

SAFETY DATA SHEET

Refrigerant R-404A (Virgin & Reclaimed)

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**1.1. Product identifier**

Trade name: Refrigerant R-404A (Virgin & Reclaimed)
Other names / Synonyms: HFC-404A
Freon R404A
Genetron 404A

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

Relevant identified uses of the substance or mixture: Refrigerant
Restricted to professional users.

Use descriptors (UK REACH):

Sectors of use	Description
Refrigeration	For use as a refrigerant
Product category	Description
PC 16	Heat Transfer Fluids

Uses advised against: None

1.3. Details of the supplier of the safety data sheet

Company and address: **National Refrigerants Limited**
4 Watling Close
Sketchley Meadows Business Park

LE10 3EZ Hinckley
England
+44 (0)1455 630 790
www.nationalref.com

Contact person: sds@nationalref.com

Revision: 31/01/2025

SDS Version: 1.0

1.4. Emergency telephone number

Healthcare professionals: Dial 0344 892 0111 to reach The National Poisons Information Service (NPIS) (24 hour service)

General public:

England - Dial 111 to reach NHS 111 (24 hour service)

Scotland - Dial 112 to reach NHS 24 (24 hour service)

Wales - Dial 111 or 0845 4647 to reach NHS Direct (24 hour service)

See section 4 "First aid measures".

Emergency Telephone: Carechem24 +44 (0)1865 407333

SECTION 2: HAZARDS IDENTIFICATION

Classified according to Regulation (EC) No. 1272/2008 (CLP) as retained and amended in UK law.

2.1. Classification of the substance or mixture

Press. Gas (Liq.) ; H280, Contains gas under pressure; may explode if heated.

2.2. Label elements

Hazard pictogram(s):



Signal word:

Warning

Hazard statement(s):

Contains gas under pressure; may explode if heated.
(H280)

Precautionary statement(s):

General:

-

Prevention:

-

Response:

-

Storage:

Protect from sunlight. Store in a well-ventilated place.
(P410+P403)

Disposal:

-

Hazardous substances:

None known.

Additional labelling:

Not applicable.

2.3. Other hazards

Additional warnings:

In the event of leaks, high concentrations of gases can quickly form. They can be toxic, asphyxiating, or explosive. This mixture/product does not contain any substances known to fulfil the criteria for PBT and vPvB classification. This product does not contain any substances considered to be endocrine disruptors in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2023/707.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

Not applicable. This product is a mixture.

3.2. Mixtures

Product/substance	Identifiers	% w/w	Classification	Note
1,1,1-trifluoroethane	CAS No.: 420-46-2 EC No.: 206-996-5 UK-REACH: Index No.:	51-53%	Flam. Gas 1B, H221 Press. Gas (Liq.) , H280	
Pentafluoroethane (HFC-125)	CAS No.: 354-33-6 EC No.: 206-557-8 UK-REACH: Index No.:	42-46%	Press. Gas (Liq.) , H280	
1,1,1,2-tetrafluoroethane	CAS No.: 811-97-2	2-6%	EUH044	

(HFC-134a)	EC No.: 212-377-0 UK-REACH: UK-20-0812279581-1-0000 Index No.:		Press. Gas (Liq.) , H280	
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See full text of H-phrases in section 16. Occupational exposure limits are listed in section 8, if these are available.

Other information

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SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

General information:

In the case of accident: Contact a doctor or casualty department – take the label or this safety data sheet. Contact a doctor if in doubt about the injured person's condition or if the symptoms persist. Never give an unconscious person water or other drink.

Inhalation:

Upon breathing difficulties or irritation of the respiratory tract: Bring the person into fresh air and stay with him/her.

Skin contact:

Exposure is not likely due to the physical state of the product (gas).

Eye contact:

If in eyes: Flush eyes with water or saline water (20-30 °C) for at least 5 minutes. Remove contact lenses. Seek medical assistance and continue flushing during transport.

Ingestion:

Exposure is not likely due to the physical state of the product (gas).

Burns:

Rinse with water until pain stops then continue to rinse for 30 minutes.

4.2. Most important symptoms and effects, both acute and delayed

None known.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

Information to medics

Bring this safety data sheet or the label from this product.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable extinguishing media: Alcohol-resistant foam, carbon dioxide, powder, water mist.
Unsuitable extinguishing media: Waterjets should not be used, since they can spread the fire.

5.2. Special hazards arising from the substance or mixture

Contains gas under pressure; may explode if heated.
Given that it does not present a risk gas supplies shall be disrupted immediately. Removal of pressurized containers or attempting to cool with water shall be entrusted the fire brigade.

