

SAFETY DATA SHEET

1 Identification of the substance or preparation and of the company/undertaking

Product Name: **UNICOOL R-427A 53 KG REFRIGERANT**
 Datasheet Number: 905708 2. 0. 0
 Use of the substance/preparation: Refrigerant
 Product Part Number: 905708
 Head Office:: Wilhelmsen Ships Service AS
 address: Strandveien 20, N1324 Lysaker, Norway, Tel: (+47) 67 58 45 50
 Name of Supplier: Wilhelmsen Ships Service AS
 Address of Supplier: Willem Barentszstraat 50
 3165AB
 Rotterdam
 The Netherlands
 Telephone: +31 10 4877 777
 Fax: +31 10 4877 888
 Responsible Person: Patrick Rijdsdijk, Product HSE Manager, Tel.: +31 6 349 440 35
 Email: Patrick.Rijdsdijk@Wilhelmsen.com
 Telephone: (+47) 67 58 45 50
 Emergency Telephone: ****ONLY TO BE USED IN CASE OF AN INCIDENT****
 NCEC: +44 1865 407333, CHEMTREC (800) 424 9300
 American Chemistry Council +1 703 527 3887,
 Greece +30 210 7793777

2 Hazards identification

- Odour: Sweet ether-like odour
- Appearance: Liquefied pressure gas, colourless
- Contact with eyes: May cause 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, Asphyxiant
- Ingestion: Not regarded as a potential route of exposure.

3 Composition/information on ingredients

Chemical Name	Concentration	CAS Number	EC Number	R/H Phrases*	Symbols
Difluoromethane	13-18	75-10-5	200-839-4	R12	F+
Pentafluoroethane	22-28	354-33-6	206-557-8	-	-
1,1,1-trifluoroethane	7-13	420-46-2	206-996-5	R12	F+
1,1,1,2-tetrafluoroethane	47-53	811-97-2	212-377-0	-	-

*See Section 16

4 First aid measures

Contact with skin

- 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.

4 First aid measures (....)

Contact with eyes

- If substance has got into eyes, immediately wash out with plenty of water for at least 15 minutes
- Obtain immediate medical attention

Ingestion

- Give 200-300mls (half pint) water to drink
- Never give anything by mouth to an unconscious person
- Do not induce vomiting
- Seek immediate medical attention

Inhalation

- Remove patient to fresh air
- Apply artificial respiration only if patient is not breathing
- When in doubt or symptoms persist, seek medical attention

General

- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible) (S45)

Notes to Physicians

Do not give adrenalin or equivalent medicines.

5 Fire-fighting measures

- Auto-ignition point - not applicable
 - Not flammable. In case of fire use extinguishing media appropriate to surrounding conditions
 - Stop leak if safe to do so.
 - Inform Fire Brigade of potential danger of exploding and rocketing cylinders
 - Wear chemical protection suit and breathing apparatus
 - Smoke from fires is corrosive. Take precautions to protect personnel from exposure
-

6 Accidental release measures

Personal Precautions

- 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
- Evacuate the area and keep personnel upwind
- Shut off all ignition sources

Clean Up Actions

- Ventilate area
-

7 Handling and storage

Handling

- Do not breathe vapour (S23)
- Do not get in eyes, on skin, or on clothing.
- Do not smoke
- In case of accident by inhalation: remove casualty to fresh air and keep at rest (S63)
- Restricted to professional users
- Use only in well ventilated areas (S51)

Storage

- Keep in a cool, dry, well ventilated place
 - Do not store above 45 °C
 - Keep cool. Protect from sunlight.
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8 Exposure controls and personal protection

Exposure Limits

- Difluoromethane
TLV (TWA) 1000 ppm - 2200 mg/m³ ()
- Pentafluoroethane
TLV (TWA) 1000 ppm - 4900 mg/m³ ()
- 1,1,1-trifluoroethane
TLV (TWA) 1000 ppm - 3400 mg/m³ ()
- 1,1,1,2-tetrafluoroethane
TLV (TWA) 1000 ppm - 4240 mg/m³ ()

