
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-417A
- Product Part Number: 905637 (51 kg)

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
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- 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
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SECTION 2 Hazards identification**2.1 Classification of the substance or mixture**

- Not classified as hazardous for users

2.2 Label elements

- Not classified as hazardous for users

SECTION 2 Hazards identification (....)

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- Contains:
 - 1,1,1,2-Tetrafluoroethane, Pentafluoroethane / Butane
 - Contains fluorinated greenhouse gas covered by the Kyoto Protocol., HFC-134a, HFC-125
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- Hazard phrases
Not applicable
- Precautionary Phrases
Not applicable

2.3 Other hazards

- Appearance: Liquefied pressure gas
- Odour: Sweet ether-like odour
- Contact with eyes: Possible frost-bite of affected areas
- Contact with skin: Possible frost-bite of affected areas
- Inhalation: In cases of severe exposure, anaesthesia may develop, In cases of severe exposure, respiratory failure may develop, May disturb the respiration, heart and nervous system

SECTION 3 Composition/information on ingredients**3.1 Mixtures**

- 1,1,1,2-Tetrafluoroethane
 - Concentration: 50
 - CAS Number: 811-97-2
 - EC Number: 212-377-0
 - R/H Phrases: H280
 - Symbols: GHS04
 - Categories: Press. Gas
- Pentafluoroethane (R125)
 - Concentration: 46.6
 - CAS Number: 354-33-6
 - EC Number: 206-557-8
 - R/H Phrases: H280
 - Symbols: GHS04
 - Categories: Press. Gas
- butane
 - Concentration: 3.4
 - CAS Number: 106-97-8
 - EC Number: 203-448-7
 - R/H Phrases: H220, R12
 - Symbols: GHS02, GHS04, F+
 - Categories: Flam. Gas 1 Press. Gas

SECTION 4 First aid measures

4.1 Description of first aid measures

- IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing (P304+P341).
- Rescuers should put on approved respiratory protection before entering the area to render first aid
- Apply artificial respiration only if patient is not breathing
- When in doubt or symptoms persist, seek medical attention
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- IF ON SKIN: Immerse in cool water/wrap in wet bandages (P302+P334).
- In case of contact with liquid, thaw frosted parts with water. Do not attempt to remove clothing which has stuck to the skin
- Burns must be treated by a physician.
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- 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

4.2 Most important symptoms and effects, both acute and delayed

- Possible frost-bite of affected areas
- In cases of severe exposure, anaesthesia may develop
- In cases of severe exposure, breathing difficulty may develop
- In cases of severe exposure, confusion may develop
- In cases of severe exposure, dizziness, confusion, headache or stupor may develop
- Burns must be treated by a physician.

4.3 Indication of any immediate medical attention and special treatment needed

- Treat symptomatically
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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

- Contains gas under pressure; may explode if heated (H280).
- Pressurised container: may burst if heated (H229).
- Inform Fire Brigade of potential danger of exploding and rocketing cylinders
- In case of fire, do not breathe fumes
- Carbon oxides may be formed
- Hydrogen fluoride
- Fluorinated compounds

5.3 Advice for firefighters

- Wear chemical protection suit and positive-pressure breathing apparatus
 - In the event of an adjacent fire, cool containers with water spray
 - Keep container(s) exposed to fire cool, by spraying with water
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SECTION 6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

SECTION 6 Accidental release measures (....)

- 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).
- Hazardous to the ozone layer (EUH059).
- Refer to manufacturer/supplier for information on recovery/recycling (P502).

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

- See Section 13
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SECTION 7 Handling and storage**7.1 Precautions for safe handling**

- Avoid breathing dust/fume/gas/mist/vapours/spray (P261).
- Do not get in eyes, on skin, or on clothing (P262).
- Ensure adequate ventilation
- Wear protective clothing as per section 8

7.2 Conditions for safe storage, including any incompatibilities

- Keep cool. Protect from sunlight (P235+P410).
- Keep in a cool, dry, well ventilated place
- Do not store above 45 °C

7.3 Specific end use(s)

- Not applicable
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SECTION 8 Exposure controls/personal protection**8.1 Control parameters**

- 1,1,1,2-Tetrafluoroethane
TLV (TWA) 1000 ppm - 4240 mg/m³ ()
- Pentafluoroethane (R125)
TLV (TWA) 1000 mg/m³ ()
- Butane
TLV (TWA) 750 ppm - 600 mg/m³ ()

8.2 Exposure controls

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

8.3 Occupational exposure controls

SECTION 8 Exposure controls/personal protection (....)