If the product is exposed to high temperatures, e.g. in the event of fire, dangerous decomposition compounds are produced. These are:

Halogenated compounds
Carbon oxides (CO / CO₂)

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective clothing to prevent contact. Upon direct exposure contact The National Poisons Information Service (dial 111, 24 h service) in order to obtain further advice.

Hazchem Code: 2TE

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Accidental releases always pose a serious risk of fire or explosion.

Storages not yet ignited must be cooled by water mist. Remove flammable materials if conditions allow it. Ensure sufficient ventilation.

Disconnect the gas supply provided it does not present a risk. Avoid breathing fumes. Make sure to have a self-contained breathing apparatus available and ready-to-use in the event of an emergency.

Ensure adequate ventilation, especially in confined areas.

6.2. Environmental precautions

In the event of leakage to the surroundings, contact local environmental authorities.

6.3. Methods and material for containment and cleaning up

Disconnect the gas supply. Allow liquefied gas to evaporate and dilute into safe concentration levels in the surrounding atmosphere. If necessary control the dilution of the gas with a mist of water. Ventilate rooms in order to remove the gas.

6.4. Reference to other sections

See section 13 "Disposal considerations" on handling of waste.

See section 8 "Exposure controls/personal protection" for protective measures.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Smoking, drinking and consumption of food is not allowed in the work area.

See section 8 "Exposure controls/personal protection" for information on personal protection.

7.2. Conditions for safe storage, including any incompatibilities

Vapours may propagate along the floor. Prevent the forming of flammable or explosive vapour concentrations by applying sufficient ventilation. Do not use this product in close proximity to sources of ignition.

Protect electrical equipment in accordance with current standards. To divert static electricity during transmission, containers must be grounded and connected by wire with the receiving containers. Do not use spark-forming tools.

Pressurized gas packs (spray cans, aerosol cans) must be stored behind a wire mesh, which allows gases to escape and holds back packs flying around.

Recommended storage material: Keep only in original packaging.

Storage conditions: < 50°C
Dry, cool and well ventilated
Protect from direct sunlight

Incompatible materials: Finely divided Aluminium, Potassium, Calcium. Powdered

metals: Aluminium, Magnesium, Zinc.

7.3. Specific end use(s)

This product should only be used for applications quoted in section 1.2.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Pentafluoroethane (HFC-125)

Long term exposure limit (8 hours) (ppm): 1000

1,1,1,2-tetrafluoroethane (HFC-134a)

Long term exposure limit (8 hours) (ppm): 1000

Long term exposure limit (8 hours) (mg/m³): 4240

The Control of Substances Hazardous to Health Regulations 2002. SI 2002/2677 The Stationery Office 2002.

EH40/2005 Workplace exposure limits (Fourth Edition 2020).

DNEL

1,1,1-trifluoroethane

Duration:	Route of exposure:	DNEL:
Long term - Systemic effects - General population	Inhalation	219.3 mg/m ³
Long term - Systemic effects - Workers	Inhalation	438.61 mg/m ³

1,1,1,2-tetrafluoroethane (HFC-134a)

Duration:	Route of exposure:	DNEL:
Long term - Systemic effects - General population	Inhalation	2476 mg/m ³
Long term - Systemic effects - Workers	Inhalation	13936 mg/m ³

Pentafluoroethane (HFC-125)

Duration:	Route of exposure:	DNEL:
Long term - Systemic effects - Workers	Inhalation	16444 mg/m ³
Long term - Systemic effects - Workers	Inhalation	16444 mg/m ³

PNEC

1,1,1-trifluoroethane

Route of exposure:	Duration of Exposure:	PNEC:
Freshwater		350 µg/L

1,1,1,2-tetrafluoroethane (HFC-134a)

Route of exposure:	Duration of Exposure:	PNEC:
Freshwater		100 µg/L
Freshwater sediment		750 µg/kg
Intermittent release (freshwater)		1 mg/L
Marine water		10 µg/L
Sewage treatment plant		73 mg/L

Pentafluoroethane (HFC-125)

Route of exposure:	Duration of Exposure:	PNEC:
Freshwater		100 µg/L
Freshwater sediment		600 µg/kg
Intermittent release (freshwater)		1 mg/L

8.2. Exposure controls

Compliance with the given occupational exposure limits values should be controlled on a regular basis.

