to be classed invariably as respiratory poison.

In the event of fire the following can be released:

Hydrogen fluoride (HF)

Ignitable gas-air-mixtures can be formed under special conditions.

Fluorine phosgene

Special protective equipment for fire-fighters

Use breathing apparatus with independent air supply.

Do not inhale explosion and/or combustion gases.

Additional information

Heat action leads to pressure increase - risk of aerosol can bursting

Remove the endangered containers or spray them with cold water

6. Accidental release measures**Personal precautions**

Ensure adequate ventilation.

Gas/vapours are heavier than air. They may Accumulate in confined spaces, in particular at or below ground.

Keep people away and stay on the upwind side.

Avoid skin contact with running out liquid (risk of frostbites!).

Environmental precautions

Do not discharge into the drains/surface waters/groundwater.

Methods for cleaning up

Allow to vaporise.

Take up with absorbent material.

7. Handling and storage**Advice on safe handling**

Do not spray into a naked flame or any incandescent material.

Care for thoroughly room ventilation, if necessary use in well ventilated area with local exhaust ventilation at workplace.

Use only in well-ventilated areas.

Advice on protection against fire and explosion

Product is not inflammable

Further information on storage conditions

Protect from direct solar radiation.

Store container at cool and aired place.

Protect from heat/overheating.

Avoid heating to over 50 °C.

8. Exposure controls/personal protection**Additional advice on system design**

For good space ventilation provide, if necessary exhaust on the job.

Ingredients with occupational exposure limits to be monitored

CAS No	Name	Code	[mg/m3]	[ppm]	Remark
811-97-2	1,1,1,2-Tetrafluoroethane (HFC 134a)	8 hours	4240	1000	EH40/2005

Respiratory protection

Environment-independent breathing apparatus.

If ventilation insufficient, wear respiratory protection.

Hand protection

Low-temperature-resistant gloves

Glove material specification [make/type, thickness, permeation time/life, wetting resistance]: butyl rubber, 0,7mm; 480min; 60 min.

The protective gloves to be used must comply with the specifications of EC directive 89/686/EEC and the resultant standard EN374.

The selection of a suitable glove depends and from manufacturer to manufacturer different not only on the material, but also on further quality criteria.

The exact breakthrough time of the glove material is to be inquired from the protection glove manufacturer and must be strictly adhered to.

Eye protection

safety goggles, in case of increased risk add protective face shield

Skin protection

Protective clothing

General protective measures

Avoid contact with eyes and skin

Do not inhale gases/vapours/aerosols.

Hygiene measures

Do not smoke when working.

Remove soaked clothing immediately.

Work in rooms with good ventilation.

9. Physical and chemical properties

Form

compressed liquified gas

Colour

colourless

Odour

ethereal

Important health, safety and environmental information

	Value	Temperature	at	Method	Remark
boiling point	ca. -26 °C				
Flash point	no				
Lower explosion limit	not applicable				
Vapour pressure	5700 hPa	20 °C			
Density	1,21 g/cm ³	25 °C			as liquid
Solubility in water	1500 mg/l	25 °C	1013 hPa		

10. Stability and reactivity

Conditions to avoid

strong heating

Materials to avoid

Reactions with alkali metals.

Reactions with earth alkali metals.

Hazardous decomposition products

With regard to possible decomposition products refer to Section 5.

11. Toxicological information

Experiences made from practice

Gases have a suffocating effect.

The inhalation of thermal decomposition products in form of vapours, mist or smoke may be damaging to the health.

Additional information

Other hazardous properties may not be excluded.

The product is to be handled with the caution usual with chemicals.

12. Ecological information

General regulation

No risk of ecological problems if properly handled and used

Do not allow uncontrolled leakage of product into the environment.

13. Disposal considerations

Waste code No.	Name of waste
14 06 01*	chlorofluorocarbons, HCFC, HFC
15 01 04	metallic packaging

Wastes marked with an asterisk are considered to be hazardous waste pursuant to Directive 91/689/EEC on hazardous waste.

Recommendations for the product

Remove in accordance with local official regulations.

14. Transport information

Land and inland navigation transport ADR/RID

UN 3159 1,1,1,2-TETRAFLUOROETHANE (1,1,1,2-Tetrafluoroethane (R-134a); Norflurane), 2.2, (C/E), Classification code: 2A

Marine transport IMDG

UN 3159 1,1,1,2-TETRAFLUOROETHANE, 2.2

Air transport ICAO/IATA-DGR

UN 3159 1,1,1,2-Tetrafluoroethane, 2.2

Transport/further information

24h EMERGENCY CONTACT (TRANSPORT) +49(0)178 433 7434

ADR u. IMDG: TRANSPORT AS: UN 2037 RECEPTACLES, SMALL CONTAINING GAS (GAS CARTIDGES), 2.2;

Classification code 5A, not restricted as per Special Provision 191 (ADR, IMDG)

ICAO/IATA-DGR: TRANSPORT AS: UN 2037 RECEPTACLES, SMALL; CONTAINING GAS, 2.2; not restricted as per Special Provision A98

15. Regulatory information

16. Other information

Recommend uses and restrictions

National and local regulations concerning chemicals shall be observed.

Further information

The information contained herein is based on the state of our knowledge. It characterizes the product with regard to the appropriate safety precautions. It does not represent a guarantee of the properties of the product.

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Please observe the following disclaimer! --- Our safety data sheets have been compiled according to effective EU-directives, WITHOUT taking into account the special national directives concerning the handling of hazardous substances.

Each user is responsible for the implementation of the national special regulations.

Sources of key data used

Data sheets of the sub-supplier.

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