- In poorly ventilated areas or confined spaces, use an airline respirator or self-contained breathing apparatus
 - Wear safety boots when handling cylinders.
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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/Range: -39,1 C
- Vapour Pressure: 9,835 hPa at 25 °C
- Density 1,2 g/cm³ at 20 deg C
- Not flammable

9.2 Other information

- None
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SECTION 10 Stability and reactivity

10.1 Reactivity

- No hazardous reactions known if used for its intended purpose

10.2 Chemical stability

- Considered stable under normal conditions

10.3 Possibility of hazardous reactions

- No hazardous reactions known if used for its intended purpose

10.4 Conditions to avoid

- Keep away from heat and sources of ignition
- Keep away from naked flames, incandescent or hot surfaces
- Reaction products may include flammable gas

10.5 Incompatible materials

- Incompatible with alkali metals
- Incompatible with alkaline earth metals

10.6 Hazardous Decomposition Products

- Hydrogen fluoride
 - Carbon oxides may be formed
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SECTION 11 Toxicological information

11.1 Information on toxicological effects

- Asphyxiant

11.2 Contact with eyes

- May cause frost-bite

11.3 Contact with skin

- May cause frost-bite

11.4 Ingestion

SECTION 11 Toxicological information (....)

- Not regarded as a potential route of exposure.

11.5 Inhalation

- In cases of severe exposure, anaesthesia may develop
 - In cases of severe exposure, respiratory failure 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

- Volatile portion is significant

12.3 Bioaccumulation Potential

- Bioaccumulation of the components in this product is insignificant.

12.4 Mobility in soil

- This substance is volatile
- Water solubility 1.5 g/l

12.5 Results of PBT and vPvB assessment

- Not a PBT according to REACH Annex XIII

12.6 Other Adverse Effects

- Global Warming Potential: 1950 (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
- Disposal should be in accordance with local, state or national legislation
- Disposal should be in accordance with manufacturer's instructions

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.: UN1078

SECTION 14 Transport information (....)

- Proper Shipping Name: REFRIGERANT GAS, N.O.S. (1,1,1,2
TETRAFLUOROETHANE, PENTAFLUOROETHANE,
BUTANE, MIXTURE)
- Hazard Class: 2.2
- Packing Group:

14.2 Environmental hazards

- Not Classified

14.3 Special precautions for user

- No special precautions are required for this product

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.: UN1078
- Proper Shipping Name: REFRIGERANT GAS, N.O.S. (1,1,1,2
TETRAFLUOROETHANE, PENTAFLUOROETHANE,
BUTANE, MIXTURE)
- ADR Hazard Class: 2.2
- ADR Packing Group: N/A

14.6 Sea (IMDG)

- IMDG UN No.: UN1078
- Proper Shipping Name: REFRIGERANT GAS, N.O.S. (1,1,1,2
TETRAFLUOROETHANE, PENTAFLUOROETHANE,
BUTANE, MIXTURE)
- IMDG Hazard Class: 2.2
- IMDG Pack Group.: N/A
- IMDG EmS: F-C, S-V

14.7 Air (ICAO/IATA)

- ICAO UN No.: UN1078
- Proper Shipping Name: REFRIGERANT GAS, N.O.S. (1,1,1,2
TETRAFLUOROETHANE, PENTAFLUOROETHANE,
BUTANE, MIXTURE)
- ICAO Hazard Class: 2.2
- ICAO Packing Group: N/A

14.8 DOT / CFR (US Department of Transportation)

- Identification Number: UN1078
 - DOT Proper Shipping Name: REFRIGERANT GAS, N.O.S. (1,1,1,2
TETRAFLUOROETHANE, PENTAFLUOROETHANE,
BUTANE, MIXTURE)
 - DOT Labels: 2.2
 - Product RQ (lbs):
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SECTION 15 Regulatory information**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

- Council Directive 1999/45/EEC Classification, packing and labelling of dangerous preparations.
- Refer to current The Dangerous Substances Directive (67/548/EEC)

SECTION 15 Regulatory information (....)

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

15.2 Chemical Safety Assessment

- None
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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 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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