<i>General recommendations:</i>	Smoking, drinking and consumption of food is not allowed in the work area.
<i>Exposure scenarios:</i>	There are no exposure scenarios implemented for this product.
<i>Exposure limits:</i>	Professional users are subjected to the legally set maximum concentrations for occupational exposure. See occupational hygiene limit values above.
<i>Appropriate technical measures:</i>	Adequate ventilation must be ensured for all gases. Where natural ventilation is not possible (cellar rooms), artificial ventilation must be installed. It is advantageous to store it in a lattice shed outdoors, as ventilation is no longer necessary in this case.
<i>Hygiene measures:</i>	In between use of the product and at the end of the working day all exposed areas of the body must be washed thoroughly. Pay special attention to hands, forearms and face.
<i>Measures to avoid environmental exposure:</i>	No special when used as intended.


Individual protection measures, such as personal protective equipment



Generally: Use only UKCA marked protective equipment.

Respiratory Equipment:


Work situation	Type	Class	Colour	Standards	
In cases of insufficient ventilation, where exposure to high concentrations of vapour is possible, suitable respiratory protective equipment with positive air supply should be used.	Respiratory protection is not needed in the event of adequate ventilation.				

Skin protection:



Recommended	Type/Category	Standards	
Dedicated work clothing should be worn. Wear a protective suit in the event of prolonged periods of work with the	-	-	

Recommended	Type/Category	Standards	
product.			
Safety shoes	II	EN ISO 20345 / EN ISO 20347	
In the likelihood of direct or incidental exposure, wear whole-body protection, due to the risk of frost bites or skin burns.	-	-	

Hand protection:

Material	Glove thickness (mm)	Breakthrough time (min.)	Standards	
Heat Resistant			EN374, EN511	

Eye protection:

Type	Standards	
Safety glasses with side shields.	EN166	
In the likelihood of direct or incidental exposure, use face protection.	EN166	

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

<i>Physical state:</i>	Gas Liquefied Gas
<i>Colour:</i>	Colourless
<i>Odour / Odour threshold:</i>	Slight, ether-like
<i>pH:</i>	No data available
<i>Density (g/cm³):</i>	1.044 (25 °C)
<i>Relative density:</i>	1.05 (25 °C)
<i>Kinematic viscosity:</i>	Not applicable
<i>Particle characteristics:</i>	Not applicable

Phase changes

<i>Melting point/Freezing point (°C):</i>	No data available
<i>Softening point/range (°C):</i>	Does not apply to gases.
<i>Boiling point (°C):</i>	-46.2
<i>Vapour pressure:</i>	12546 hPa (25 °C)

Relative vapour density: No data available

Decomposition temperature (°C): 728

Data on fire and explosion hazards

Flash point (°C): Not applicable

Flammability (°C): Non-flammable

Auto-ignition temperature (°C): No data available

Lower and upper explosion limit (% v/v): Not explosive

Lower and upper explosion limit (mg/m³): 0 - 0
Test method: ASTM E681

Solubility

Solubility in water: No data available

n-octanol/water coefficient (LogKow): Not applicable

Solubility in fat (g/L): No relevant or available data due to the nature of the product.

9.2. Other information

Evaporation rate (n-butylacetate = 100): >1 (CCL 4=1)

Oxidizing properties: Not oxidising

Other physical and chemical parameters: No data available.

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

No data available.

10.2. Chemical stability

The product is stable under the conditions, noted in section 7 "Handling and storage".

10.3. Possibility of hazardous reactions

None known.

10.4. Conditions to avoid

Ignition sources: Heat, flames and sparks.

Heating of cylinders, as this will cause pressure to rise with risk of bursting.

Extremes of temperature

Protect from sunlight and do not expose to temperatures exceeding 50 degrees C.

10.5. Incompatible materials

Strong oxidizing agents

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008 as retained and amended in UK law

Acute toxicity

Product/substance	Pentafluoroethane (HFC-125)
Species:	Rat
Route of exposure:	Inhalation
Test:	LC50 (4 hours)
Result:	800000 ppmV

Product/substance	1,1,1,2-tetrafluoroethane (HFC-134a)
Species:	Rat
Route of exposure:	Inhalation
Test:	LC50 (4 hours)
Result:	567000 ppmV

Skin corrosion/irritation

Product/substance	Refrigerant R-404A (Virgin & Reclaimed)
Other information:	Not classified based on available information.

Product/substance	1,1,1-trifluoroethane
Other information:	Not classified based on available information.

