

Recovered Refrigerant – Non-Flammable

SECTION 1 - IDENTIFICATION

Product identifier

Product name	Recovered Refrigerant Non-Flammable
Synonyms	Not Available
Proper shipping name	REFRIGERANT GAS, N.O.S. (Contains: 1,1,1,2-tetrafluoroethane, Difluoromethane, Pentafluoroethane, chlorodifluoromethane)
Other means of identification	Full identification or hazard information is not available

Recommended use of the chemical and restrictions on use

Relevant identified uses	Recovered refrigerant gas for reclamation or disposal.
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Details of the supplier of the safety data sheet

Registered company	Refrigerant Reclaim Australia
Address	Suite 1, 4 Lonsdale St Braddon ACT 2612
Telephone	[+61] 2 6230 5244
Website	www.refrigerantreclaim.com.au
Email	info@refrigerantreclaim.com.au

Emergency telephone number

Association	Refrigerant Reclaim Australia
Emergency	[+61] 2 6230 5244
Other emergency telephone	0417 143 687

SECTION 2 - HAZARD IDENTIFICATION

GHS classification of the hazardous chemical

Classification	Gas under Pressure (Liquefied gas) Hazardous Chemical according to the Australian GHS Criteria Hazardous to the Ozone Layer Dangerous Good according to the ADG Code
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Label elements

Pictogram	
Signal Word	WARNING

Hazard statement(s)

H280	Contains gas under pressure; may explode if heated
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Precautionary statement - Prevention

	Not applicable
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Precautionary statement - Response

	Not applicable
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Precautionary statement - Storage

P403	Store in a well-ventilated place.
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P410	Protect from sunlight.
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Precautionary statement - Disposal

P501	Dispose of contents in accordance with the Ozone Protection and Synthetic Greenhouse Gas Management Act 1989
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SECTION 3 - COMPOSITION AND INFORMATION ON INGREDIENTS**Substances**

See section below for composition of mixtures

Mixtures

CAS Number	%[weight]	Name
811-97-2	1-100%	1,1,1,2 Tetrafluoroethane (R134a)
75-10-5	1-50%	Difluoromethane (R32)
354-33-6	1-50%	Pentafluoroethane (R125)
75-45-6	1-100%	Chlorodifluoromethane (R22)

SECTION 4 - FIRST AID MEASURES**Description of necessary first aid measures****Eye contact**

If product comes in contact with eyes remove the patient from gas source or contaminated area to fresh air.

Open the eyelid(s) wide to allow the material to evaporate.

Gently rinse the affected eye(s) with clean, cool water for at least 15 minutes. Have the patient lie or sit down and tilt the head back. Hold the eyelid(s) open and pour water slowly over the eyeball(s) at the inner corners, letting the water run out of the outer corners.

Transport to hospital or doctor.

Even when no pain persists and vision is good, a doctor should examine the eye as delayed damage may occur. If the patient cannot tolerate light, protect the eyes with a clean, loosely tied bandage.

Ensure verbal communication and physical contact with the patient.

DO NOT allow the patient to rub the eyes

DO NOT allow the patient to tightly shut the eyes

DO NOT introduce oil or ointment into the eye(s) without medical advice

DO NOT use hot or tepid water.

Skin contact	<p>If skin contact occurs: Cold burns</p> <p>Immediately remove all contaminated clothing, including footwear. Flush skin and hair with running water (and soap if available).</p> <p>Seek medical attention in event of irritation or frost bite</p>
Inhalation	<p>Following exposure to gas, remove the patient from the gas source or contaminated area to fresh air.</p> <p>NOTE: Personal Protective Equipment (PPE), including positive pressure self-contained breathing apparatus may be required to assure the safety of the rescuer.</p> <p>Prostheses such as false teeth, which may block the airway, should be removed, where possible, prior to initiating first aid procedures.</p> <p>If the patient is not breathing spontaneously, administer rescue breathing. If the patient does not have a pulse, administer CPR.</p> <p>If medical oxygen and appropriately trained personnel are available, administer 100% oxygen. Summon an emergency ambulance. If an ambulance is not available, contact a physician, hospital, or Poison Control Centre for further instruction. Keep the patient warm, comfortable and at rest while awaiting medical care.</p> <p>MONITOR THE BREATHING AND PULSE, CONTINUOUSLY.</p>
Ingestion	Not considered a normal route of entry.

