

Section 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name: REFRIGERANT R407A

REACH registered number(s): MIXTURE

Product code: R407A

Synonyms: * GENETRON 407A
CLEA 407C

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

Use of substance / mixture: * PC16: Heat transfer fluids. Refrigerant Industrial and Professional use. Advised Against:
Consumer use.

1.3. Details of the supplier of the safety data sheet

Company name: National Refrigerants Ltd
4 Watling Close
Sketchley Meadows Business Park
Hinckley
Leicestershire
LE10 3EZ
United Kingdom

Tel: 01455 630790

Fax: 01455 630791

Email: sds@nationalref.com

1.4. Emergency telephone number

Emergency tel: Carechem24 +44 (0)1865 407333

Section 2: Hazards identification

2.1. Classification of the substance or mixture

Classification under CLP: Press. Gas: H280

Most important adverse effects: Contains gas under pressure; may explode if heated.

2.2. Label elements

Label elements:

Hazard statements: H280: Contains gas under pressure; may explode if heated.

Hazard pictograms: GHS04: Gas cylinder



SAFETY DATA SHEET

REFRIGERANT R407A

Page: 2

Signal words: Warning

Precautionary statements: P260: Do not breathe gas/vapours.

P280: Wear protective gloves/eye protection.

P284: [In case of inadequate ventilation] wear respiratory protection.

P308+313: IF exposed or concerned: Get medical attention.

P410+403: Protect from sunlight. Store in a well-ventilated place.

2.3. Other hazards

PBT: This product is not identified as a PBT/vPvB substance.

Section 3: Composition/information on ingredients

3.2. Mixtures

Hazardous ingredients:

REFRIGERANT R125 - REACH registered number(s): 01-2119485636-25

EINECS	CAS	PBT / WEL	CLP Classification	Percent
206-557-8	354-33-6	Substance with a Community workplace exposure limit.	Press. Gas: H280	30-50%

REFRIGERANT R134A - REACH registered number(s): 01-2119459374-33

212-377-0	811-97-2	Substance with a Community workplace exposure limit.	Press. Gas: H280	30-50%
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REFRIGERANT R32 - REACH registered number(s): 01-2119471312-47

200-839-4	75-10-5	Substance with a Community workplace exposure limit.	Flam. Gas 1: H220; Press. Gas: H280; -: EUH044	10-30%
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Section 4: First aid measures

4.1. Description of first aid measures

Skin contact: * Rapid evaporation of liquid may cause frostbite. Remove all contaminated clothes and footwear immediately unless stuck to skin. Thaw frosted parts with lukewarm water. Do not rub affected area. Do not use hot water. If frostbite has occurred call a physician.

Eye contact: * Remove contact lenses if present and easy to do so. Bathe the eye with running water for 15 minutes. Transfer to hospital for specialist examination.

Ingestion: Ingestion is unlikely due to its physical properties and is not expected to be dangerous. Since this product is a gas, refer to the inhalation section.

Inhalation: Remove casualty from exposure ensuring one's own safety whilst doing so. If unconscious, check for breathing and apply artificial respiration if necessary. Consult a doctor.

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

Skin contact: There may be mild irritation at the site of contact. Frost-bite may occur causing the affected area to become white and numb.

Eye contact: There may be irritation and redness.

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SAFETY DATA SHEET

REFRIGERANT R407A

Page: 3

Ingestion: * Ingestion is unlikely due to the physical properties of the product. As product is a gas refer to inhalation section.

Inhalation: asphyxia Gas reduces oxygen available for breathing. The victim will not realize that he/she is suffocating.

Delayed / immediate effects: May cause cardiac arrhythmia.

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

Immediate / special treatment: Do Not give adrenaline or similar drugs.

Section 5: Fire-fighting measures

5.1. Extinguishing media

Extinguishing media: The product is not flammable. Suitable extinguishing media for the surrounding fire should be used. Alcohol resistant foam. Water spray. Carbon dioxide. Dry chemical powder. Use water spray to cool containers.

5.2. Special hazards arising from the substance or mixture

Exposure hazards: Non flammable gas. Pressure build up. Fire or intense heat may cause violent rupture of packages. In combustion emits toxic fumes.

5.3. Advice for fire-fighters

Advice for fire-fighters: Wear self-contained breathing apparatus. Wear protective clothing to prevent contact with skin and eyes.

Section 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions: * Refer to section 8 of SDS for personal protection details. If outside keep bystanders upwind and away from danger point.