Product/substance	Pentafluoroethane (HFC-125)
Result:	There may be redness or whiteness of the skin in the are of exposure. Frost-bite may occur causing the affected area to become white and numb.

Product/substance	1,1,1,2-tetrafluoroethane (HFC-134a)
Other information:	No data available

Serious eye damage/irritation

Product/substance	Refrigerant R-404A (Virgin & Reclaimed)
Other information:	Not classified based on available information.

Product/substance	1,1,1-trifluoroethane
Other information:	Not classified based on available information.

Product/substance	Pentafluoroethane (HFC-125)
Result:	There may be irritation and pain

Product/substance	1,1,1,2-tetrafluoroethane (HFC-134a)
Other information:	No data available

Respiratory sensitisation

Product/substance	Refrigerant R-404A (Virgin & Reclaimed)
Other information:	Not classified based on available information.

Product/substance	1,1,1-trifluoroethane
Other information:	Not classified based on available information.

Product/substance	Pentafluoroethane (HFC-125)
Result:	Inhalation may produce the following symptoms: Shortness of breath, dizziness, weakness, nausea, headache, narcosis, irregular cardiac activity. Drowsiness or mental confusion may occur. There may be loss of consciousness.

Product/substance	1,1,1,2-tetrafluoroethane (HFC-134a)
Other information:	No data available

Skin sensitisation

Product/substance Refrigerant R-404A (Virgin & Reclaimed)
Other information: Not classified based on available information.

Product/substance 1,1,1-trifluoroethane
Other information: Not classified based on available information.

Product/substance 1,1,1,2-tetrafluoroethane (HFC-134a)
Other information: No data available

Germ cell mutagenicity

Product/substance Refrigerant R-404A (Virgin & Reclaimed)
Other information: Not classified based on available information.

Product/substance 1,1,1-trifluoroethane
Test method: OECD 471
Description: Negative
Other information: Not classified based on available information.

Product/substance 1,1,1-trifluoroethane
Test method: OECD 473
Description: Negative
Other information: Not classified based on available information.

Product/substance 1,1,1-trifluoroethane
Test method: OECD 476
Description: Negative
Other information: Not classified based on available information.

Product/substance 1,1,1-trifluoroethane
Test method: OECD 474
Species: Mouse
Description: Negative
Other information: Not classified based on available information.

Product/substance 1,1,1,2-tetrafluoroethane (HFC-134a)
Test method: OECD 471
Conclusion: No adverse effect observed

Carcinogenicity

Product/substance Refrigerant R-404A (Virgin & Reclaimed)
Other information: Not classified based on available information.

Product/substance 1,1,1-trifluoroethane
Species: Rat
Route of exposure: Ingestion
Duration: 72 weeks
Result: Negative
Other information: Not classified based on available information.

Product/substance 1,1,1,2-tetrafluoroethane (HFC-134a)
Other information: Not classified based on available information.

Reproductive toxicity

Product/substance Refrigerant R-404A (Virgin & Reclaimed)
Other information: Not classified based on available information.

Product/substance 1,1,1-trifluoroethane

Species: Rat
Test: Three-generation reproduction toxicity study
Result: Negative
Other information: Not classified based on available information.

Product/substance 1,1,1-trifluoroethane
Test method: OECD 414
Species: Rat
Test: Embryo-foetal development
Result: Negative
Other information: Not classified based on available information.

Product/substance 1,1,1,2-tetrafluoroethane (HFC-134a)
Species: Rabbit
Test: General Toxicity - Maternal: NOEL:
Result: 2,500 ppm

Product/substance 1,1,1,2-tetrafluoroethane (HFC-134a)
Species: Rabbit
Test: Embryo-foetal Toxicity: NOEL:
Result: 40,000 ppm

STOT-single exposure

Product/substance Refrigerant R-404A (Virgin & Reclaimed)
Other information: Not classified based on available information.

Product/substance 1,1,1-trifluoroethane
Other information: Not classified based on available information.

Product/substance 1,1,1,2-tetrafluoroethane (HFC-134a)
Other information: No data available

STOT-repeated exposure

Product/substance Refrigerant R-404A (Virgin & Reclaimed)
Other information: Not classified based on available information.

Product/substance 1,1,1-trifluoroethane
Test method: OECD 413
Species: Rat
Route of exposure: Inhalation
Duration: 13 Weeks
Test: NOAEL
Result: >40000 ppm
Other information: Not classified based on available information.

Product/substance 1,1,1,2-tetrafluoroethane (HFC-134a)
Other information: No data available

Aspiration hazard

Product/substance Refrigerant R-404A (Virgin & Reclaimed)
Other information: Not classified based on available information.

