

SAFETY DATA SHEET

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

Product Name: **UNICOOL R-422D**
Datasheet Number: 905710 4. 0. 0
Use of the substance/preparation: Refrigerant
Product Part Number: 905710
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
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Responsible Person: Patrick Rijsdijk, Product HSE Manager, Tel.: +31 6 349 440 35
Email: Patrick.Rijsdijk@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

3 Composition/information on ingredients

Chemical Name	Concentration	CAS Number	EC Number	R/H Phrases*	Symbols
Isobutane (<0.1% butadine)	2-5	75-28-5	200-857-2	R12	F+
Pentafluoroethane	60-70	354-33-6	206-557-8	-	-
1,1,1,2-tetrafluoroethane	30-35	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 Breathing Apparatus
 - Wear neoprene gloves
-

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

Environmental Precautions

- Avoid release to the environment.

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)
-

7 Handling and storage (....)

Storage

- Keep in a cool, dry, well ventilated place
 - Do not store above 52 °C
 - Keep cool. Protect from sunlight.
-

8 Exposure controls and personal protection

Exposure Limits

- Isobutane (<0.1% butadiene)
TLV (TWA) 800 ppm - 1900 mg/m³ ()
- Pentafluoroethane
TLV (TWA) 1000 ppm - 4900 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 -46,2 °C to -41,5 °C
 - Vapour pressure 12200 hPa at 25 deg C
 - Vapour density - not known
 - Freezing point unknown
 - Melting point - not known
 - Partially soluble in water
 - Density 1.157 g/cm³ at 25 (as liquid) deg C
 - 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, Avoid contact with alkali metals, Avoid contact with alkaline earth metals
 - Decomposition products may include carbon dioxide
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11 Toxicological information

11 Toxicological information (....)

Inhalation

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

Contact with skin

- May cause frost-bite

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

- No information available

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.

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

Emergency Action Code

UN

14 Transport information (....)

Road/Rail (ADR/RID)

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

Sea (IMDG)

Proper Shipping Name:	REFRIGERANT GAS, N.O.S. (Isobutane, 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 Flashpoint:	-

Air (ICAO/IATA)

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

DOT / CFR (US Department of Transportation)

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

15 Regulatory information

Classification and labelling

- Council Directive 1999/45/EEC Classification, packing and labelling of dangerous preparations.
- This Safety Data Sheet is provided in compliance with The Dangerous Substances Directive (67/548/EEC)

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

16 Other information (....)

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