
SAFETY DATA SHEET

This Safety Data Sheet is provided in compliance with the EC Directive 1907/2006-453/2010

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

1.1 Product identifier

- Product Name: UNICOOL R-407F
- Product Part Number: R-407F

1.2 Relevant identified uses of the substance or mixture and uses advised against

- Use of the substance/mixture:
- Refrigerant

1.3 Details of the supplier of the safety data sheet

- Name of Supplier: Wilhelmsen Ships Service AS
- Address of Supplier: Willem Barentszstraat 50, 3165AB Rotterdam, The Netherlands
-
- Telephone: +31 4877 777 Fax: +31 4877 888
-
- Head office: Wilhelmsen Ships Service AS
- Strandveien 20, N1324 Lysaker
- Norway, Tel: (47) 6349 440 35
-
- Other suppliers SEE SECTION 16!!!
- For quotations contact your local Customer Services
-
- Responsible Person: Product HSE Manager,
- Email: Email: WSS.GLOBAL.SDSINFO@wilhelmsen.com
- Telephone: Tel.: +31 10 4877775

1.4 Emergency telephone number

- ****ONLY TO BE USED IN CASE OF AN INCIDENT****
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- International 24hrs Emergency NCEC: +44 1865 407333
- American Chemistry Council 24hrs +1 703 527 3887
- American 24hrs Emergency CHEMTREC (800) 424 9300
- Greece: Poisoning emergency center, +30 210 7793777
- Norway: Poison information centre, +47 22591300
- Sweden: Poison information centre, +46 08 33 12 31
- China NRCC 24hrs emergency telephone number: +86-0532-8388 9090
- Wilhelmsen Ships Service, Melbourne, AUSTRALIA Emergency 24hrs: +61 3 9630 0998
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- The Netherlands: National Poisons Information Centre +31 30 274 88 88

SECTION 2 Hazards identification

2.1 Classification of the substance or mixture

- Not classified as hazardous for users

SECTION 2 Hazards identification (....)**2.2 Label elements**

- Not classified as hazardous for users
- Hazard phrases
Not applicable
- Precautionary Phrases
Not applicable

2.3 Other hazards

- Odour: Sweet ether-like odour
 - Appearance: Liquefied pressure gas
 - Contact with eyes: May cause redness and irritation
 - Contact with skin: Possible frost-bite of affected areas
 - Inhalation: May cause dizziness, confusion, headache or stupor, In cases of severe exposure, anaesthesia may develop
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SECTION 3 Composition/information on ingredients**3.1 Mixtures**

- Pentafluoroethane
Concentration: 30%
CAS Number: 354-33-6
EC Number: 206-557-8
H Phrases: H280
Symbols: Not applicable
Categories: Press. Gas, Liq. Gas
 - 1,1,1,2-Tetrafluorethaan
Concentration: 40%
CAS Number: 811-97-2
EC Number: 212-377-0
H Phrases: H280
Symbols: Not applicable
Categories: Press. Gas, Liq. Gas
 - Difluormethaan
Concentration: 30%
CAS Number: 75-10-5
EC Number: 200-839-4
H Phrases: R12 - H220, H280
Symbols: F+
Categories: Flam. Gas 1, Press. Gas, Liq. Gas
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SECTION 4 First aid measures**4.1 Description of first aid measures**

SECTION 4 First aid measures (....)

- In case of contact with liquid, thaw frosted parts with water. Do not attempt to remove clothing which has stuck to the skin
- Seek immediate medical attention
- IF SWALLOWED: rinse mouth. Do NOT induce vomiting (P301+P330+P331).
- Never give anything by mouth to an unconscious person
- Never make an unconscious person vomit or drink fluids
- Seek immediate medical attention
- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing (P305+P351+P338).
- Seek immediate medical attention
- IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing (P304+P341).
- IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing (P304+P340).
- When in doubt or symptoms persist, seek medical attention

4.2 Most important symptoms and effects, both acute and delayed

- Possible redness and irritation of affected areas
- Possible frost-bite of affected areas

4.3 Indication of any immediate medical attention and special treatment needed

Do not give adrenalin or equivalent medicines.