Medical attention and special treatment

Intoxication due to refrigerants	<p>Maintain an open airway and assist ventilation if necessary</p> <p>Treat coma and arrhythmias if they occur. Avoid (adrenaline) epinephrine or other sympathomimetic amines that may precipitate ventricular arrhythmias.</p>
Frostbite caused by liquid gas	<p>If part has not thawed, place in warm water bath (41-46 C) for 15-20 minutes, until the skin turns pink, or red. Analgesia may be necessary while thawing.</p>
Gas exposures	<p>Watch for signs of respiratory insufficiency and assist ventilation as necessary. Administer oxygen by non-rebreather mask at 10 to 15 l/min.</p> <p>Monitor and treat, where necessary, for pulmonary oedema. Monitor and treat, where necessary, for shock.</p> <p>Anticipate seizures.</p>

SECTION 5 - FIREFIGHTING MEASURES

Suitable Extinguishing Media	Use extinguishing agent suitable for type of surrounding fire. Water fog or water mist.
Unsuitable Extinguishing Media	Not known
Specific Hazards arising from the chemical	<p>Non-Flammable.</p> <p>Cylinders may explode when heated or may become a projectile in a fire.</p> <p>Some mixtures of HFC and/or HCFC and air or oxygen may be combustible if pressurised and exposed to extreme heat or flame.</p>
Hazards from combustion products	<p>At high temperatures – thermal decomposition causing toxic and corrosive products.</p> <p>Hydrogen fluoride</p> <p>Fluorine compounds</p> <p>Phosgene</p> <p>Carbon oxides</p> <p>Carbonyl halides</p>
Specific precautions for firefighters	<p>Water mist should be used to reduce vapour concentrations in air.</p> <p>Cool unopened cylinders/bulk tanks by flooding quantities of water onto upper surface until well after fire is out.</p> <p>Stop flow of gas if possible</p> <p>Fight fire with large amounts of water from a safe distance, with adequate cover.</p>

Special firefighting equipment (PPE)	Wear self-contained breathing apparatus and protective suit.
Hazchem Code	2TE

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Minor Spills	Avoid breathing vapour and any contact with liquid or gas.
Major Spills	<p>Evacuate all unprotected personnel and move upwind.</p> <p>Protective equipment including respirator should be used.</p> <p>Shut cylinder valve to stop leak if possible and safe to do so.</p> <p>DO NOT enter confined spaces where gas may have accumulated.</p> <p>DO NOT exert excessive pressure on valve.</p> <p>DO NOT attempt to operate damaged valve.</p>

Environmental precautions

	Do not release to atmosphere
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Methods and materials for contaminated and cleaning up

	<p>Check cylinders for leaks using leak detector or soapy water on joints and outlets.</p> <p>Ventilate the area.</p> <p>Suppress gases/vapour with water mist.</p> <p>Damaged cylinders should be returned to the supplier.</p>
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SECTION 7 - HANDLING AND STORAGE

Precautions for safe handling	<p>Use only in well-ventilated areas.</p> <p>Wear protective equipment.</p> <p>Avoid inhalation of vapour.</p> <p>Avoid contact with skin, eyes and clothing.</p> <p>Use authorised cylinders only</p> <p>Use equipment rated for cylinder pressure.</p> <p>Protect cylinders from physical damage,</p> <p>Close valve and replace valve protection caps and valve outlet threads when not in use.</p> <p>Do not puncture or drop cylinders, expose them to excessive heat or ignition sources.</p> <p>Do not drag, slide, or roll cylinders.</p> <p>Do not change or force fit connections.</p> <p>Prevent the intrusion of water into the gas tank.</p> <p>Maintain high standards of personal hygiene i.e. wash hands prior to eating, drinking, smoking, or using toilet facilities.</p>
Conditions of safe storage	<p>Keep containers tightly closed in a dry, cool and well-ventilated area.</p> <p>Store cylinders upright on level ground</p> <p>Protect from sunlight and do not expose to temperatures exceeding 45 degrees C.</p> <p>Keep away from heat and sources of ignition.</p> <p>Ensure adequate ventilation, especially in confined areas.</p> <p>Full cylinders shall be stored separately from empties</p> <p>Properly label cylinders.</p> <p>Do not store near combustible materials.</p> <p>Do not pressurise, cut, weld, braze, solder, drill, or grind cylinder.</p>
Incompatibilities	Alkali metals, alkaline earth metals and alloys containing more than 2% magnesium.