6.2. Environmental precautions

Environmental precautions: Stop release if safe to do so. Prevent from entering sewers, basements and work pits, or any place where the accumulation can be dangerous.

6.3. Methods and material for containment and cleaning up

Clean-up procedures: Material evaporates. Ventilate the area, especially low or enclosed places where heavy vapours might collect.

6.4. Reference to other sections

Reference to other sections: Refer to section 8 of SDS.

Section 7: Handling and storage

7.1. Precautions for safe handling

Handling requirements: * Ensure there is sufficient ventilation of the area. Do not handle in a confined space.

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SAFETY DATA SHEET

REFRIGERANT R407A

Page: 4

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions: Store in a cool, well ventilated area. Keep container tightly closed. Store at a temperature not exceeding 45°C.

Suitable packaging: Must only be kept in original packaging.

7.3. Specific end use(s)

Specific end use(s): PC16: Heat transfer fluids.

Section 8: Exposure controls/personal protection

8.1. Control parameters

Hazardous ingredients:

REFRIGERANT R125

Workplace exposure limits:

Respirable dust

State	8 hour TWA	15 min. STEL	8 hour TWA	15 min. STEL
EU	1000 ppm	-	-	-

REFRIGERANT R134A

EU	4240 mg/m3	-	-	-
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REFRIGERANT R32

UK	1000 ppm	-	-	-
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DNEL/PNEC Values

Hazardous ingredients:

REFRIGERANT R125

Type	Exposure	Value	Population	Effect
DNEL	Inhalation	16444 mg/m3	Workers	Systemic
DNEL	Inhalation	1753 mg/m3	Consumers	Systemic
PNEC	Fresh water	0.1 mg/l	-	-
PNEC	Fresh water sediments	0.6 mg/kg	-	-

REFRIGERANT R134A

Type	Exposure	Value	Population	Effect
DNEL	Inhalation	2476 mg/m3	Workers	Systemic
DNEL	Inhalation	2476 mg/m3	Consumers	Systemic
PNEC	Fresh water	0.01 mg/l	-	-
PNEC	Marine water	0.75 mg/l	-	-
PNEC	Microorganisms in sewage treatment	73 mg/l	-	-

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SAFETY DATA SHEET

REFRIGERANT R407A

Page: 5

DNEL	Inhalation	13936 mg/m ³	Workers	Systemic
PNEC	Fresh water sediments	0.75 mg/kg	-	-

REFRIGERANT R32

Type	Exposure	Value	Population	Effect
DNEL	Inhalation (developmental tox)	13936 mg/m ³	Workers	Systemic
DNEL	Inhalation (developmental tox)	2476 mg/m ³	Consumers	Systemic
PNEC	Fresh water	0.142 mg/l	-	-
PNEC	Fresh water sediments	0.534 mg/kg	-	-

8.2. Exposure controls

Engineering measures: * Ensure there is sufficient ventilation of the area. Use only in closed systems.

Respiratory protection: * Respiratory protection not required. Self-contained breathing apparatus must be available in case of emergency.

Hand protection: Protective gloves. The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye protection: Ensure eye bath is to hand. Safety glasses with side-shields. Safety goggles.

Skin protection: Protective clothing.

Section 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

State: Liquified gas

Colour: Colourless

Odour: Barely perceptible odour

Evaporation rate: Not applicable.

Oxidising: Not applicable.

Solubility in water: No data available.

Boiling point/range°C: -46.2 to -41.5

Melting point/range°C: No data available.

Flammability limits %: lower: Not applicable.

upper: Not applicable.

Flash point°C: Not applicable.

Part.coeff. n-octanol/water: No data available.

Autoflammability°C: Not applicable.

Vapour pressure: 12.2 Bar at 25oC

Relative density: 3.9 (Air = 1)

9.2. Other information

Other information: R407A Liquid Density: 1170 kg/m³ at 20oC. R407A Vapour Density: 2.54 at bubble point temperature.

Section 10: Stability and reactivity

10.1. Reactivity

Reactivity: Stable under recommended transport or storage conditions.

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SAFETY DATA SHEET

REFRIGERANT R407A

Page: 6

10.2. Chemical stability

Chemical stability: Stable under normal conditions. Stable at room temperature.

10.3. Possibility of hazardous reactions

Hazardous reactions: Hazardous reactions will not occur under normal transport or storage conditions.
Decomposition may occur on exposure to conditions or materials listed below.