Product/substance 1,1,1-trifluoroethane
Other information: Not classified based on available information.

Product/substance 1,1,1,2-tetrafluoroethane (HFC-134a)

Other information: No data available

11.2. Information on other hazards

Long term effects

None known.

Endocrine disrupting properties

Product/substance Refrigerant R-404A (Virgin & Reclaimed)
 Other information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57f.

Product/substance 1,1,1-trifluoroethane
 Other information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57f.

Product/substance 1,1,1,2-tetrafluoroethane (HFC-134a)
 Other information: No data available

Other information

None known.

1,1,1,2-tetrafluoroethane (HFC-134a): Cardiac sensitisation threshold (dog): 80000 ppm.

Difluoromethane. (HFC-32): Cardiac sensitisation threshold (dog): 350000 ppm.

Pentafluoroethane - (HFC-125): Cardiac sensitisation threshold (dog): 75000 ppm.

Inhalation: May cause cardiac arrhythmia.

Rapid evaporation of the liquid may cause frostbite.

Avoid skin contact with leaking liquid (danger of frostbite).

Vapours are heavier than air and can cause suffocation by reducing oxygen available for breathing

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Product/substance 1,1,1-trifluoroethane
 Test method: OECD 203
 Species: Fish, *Oncorhynchus mykiss*
 Duration: 96 hours
 Test: LC50
 Result: >100 mg/L

Product/substance 1,1,1-trifluoroethane
 Test method: OECD 202
 Species: *Daphnia*, *Daphnia magna*
 Duration: 48 hours
 Test: EC50
 Result: >100 mg/L

Product/substance 1,1,1-trifluoroethane
 Test method: OECD 202
 Species: Aquatic invertebrates.
 Duration: 48 hours
 Test: EC50
 Result: >100 mg/L

Product/substance 1,1,1-trifluoroethane

Product/substance 1,1,1-trifluoroethane
 Species: *Pseudomonas putida*

Duration: 6 Hours
Test: ECO
Result: >730 mg/L

Product/substance 1,1,1-trifluoroethane
Test method: OECD 201
Species: Algae, Pseudokirchneriella subcapitata
Duration: 96 hours
Test: ECO
Result: >44 mg/L

Product/substance Pentafluoroethane (HFC-125)
Other information: No data available

Product/substance 1,1,1,2-tetrafluoroethane (HFC-134a)
Species: Daphnia, Daphnia magna
Duration: 48 hours
Test: EC50
Result: 980 mg/L

Product/substance 1,1,1,2-tetrafluoroethane (HFC-134a)
Species: Fish, Oncorhynchus mykiss
Duration: 96 hours
Test: LC50
Result: 450 mg/L

Product/substance 1,1,1,2-tetrafluoroethane (HFC-134a)
Species: Algae, Selenastrum capricornutum
Duration: 72 hours
Test: ErC50
Result: 118 mg/L

12.2. Persistence and degradability

Product/substance 1,1,1-trifluoroethane
Duration: 28 days
Result: 3 %
Conclusion: -
Other information: Not readily biodegradable

12.3. Bioaccumulative potential

Product/substance 1,1,1-trifluoroethane
LogKow: <= 4
Conclusion: -
Other information: No bioaccumulation is to be expected

Product/substance Pentafluoroethane (HFC-125)
Conclusion: -
Other information: No data available

Product/substance 1,1,1,2-tetrafluoroethane (HFC-134a)
Conclusion: -
Other information: No data available

12.4. Mobility in soil

No data available.

12.5. Results of PBT and vPvB assessment

This mixture/product does not contain any substances known to fulfil the criteria for PBT and

vPvB classification.

12.6. Endocrine disrupting properties

Product/substance: 1,1,1-trifluoroethane
 Other information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57f.

Product/substance: 1,1,1,2-tetrafluoroethane (HFC-134a)
 Other information: No data available

12.7. Other adverse effects

-
 Contains fluorinated greenhouse gases covered by the Kyoto Protocol.
 3922 (CO2=1)

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

Product is covered by the regulations on hazardous waste. (*)
 Regulation (EU) No 1357/2014 of 18 December 2014 on waste as retained and amended in UK law.