SECTION 5 Fire-fighting measures**5.1 Extinguishing media**

- Not flammable. In case of fire use extinguishing media appropriate to surrounding conditions

5.2 Special hazards arising from the substance or mixture

- Smoke from fires is corrosive. Take precautions to protect personnel from exposure
- Inform Fire Brigade of potential danger of exploding and rocketing cylinders

5.3 Advice for firefighters

- Keep container(s) exposed to fire cool, by spraying with water
 - Smoke from fires is corrosive. Take precautions to protect personnel from exposure
 - Wear chemical protection suit and positive-pressure breathing apparatus
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SECTION 6 Accidental release measures**6.1 Personal precautions, protective equipment and emergency procedures**

- Shut off source of leak if safe to do so
- In poorly ventilated areas or confined spaces, use an airline respirator or self-contained breathing apparatus

6.2 Environmental Precautions

- Avoid release to the environment (P273).

6.3 Methods and material for containment and cleaning up

- Shut off source of leak if safe to do so
- Allow product to evaporate
- Ventilate area

6.4 Reference to other sections

SECTION 6 Accidental release measures (....)

- See Section 13
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SECTION 7 Handling and storage

7.1 Precautions for safe handling

- Ensure adequate ventilation
- Avoid breathing dust/fume/gas/mist/vapours/spray (P261).
- Restricted to professional users
- Do not smoke

7.2 Conditions for safe storage, including any incompatibilities

- Keep in a cool, dry, well ventilated place
- Do not store above 45 °C

7.3 Specific end use(s)

- Contact supplier for further information
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SECTION 8 Exposure controls/personal protection

8.1 Control parameters

- Difluoromethane (R-32)
TLV (TWA) 1000 ppm
- Pentafluoroethane (R125)
TLV (TWA) 1000 ppm
- 1,1,1,2-Tetrafluoroethane (R-134a)
TLV (TWA) 1000 ppm

8.2 Exposure controls

- The undiluted product must not be used in a confined space without good ventilation

8.3 Occupational exposure controls



- In poorly ventilated areas or confined spaces, use an airline respirator or self-contained breathing apparatus
 - Wear safety boots when handling cylinders.
-

SECTION 9 Physical and chemical properties

9.1 Information on basic physical and chemical properties

- Odour: Sweet ether-like odour
- Appearance: Liquefied pressure gas
- pH - not applicable
- Boiling point -44.8 °C to 760 °C
- Vapour pressure 781 kPa @ 25 °C
- Vapour density (air = 1) 3.0
- Melting point < -100 °C to 760 °C
- Insoluble in water

SECTION 9 Physical and chemical properties (....)

- Density 1160 kg/m³ at 20 °C
- Not flammable
- Unstable above 250 deg C
- Auto-ignition point >700 deg C at 760 mm Hg

9.2 Other information

- No information available
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SECTION 10 Stability and reactivity

10.1 Reactivity

- This article is considered stable under normal conditions

10.2 Chemical stability

- Considered stable under normal conditions
- Unstable above 250 deg C

10.3 Possibility of hazardous reactions

- No hazardous reactions known if used for its intended purpose

10.4 Conditions to avoid

- Avoid overheating
- Keep away from naked flames, incandescent or hot surfaces

10.5 Incompatible materials

- Avoid contact with magnesium and alloys containing more than 2% magnesium.

10.6 Hazardous Decomposition Products

- Decomposition products may include halogen compounds
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SECTION 11 Toxicological information

11.1 Information on toxicological effects

- Not applicable

11.2 Contact with eyes

- May cause frost-bite

11.3 Contact with skin

- May cause frost-bite

11.4 Ingestion

- Not regarded as a potential route of exposure.

11.5 Inhalation

- In cases of severe exposure, anaesthesia may develop
 - May disturb the respiration, heart and nervous system
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SECTION 12 Ecological information

12.1 Toxicity

- On available data, substance is not harmful to aquatic life

12.2 Persistence and degradability

- Most components in this product are not readily biodegradable.

12.3 Bioaccumulation Potential

SECTION 12 Ecological information (....)