SECTION 8 - EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure control limits

Occupational exposure limit values	1,1,1,2 Tetrafluoroethene (134a)	Difluoromethane (R32)	Pentafluoroethane (R125)	Chlorodifluoromethane (R22)
	HCIS: Exposure Standard TWA ppm: 1000 TWA mg/m ³ : 4240	According to the HCIS, no exposure standards have been established for individual substances or mixtures.	According to the HCIS, no exposure standards have been established for individual substances or mixtures.	HCIS: Exposure Standard TWA ppm: 1000 TWA mg/m ³ : 3540

Biological monitoring	No biological limits allocated
Control banding	Not available
Engineering controls	Minimise workplace exposure concentrations. Use with local exhaust ventilation, drawing vapours away from workers breathing zone.

Individual protection measures

Eye and face protection	Safety glasses with side shields, chemical goggles, or full-face shield. Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task.
Skin protection	Leather gloves Protective clothing (cotton) – buttoned at neck and covering arms, wrist, and legs Fully enclosed leather footwear. Easily removable steel cap footwear should be selected based on the tasks being performed and the risk involved.
Respiratory protection	If engineering controls are not effective and concentration limits are above recommended limits or are unknown, an approved respirator with a replaceable filter should be used.
Thermal hazards	Skin protection measures should be selected based on the task being performed. If there is a risk of contact with liquid refrigerant gas, all protective equipment worn should be suitable for use with extremely low temperature materials to prevent frost bite.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

	1,1,1,2 Tetrafluoroethene (134a)	Difluoromethane (R32)	Pentafluoroethane (R125)	Chlorodifluoromethane (R22)
Physical state	Liquified Gas	Liquified Gas	Liquified Gas	Liquified Gas
Colour	Clear Colourless	Clear Colourless	Clear Colourless	Clear Colourless
Odour	Ether-like (slight)	Ether-like (slight)	Ether-like (slight)	Ether-like (slight)
Odour threshold	No data available	No data available	No data available	No data available
Melting point / freezing point (°C)	-101 °C (melting point)	-136 °C (freezing point)	-103°C (melting point)	No data available
Initial boiling point and boiling range (°C)	-26.1 °C +/- 0.3	-51.6 °C +/- 0.3	-48.1 °C +/- 0.3	-40.8 °C +/- 0.3
Flammability	Non-Flammable	Flammable 1B	Non-Flammable	Non-Flammable

Lower Flammability Limit (%)	Not Relevant	14.4 % (V)	Not Relevant	Not Relevant
Upper Flammability Limit (%)	Not Relevant	31.0 % (V)	Not Relevant	Not Relevant
Flash point (°C)	Not Relevant	Not Applicable	Not Relevant	Not Relevant
Auto-ignition temperature (°C)	>743 °C	530 °C	>750 °C	630 °C
Decomposition temperature	No data available	No data available	No data available	No data available
pH (as supplied)	No data available	No data available	No data available	No data available
Kinematic viscosity	Not applicable	Not applicable	Not applicable	Not applicable
Solubility in water (g/L)	1 g/l (25 °C)	1.68 g/l (25 °C)	3.89 g/l (24°C)	3.0 g/l (25 °C)
Partition coefficient n-octanol /water	Log Kow: 1.06 (25°C)	Log Pow: 0.21 (25°C)	Log Kow: 1.48 (25°C)	Log Kow: 1.11 (25°C)
Vapour pressure	665 kPa @ 25°C	1701 kPa @ 25°C	1244 kPa @ 21°C	971 kPa @ 26°C
Vapour density	4.24 kg/m ³ @ 20°C	2.1 kg/m ³ @ 25°C	6.75 kg/m ³ @ 20°C	3.59 kg/m ³ @ 20°C
Relative vapour density	3.5 (Air = 1.0)	No data available	4.2 (Air = 1.0)	3.1 (Air = 1.0)
Particle characteristics	No data available	No data available	No data available	No data available

SECTION 10 - STABILITY AND REACTIVITY

Reactivity	Not classified as a reactivity hazard
Chemical stability	Product is considered stable when stored and handled in accordance with section 7 Unstable in the presence of incompatible materials - refer section 7
Possibility of hazardous reactions	Polymerisation will not occur. Vapours may form flammable mixture with air Can react with strong oxidizing agents – refer section 7
Conditions to avoid	Keep away from heat and sources of ignition.
Incompatible materials	Alkaline earth metals Finely divided metals (aluminium, magnesium, zinc) Alkali or powdered metals Strong acids and bases Strong oxidizing agents Peroxide compounds

Hazardous decomposition products	Thermal decomposition giving toxic and corrosive products: Carbonyl halides Carbon oxides Fluorine compounds Hydrogen fluoride
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SECTION 11 - TOXICOLOGICAL INFORMATION