Exposure controls

- Engineering controls should be provided which maintain airborne concentrations as low as practicable
- The undiluted product must not be used in a confined space without good ventilation

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.
- Wear suitable gloves (S37)



Boots



Gloves



No Smoking

No Flames

9 Physical and chemical properties

- Odour: Sweet ether-like odour
 - Appearance: Liquefied pressure gas, colourless
 - pH - not applicable
 - Boiling point -42.7 - -35.5 °C
 - Vapour pressure 155.7 psia at 20 deg C
 - Vapour density - not known
 - Freezing point unknown
 - Melting point - not known
 - Water solubility - not known
 - Specific gravity 1.17 g/cm³
 - Auto-ignition point - not applicable
-

10 Stability and reactivity

- This article is considered stable under normal conditions
 - Keep away from naked flames, incandescent or hot surfaces
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11 Toxicological information

Inhalation

- In cases of severe exposure, anaesthesia may develop
- May cause breathing difficulty

Contact with skin

- May cause frost-bite
-

11 Toxicological information (....)

Contact with eyes

- May cause frost-bite

Ingestion

- Not regarded as a potential route of exposure.

Carcinogenicity

- No evidence of carcinogenic effects
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12 Ecological information

Ecotoxicity

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

Mobility

- This substance is volatile

Persistence and Biodegradability

- Biodegradability greater than 10% (stability test)

Bioaccumulation Potential

- No information available
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13 Disposal considerations

Classification

- This material and/or its container must be disposed of as hazardous waste

Disposal considerations

- Do not discharge into drains or the environment, dispose to an authorised waste collection point
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14 Transport information



Non-Flammable Compressed Gas

Proper Shipping Name: REFRIGERANT GAS, N.O.S.

(1,1,1,2-Tetrafluoroethane-
Pentafluoroethane mixture)

Emergency Action Code

UN

Road/Rail (ADR/RID)

Proper Shipping Name:	REFRIGERANT GAS, N.O.S. (1,1,1,2-Tetrafluoroethane- Pentafluoroethane mixture)	ADR Hazard Class:	2.2
ADR UN No.:	UN1078	ADR subrisk:	-
ADR Packing Group:	N/A	ADR Flashpoint:	-
ADR-RID Labels:	2.2		

14 Transport information (....)

Sea (IMDG)

Proper Shipping Name:	REFRIGERANT GAS, N.O.S. (1,1,1,2-Tetrafluoroethane-Pentafluoroethane mixture)		
IMDG UN No.:	UN1078	IMDG Hazard Class.:	2.2
IMDG Pack Group.:	N/A	IMDG EmS:	F-C, S-V
IMDG subrisk:	-	IMDG Labels:	2.2
IMDG Flashpoint:	-		

Air (ICAO/IATA)

Proper Shipping Name:	REFRIGERANT GAS, N.O.S. (1,1,1,2-Tetrafluoroethane-Pentafluoroethane mixture)		
ICAO Un No.:	UN1078	ICAO Hazard Class.:	2.2
ICAO Packing Group.:	N/A	ICAO subrisk:	-
ICAO Labels:	2.2	ICAO Flashpoint:	-

DOT / CFR (US Department of Transportation)

DOT Proper Shipping Name:	REFRIGERANT GAS, N.O.S. (1,1,1,2-Tetrafluoroethane-Pentafluoroethane mixture)		
Hazardous Material:	1,1,1,2-Tetrafluoroethane-pentafluoroethane	Hazard Class:	2.2
Identification Number:	UN1078	Product RQ (lbs):	-
DOT subrisk:	-	DOT Labels:	2.2
DOT Flashpoint:	-		

15 Regulatory information

Classification and labelling

- Not classified as hazardous for supply

Risk Phrases

- Not applicable

Safety Phrases

- Not applicable

16 Other information

Text of R and S phrase codes used in this safety data sheet:- R12: Extremely Flammable.

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 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

This Safety Data Sheet has been prepared in accordance with article 31 and annex II in REACH...

16 Other information (....)

This product is covered by The Dangerous Preparations Directive (88/379/EEC) as amended
This Safety Data Sheet is provided in compliance with The Dangerous Substances Directive
(67/548/EEC)