12.4 Mobility in soil

- This substance is volatile
- Insoluble in water

12.5 Results of PBT and vPvB assessment

- Not a PBT according to REACH Annex XIII

12.6 Other Adverse Effects

- Global Warming Potential: 1525 (CO₂ = 1; 100 years)
 - Ozone Depletion Potential: 0
 - GWP and ODP values according to IPCC/ASHRAE/ARI.
 - IPCC = Intergovernmental Panel on Climate Control
 - ASHRAE = American Society of Heating, Refrigeration and Air-Conditioning Engineers
 - ARI = American Refrigeration Institute
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SECTION 13 Disposal considerations

13.1 Waste treatment methods

- Do not discharge into drains or the environment, dispose to an authorised waste collection point
- Refer to manufacturer/supplier for information on recovery/recycling (S59)

13.2 Classification

- This material and/or its container must be disposed of as hazardous waste
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SECTION 14 Transport information

14.1 UN

- UN No.: UN3163
- Proper Shipping Name: LIQUEFIED GAS, N.O.S. (1,1,1,2-Tetrafluoroethane, Pentafluoroethane, Difluoromethane)
- Hazard Class: 2.2
- Packing Group: Not applicable

14.2 Environmental hazards

- On available data, substance is not harmful to the environment

14.3 Special precautions for user

- Gas cylinders must be equipped with valve protection caps during transport.

14.4 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code

- Not applicable

14.5 Road/Rail (ADR/RID)

- ADR UN No.: UN3163
- Proper Shipping Name: LIQUEFIED GAS, N.O.S. (1,1,1,2-Tetrafluoroethane, Pentafluoroethane, Difluoromethane)
- ADR Hazard Class: 2.2

SECTION 14 Transport information (....)

- ADR Packing Group: -

14.6 Sea (IMDG)

- IMDG UN No.: UN3163
- Proper Shipping Name: LIQUEFIED GAS, N.O.S. (1,1,1,2-Tetrafluoroethane, Pentafluoroethane, Difluoromethane)
- IMDG Hazard Class: 2.2
- IMDG Pack Group.: -
- IMDG EmS: F-C, S-V

14.7 Air (ICAO/IATA)

- ICAO UN No.: UN3163
- Proper Shipping Name: LIQUEFIED GAS, N.O.S. (1,1,1,2-Tetrafluoroethane, Pentafluoroethane, Difluoromethane)
- ICAO Hazard Class: 2.2
- ICAO Packing Group: -

14.8 DOT / CFR (US Department of Transportation)

- Identification Number: UN3163
- DOT Proper Shipping Name: LIQUEFIED GAS, N.O.S. (1,1,1,2-Tetrafluoroethane, Pentafluoroethane, Difluoromethane)
- DOT Labels: 2.2
- Product RQ (lbs): -

SECTION 15 Regulatory information**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

- This Safety Data Sheet has been prepared in accordance with article 31 and annex II in REACH and Directive 453/2010/EU.
- This Safety Data Sheet is provided in compliance with The Dangerous Substances Directive (67/548/EEC)
- This Safety Data Sheet is provided in compliance with The Dangerous Preparations Directive (88/379/EEC)

15.2 Chemical Safety Assessment

- None

SECTION 16 Other information

Text not given with phrase codes where they are used elsewhere in this safety data sheet:- H220: Extremely flammable gas. H280: Contains gas under pressure; may explode if heated. R12: Extremely Flammable.

The information provided about the product on this Safety Data Sheet has been compiled from knowledge of the individual constituents

The data given here only applies when product used for proper application(s). The product is not sold as suitable for other applications - usage in such may cause risks not mentioned in this sheet. Do not use for other application(s) without seeking advice from manufacturer

The data given here is based on current knowledge and experience. This Safety Data Sheet describes the product in terms of safety requirements and does not signify any warranty with regard

SECTION 16 Other information (....)

to the product's properties

The most up-to-date version of this MSDS can be found on www.wilhelmsen.com/shipsservice

OTHER CONTACT INFORMATION MAJOR CHEMICAL OFFICES

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