10.4. Conditions to avoid

Conditions to avoid: Heat. Hot surfaces. Sources of ignition. Flames.

10.5. Incompatible materials

Materials to avoid: Strong oxidising agents. Alkali metals. Alkali earth metals. Finely powdered metals.

10.6. Hazardous decomposition products

Haz. decomp. products: In combustion emits toxic fumes.

Section 11: Toxicological information

11.1. Information on toxicological effects

Hazardous ingredients:

REFRIGERANT R125

GASES	RAT	4H LC50	800000	ppmV
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REFRIGERANT R134A

GASES	RAT	4H LC50	567000	ppmV
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REFRIGERANT R32

GASES	RAT	LD50	520000	ppmV
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Toxicity values: No data available.

Symptoms / routes of exposure

Skin contact: There may be mild irritation at the site of contact. Frost-bite may occur causing the affected area to become white and numb.

Eye contact: There may be irritation and redness.

Ingestion: * Ingestion is unlikely due to the physical properties of the product. As product is a gas refer to inhalation section.

Inhalation: asphyxia Gas reduces oxygen available for breathing. The victim will not realize that he/she is suffocating.

Delayed / immediate effects: May cause cardiac arrhythmia.

Other information: Not applicable.

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SAFETY DATA SHEET

REFRIGERANT R407A

Page: 7

Section 12: Ecological information

12.1. Toxicity

Hazardous ingredients:

REFRIGERANT R134A

Daphnia magna	48H EC50	980	mg/l
GREEN ALGA (Selenastrum capricornutum)	72H ErC50	118	mg/l
RAINBOW TROUT (Oncorhynchus mykiss)	96H LC50	450	mg/l

REFRIGERANT R32

ALGAE	96H ErC50	142	mg/l
Daphnia magna	48H EC50	652	mg/l
FISH	96H LC50	1.057	mg/l

12.2. Persistence and degradability

Persistence and degradability: No data available.

12.3. Bioaccumulative potential

Bioaccumulative potential: No data available.

12.4. Mobility in soil

Mobility: No data available.

12.5. Results of PBT and vPvB assessment

PBT identification: This product is not identified as a PBT/vPvB substance.

12.6. Other adverse effects

Other adverse effects: Ozone Depletion Potential (ODP): 0 (R11 = 1) R407A Global Warming Potential (GWP): 1972 (CO2=1) Contains fluoronated greenhouse gases covered by the Kyoto Protocol.

Section 13: Disposal considerations

13.1. Waste treatment methods

Disposal operations: Product evaporates. Recover to a recovery cylinder and return to a refrigerant recovery facility.

Recovery operations: Consult manufacturer or supplier for information regarding recovery and recycling of the product. If recovery is not possible, incinerate at a licensed installation.

Waste code number: 14 06 01

Disposal of packaging: Return to supplier.

NB: The user's attention is drawn to the possible existence of regional or national regulations regarding disposal.

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SAFETY DATA SHEET

REFRIGERANT R407A

Page: 8

Section 14: Transport information

14.1. UN number

UN number: UN3338

14.2. UN proper shipping name

Shipping name: REFRIGERANT GAS R 407A

14.3. Transport hazard class(es)

Transport class: 2

14.4. Packing group

14.5. Environmental hazards

Environmentally hazardous: No

Marine pollutant: No

14.6. Special precautions for user

Special precautions: No special precautions.

Tunnel code: C/E

Transport category: 3

Section 15: Regulatory information

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

Specific regulations: * US. Toxic Substances Control Act: On TSCA Inventory. Regulation on Fluorinated Greenhouse Gases 842/2006/EC: Listed Regulation (EC) No. 1272/2008 of the European Parliament and of the Council of the 16 th December 2008 on Clasification, labeling and Packaging of Substances and Mixtures.

15.2. Chemical Safety Assessment

Chemical safety assessment: A chemical safety assessment has not been carried out for the substance or the mixture by the supplier.

Section 16: Other information

Other information

Other information: This safety data sheet is prepared in accordance with Commission Regulation (EU) No 2015/830.

* indicates text in the SDS which has changed since the last revision.

Phrases used in s.2 and s.3: EUH044: Risk of explosion if heated under confinement.

H220: Extremely flammable gas.

H280: Contains gas under pressure; may explode if heated.

Legal disclaimer: * The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. This company shall not be held liable for any damage resulting from handling or from contact with the above product.