EWC code


14 06 01* Chlorofluorocarbons, HCFC, HFC



Specific labelling

Contaminated packing

EWC code: 16 05 04* Gases in pressure containers (including halons) containing dangerous substances

SECTION 14: TRANSPORT INFORMATION

	14.1 UN / ID	14.2 UN proper shipping name	14.3 Hazard class(es)	14.4 PG*	14.5 Env**	Other informat ion:
ADR	UN3337	REFRIGERANT GAS R 404A	Transport hazard class: 2 Label: 2.2 Classification code: 2A 	-	No	Limited quantities: 120 ml Tunnel restriction code: (C/E) See below for additional information.
IMDG	UN3337	REFRIGERANT GAS R 404A	Transport hazard class: 2 Label: 2.2 Classification code: 2A	-	No	Limited quantities: 120 ml

	14.1 UN / ID	14.2 UN proper shipping name	14.3 Hazard class(es)	14.4 PG*	14.5 Env**	Other information:
						EmS: F-C S-V See below for additional information.
IATA	UN3337	REFRIGERANT GAS R 404A	Transport hazard class: 2 Label: 2.2 Classification code: 2A 	-	No	See below for additional information.

* Packing group

** Environmental hazards

Additional information

This product is within scope of the regulations of transport of dangerous goods.
 ADR / See Table A, section 3.2.1 for any information on special provisions, requirements, or warnings in connection with transport. See section 5.4.3, for instructions in writing regarding mitigation of damages in relation to incidents or accidents during transport.
 IMDG / See section 3.2.1, for any information on special provisions, requirements, or warnings in connection with transport.
 IATA / See Table 4.2 for any information on special provisions, requirements, or warnings in connection with transport.
 Hazchem Code: 2TE

14.6. Special precautions for user

Not applicable.

14.7. Maritime transport in bulk according to IMO instruments

No data available.

SECTION 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

<i>Restrictions for application:</i>	Restricted to professional users.
<i>Demands for specific education:</i>	No specific requirements.
<i>Control of Major Accident Hazards (COMAH) - Categories / dangerous substances:</i>	Not applicable.
<i>UK-REACH, Annex XVII:</i>	1,1,1-trifluoroethane is subject to UK-REACH restrictions (entry 40).
<i>Additional information:</i>	Not applicable.

Sources:

Regulation (EU) No 1357/2014 of 18 December 2014 on waste as retained and amended in UK law.
The Fluorinated Greenhouse Gases (Amendment) Regulations 2023
Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures (CLP) as retained and amended in UK law.
Regulation (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) as retained and amended in UK law.

15.2. Chemical safety assessment

No

SECTION 16: OTHER INFORMATION**Full text of H-phrases as mentioned in section 3**

EUH044, Risk of explosion if heated under confinement.
H221, Flammable gas
H280, Contains gas under pressure; may explode if heated.

The full text of identified uses as mentioned in section 1

Refrigeration = For use as a refrigerant
PC 16 = Heat Transfer Fluids

Abbreviations and acronyms

ADN = European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
CAS = Chemical Abstracts Service
CE = Conformité Européenne (European conformity)
CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
CSA = Chemical Safety Assessment
CSR = Chemical Safety Report
DMEL = Derived Minimal Effect Level
DNEL = Derived No Effect Level
EINECS = European Inventory of Existing Commercial chemical Substances
ES = Exposure Scenario
EUH statement = CLP-specific Hazard statement
EuPCS = European Product Categorisation System
EWC = European Waste Catalogue
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
GWP = Global warming potential
IARC = International Agency for Research on Cancer (IARC)
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
OECD = Organisation for Economic Co-operation and Development
PBT = Persistent, Bioaccumulative and Toxic

PNEC = Predicted No Effect Concentration
RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail
RRN = REACH Registration Number
SCL = A specific concentration limit
SVHC = Substances of Very High Concern
STOT-RE = Specific Target Organ Toxicity - Repeated Exposure
STOT-SE = Specific Target Organ Toxicity - Single Exposure
TWA = Time weighted average
UN = United Nations
UVBC = Unknown or variable composition, complex reaction products or of biological materials
VOC = Volatile Organic Compound
vPvB = Very Persistent and Very Bioaccumulative

Additional information

The classification of the mixture in regard to physical hazards has been based on experimental data.

The safety data sheet is validated by

National Refrigerants Ltd

Other

A change (in proportion to the last essential change (first cipher in SDS version, see section 1)) is marked with a triangle.

The information in this safety data sheet applies only to this specific product (mentioned in section 1) and is not necessarily correct for use with other chemicals/products.

It is recommended to hand over this safety data sheet to the actual user of the product.

Information in this safety data sheet cannot be used as a product specification.

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