



ISCEON® 49 (R-413A)

Version 2.3

Revision Date 22.09.2005

Ref. 13000000125

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 : ISCEON® 49 (R-413A)

Use of the Substance/Preparation : refrigerant

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

Telephone : +31-78-630.1011

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

2. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No.	EC-No.	Classification	Concentration [%]
1,1,1,2-Tetrafluoroethane (R134a)	811-97-2	212-377-0		88
Octafluoropropane	76-19-7	200-941-9		9
Isobutane	75-28-5	200-857-2	F+; R12	3

For the full text of the R phrases mentioned in this Section, see Section 16.

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 ³ 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	: colourless,
Odour	: ether-like,
pH	: neutral
Boiling point/range	: -35 °C at 1 013 hPa
Flash point	: does not flash
Upper explosion limit	: , not applicable
Vapour pressure	: 6 830 hPa at 20 °C
Density	: 1,214 g/cm ³ at 20 °C, (as liquid)
Water solubility	: , slightly soluble
Relative vapour density	: 3,9

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.
Materials to avoid	: alkali metals, alkaline earth metals, powdered metals, powdered metal salts
Hazardous decomposition products	: hydrogen halides, carbon dioxide (CO ₂), Carbon monoxide, fluorocarbons, carbonyl halides

11. TOXICOLOGICAL INFORMATION

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- Acute inhalation toxicity
• 1,1,1,2-Tetrafluoroethane : LC50/ 4 h/ rat : > 2 085 mg/l (R134a)
- Carcinogenicity assessment : Did not show carcinogenic effects in animal experiments.
- Toxicity to reproduction assessment : Did not show mutagenic or teratogenic effects in animal experiments.
- Human experience : Excessive exposures may affect human health, as follows:
Inhalation
severe shortness of breath, narcosis, Irregular cardiac activity
- Further information : Rapid evaporation of the liquid may cause frostbite.

12. ECOLOGICAL INFORMATION

- Toxicity to fish
• 1,1,1,2-Tetrafluoroethane : LC50 / 96 h/ Oncorhynchus mykiss (rainbow trout) : 450 mg/l (R134a)
- Aquatic toxicity
• 1,1,1,2-Tetrafluoroethane : / EC50/ 48 h/ Daphnia: 980 mg/l (R134a)
- Global warming potential (GWP) : 1 800

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
UN-No: 1078
Labelling No.: 2.2
Proper shipping name: Refrigerant gas, n.o.s. (Tetrafluoroethane, Perfluoropropane)

IATA_C

- Class: 2.2
UN-No: 1078
Labelling No.: 2.2

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Proper shipping name: Refrigerant gas, n.o.s. (Tetrafluoroethane, Perfluoropropane)

IMDG

Class: 2.2

UN-No: 1078

Labelling No.: 2.2

Proper shipping name: Refrigerant gas, n.o.s. (Tetrafluoroethane, Perfluoropropane)

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**Text of R phrases mentioned in Section 2**

R12 Extremely flammable.

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

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.