

SAFETY DATA SHEET

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

1.1 Product identifier

Product Name: REFRIGERANT R-413A
Datasheet Number: R-413A-r 1. 0. 0
Head Office:: Wilhelmsen Ships Service AS
Address: Strandveien 20, N1324 Lysaker, Norway, Tel:(+47) 67 58 45 50

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

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 10 4877 777
Fax: +31 10 4877 888
Responsible Person: Patrick Rijsdijk, Product HSE Manager, Tel.:+31 6 349 440 35
Email: patrick.rijsdijk@wilhelmsen.com

1.4 Emergency telephone number

****ONL 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
Australia: +61 3 9630 0998

2 Hazards identification

2.1 Classification of the substance or mixture

- Not classified as hazardous for users

2.2 Label elements

- None
- Pressurized container

Risk Phrases

- Not applicable

Safety Phrases

- Not applicable

2.3 Other hazards

- Odour: Sweet ether-like odour
- Appearance: Liquefied pressure gas
- Contact with eyes: May cause irritation
- Contact with skin: Possible frost-bite of affected areas
-

2 Hazards identification (....)

Inhalation: In cases of severe exposure, dizziness, confusion, headache or stupor may develop, In cases of severe exposure, anaesthesia may develop

3 Composition/information on ingredients

3.1 Mixtures

Chemical Name	Concentration	CAS Number	EC Number	R/H Phrases*	Symbols
Octafluoropropane (R-218)	5-10%	76-19-7	200-941-9	-	-
1,1,1,2-Tetrafluoroethane (R-134A)	85-90%	811-97-2	212-377-0	-	-
Isobutane (R-600a)	1-5%	75-28-5	75-28-5	R12	F+

*See Section 16

4 First aid measures

4.1 Description of first aid measures

- IF ON SKIN: Immerse in cool water/wrap in wet bandages.
- In case of contact with liquid, thaw frosted parts with water. Do not attempt to remove clothing which has stuck to the skin
- Obtain immediate medical attention
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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.
- If substance has got into eyes, immediately wash out with plenty of water for at least 15 minutes
- Irrigate eyes thoroughly whilst lifting eyelids
-
- IF INHALED: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing.
- IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- Wear Breathing Apparatus
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- IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
- Give 200-300mls (half pint) water to drink
- Never give anything by mouth to an unconscious person
- Seek immediate medical attention

4.2 Most important symptoms and effects, both acute and delayed

- Aspiration hazard
- In cases of severe exposure, dizziness, confusion, headache or stupor may develop
- In cases of severe exposure, anaesthesia may develop
- Possible frost-bite of affected areas

4.3 Indication of immediate medical attention and special treatment needed

Do not give adrenalin or equivalent medicines.

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

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

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
 - Inform Fire Brigade of potential danger of exploding and rocketing cylinders
-

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

- Dangerous for the ozone layer (R59)
- Avoid release to the environment. Refer to special instructions/Safety data sheets (S61)

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

7 Handling and storage

7.1 Precautions for safe handling

- Use only in well ventilated areas (S51)
- Restricted to professional users
- Do not smoke
- Do not breathe vapour (S23)

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)

8 Exposure controls/personal protection

8.1 Control parameters

- Octafluoropropane (R-218)
TLV (TWA) 1000 ppm
 - 1,1,1,2-Tetrafluoroethane (R-134A)
-

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

- TLV (TWA) 1000 ppm
- Isobutane (R-600a)
 - TLV (TWA) 600 ppm (Isobutane (R-600a))

8.2 Exposure controls

- Ensure adequate 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.



Boots



Gloves



No Flames



No Smoking

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 -35 °C at 760 mm /Hg
- Vapour pressure 785 kPa @ 25 °C
- Vapour density (air = 1) 3.9
- Melting point < -100 °C at 760 mm /Hg
- Water solubility 1.5 g/l
- Density 1190 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

10 Stability and reactivity

10.1 Reactivity

- This article is considered stable under normal conditions

10.2 Chemical stability

- This article is 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

- 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 Stability and reactivity (....)

10.6 Hazardous Decomposition Products

- Decomposition products may include halogen compounds
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11 Toxicological information

11.1 Information on toxicological effects

- Asphyxiant

Inhalation

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

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

12.1 Toxicity

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

12.2 Persistence and degradability

- No information available

12.3 Bioaccumulation Potential

- No information available

12.4 Mobility in soil

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

12.5 Results of PBT and vPvB assessment

12.6 Other Adverse Effects

- This product is controlled under the "Montreal Protocol" (1992 revision).
- Global Warming Potential: 1770 (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

13 Disposal considerations

13.1 Waste treatment methods

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

Classification

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



Non-Flammable Compressed Gas

14.1 UN Number

- UN1078

14.2 UN Proper Shipping Name

- REFRIGERANT GAS, N.O.S. (OCTAFLUOROPROPANE, 1,1,1,2-TETRAFLUOROETHANE mixture)

14.3 Transport hazard class(es)

- 2.2

14.4 Packing group

- n/a

14.5 Environmental hazards

- Presents little or no hazard to the environment

14.6 Special precautions for user

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

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

- Not applicable

Other information

Road/Rail (ADR/RID)

Proper Shipping Name:	REFRIGERANT GAS, N.O.S. (OCTAFLUOROPROPANE, 1,1,1,2-TETRAFLUOROETHANE mixture)		
ADR UN No.:	UN1078	ADR Hazard Class:	2.2
ADR Packing Group:	n/a	ADR subrisk:	n/a
ADR Flashpoint:	n/a		

Sea (IMDG)

Proper Shipping Name:	REFRIGERANT GAS, N.O.S. (OCTAFLUOROPROPANE, 1,1,1,2-TETRAFLUOROETHANE mixture)		
IMDG UN No.:	UN1078	IMDG Hazard Class.:	2.2
IMDG Pack Group.:	n/a	IMDG EmS:	
IMDG subrisk:	n/a	IMDG Flashpoint:	n/a

REFRIGERANT R-413A

14 Transport information (....)

Air (ICAO/IATA)

Proper Shipping Name:	REFRIGERANT GAS, N.O.S. (OCTAFLUOROPROPANE, 1,1,1,2-TETRAFLUOROETHANE mixture)		
ICAO Un No.:	UN1078	ICAO Hazard Class.:	2.2
ICAO Packing Group.:	n/a	ICAO subrisk:	n/a
ICAO Flashpoint:	n/a		

DOT / CFR (US Department of Transportation)

DOT Proper Shipping Name:	REFRIGERANT GAS, N.O.S. (OCTAFLUOROPROPANE, 1,1,1,2-TETRAFLUOROETHANE mixture)		
Hazardous Material:	OCTAFLUOROPROPANE, 1,1,1,2-TETRAFLUOROETHANE, ISO-BUTANE		
Hazard Class:	2.2	Identification Number:	UN1078
Product RQ (lbs):	n/a	DOT subrisk:	n/a
DOT Flashpoint:	n/a		

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 product is not classified as hazardous according to Directive 1999/45/EEC
- Regulations 1272/2008/EEC. Classification, labeling and packing of dangerous substances and preparations
- This Safety Data Sheet is provided in compliance with The Dangerous Substances Directive (67/548/EEC)

15.2 Chemical Safety Assessment

None

16 Other information

Text of R and S phrase codes used in this safety data sheet:- 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 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 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

OTHER CONTACT INFORMATION MAJOR CHEMICAL OFFICES

For addresses of other Wilhelmsen Ships Service offices, please refer to www.wilhelmsen.com/shipsservice

Wilhelmsen Ships Service Level 1, 39 Park Street South Melbourne, Vic 3205 Australian Tel:+61 3 9630 0900
Emergency 24hrs: +61 3 9630 0998

Wilhelmsen Ships Service INC 210 Edgewater Street US-10305 Staten Island New York United States Telephone
daytime: (+1) 718 815 1310 Fax: (+1) 718 233 3268

16 Other information (....)

Wilhelmsen Ships Service INC 2200 W. Pacific Coast Highway US-90810 Long Beach California, United States
Tel (+1) 562 624 8888 Fax (+1) 562 624 1011

Wilhelmsen Ships Service INC 701 Ashland Ave. Ashland Center Two, Bay 12 US- 19032 Folcroft Pennsylvania
United States Tel (+1) 610 586 7801 Fax (+1) 215 701 0646

Wilhelmsen Ships Service INC. 9400 New Century Drive US-77507 Pasadena Texas United States Telephone
daytime: (+1) 281 867 2000 Fax: (+1) 281 867 2800

Wilhelmsen Ships Service Ltd. Unit 3A NewtonsCourt Crossways DA2 6QL Dartford, Kent United Kingdom Tel
(+44) 1322 282 412 Fax (+44) 1322 284 774

Wilhelmsen Ships Service Ltda Rua Bispo Lacerda nos.61/67 Del Catilho BR 21051120 Rio de Janeiro Brazil Tel
(+55) 21 25 82 8000 Fax (+55) 21 25 82 8001

Wilhelmsen Ships Service (S) Pte Ltd 186 Pandan Loop Singapore 128376 Tel (+65) 6395 4545

Wilhelmsen Ships Service Co., Ltd 12-31 Torihama-cho Kanazawa-ku Yokohama-shi JP-236 0002, Japan Tel
(+81) 45 775 0012 Fax (+81) 45 775 0070

Wilhelmsen Ships Service Hellas SA 100, D. Moutsopoulou & Serifou str GR-185 41 Piraeus Greece Tel (+ 30)
210 4239100 Fax (+ 30) 210 4212480

WMS AS U.A.E. Fl 24 Executive Heights, Tecom C Sheikh Zayed Road (East) Dubai United Arab Emirates Tel
(+971) 4 382 3888