Information on toxicological effects

	1,1,1,2 Tetrafluoroethene (134a)	Difluoromethane (R32)	Pentafluoroethane (R125)	Chlorodifluoromethane (R22)
Acute Toxicity	Not classified based on available information	Not classified based on available information	Not classified based on available information	Not classified based on available information
Acute inhalation	<p>Inhalation (rat): No Mortality 567000 ppm/4h (Method: OECD Test Guideline 403)</p> <p>Inhalation of vapours may cause drowsiness and dizziness.</p> <p>Vapour accumulation and/or inhalation of large quantities, the product can cause loss of consciousness and cardiac disorders aggravated by stress and lack of oxygen.</p>	<p>Inhalation (rat) LC50: >760000 ppm/4h</p> <p>Inhalation of vapours may cause drowsiness and dizziness. This may be accompanied by sleepiness, reduced alertness, loss of reflexes, lack of co-ordination, and vertigo.</p> <p>Respiratory: shortness of breath and rapid breathing.</p> <p>Cardiovascular: collapse and irregular heartbeats.</p> <p>Gastrointestinal: mucous membrane irritation, nausea and vomiting.</p>	<p>Inhalation (rat): No Mortality 800000 ppm/4h (Method: OECD Test Guideline 403)</p> <p>Inhalation of vapours may cause drowsiness and dizziness.</p> <p>Vapour accumulation and/or inhalation of large quantities, the product can cause loss of consciousness and cardiac disorders aggravated by stress and lack of oxygen.</p>	<p>Inhalation (rat): No Mortality 220000 ppm/4h (Method: OECD Test Guideline 403)</p> <p>Inhalation high concentrations of vapours may cause drowsiness and dizziness.</p> <p>Vapour accumulation and/or inhalation of large quantities, the product can cause loss of consciousness and cardiac disorders aggravated by stress and lack of oxygen.</p>
Skin	Not classified as a skin irritant. Contact with liquified material or escaping compressed gas may cause frostbite injury.	Not classified as a skin irritant. Contact with liquified material or escaping compressed gas may cause frostbite injury.	Not classified as a skin irritant. Contact with liquified material or escaping compressed gas may cause frostbite injury.	Not classified as a skin irritant. Contact with liquified material or escaping compressed gas may cause frostbite injury.
Eye	Not classified as an eye irritant. Contact with liquified material or escaping compressed gas may cause frostbite injury.	Not classified as an eye irritant. Contact with liquified material or escaping compressed gas may cause frostbite injury.	Not classified as an eye irritant. Contact with liquified material or escaping compressed gas may cause frostbite injury.	Not classified as an eye irritant. Contact with liquified material or escaping compressed gas may cause frostbite injury.

Sensitisation	Not classified as causing skin or respiratory sensitization.	Not classified as causing skin Or respiratory sensitization.	Not classified as causing skin or respiratory sensitization.	Not classified as causing skin or respiratory sensitization.
Mutagenicity	Not classified as a mutagen.	Not classified as a mutagen.	Not classified as a mutagen.	Not classified as a mutagen.
Carcinogenicity	Not classified as a carcinogen.	Not classified as a carcinogen.	Not classified as a carcinogen.	Not classified as a carcinogen.
Reproductive	Not classified as a reproductive toxin.	Not classified as a reproductive toxin.	Not classified as a reproductive toxin.	Not classified as a reproductive toxin.
STOT – single exposure	Asphyxiant. Effects are proportional to oxygen displacement. Over exposure may result in dizziness, drowsiness, weakness, fatigue, breathing difficulties and unconsciousness.	Asphyxiant. Effects are proportional to oxygen displacement. Over exposure may result in dizziness, drowsiness, weakness, fatigue, breathing difficulties and unconsciousness.	Asphyxiant. Effects are proportional to oxygen displacement. Over exposure may result in dizziness, drowsiness, weakness, fatigue, breathing difficulties and unconsciousness.	Asphyxiant. Effects are proportional to oxygen displacement. Over exposure may result in dizziness, drowsiness, weakness, fatigue, breathing difficulties and unconsciousness.
STOT - repeated	Not classified as causing organ damage from repeated exposure.	Not classified as causing organ damage from repeated exposure.	Not classified as causing organ damage from repeated exposure.	Not classified as causing organ damage from repeated exposure.
Aspiration hazard	Not classified as causing aspiration.	Not classified as causing aspiration.	No data available	Not classified as causing aspiration.

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity

Ingredient	Endpoint	Test Duration (hr)	Species	Value
R134a	EC50	48	Daphnia (Water flea)	980 mg/L
R134a	LC50	96	Fish	450 mg/L
R134a	ErC50	72	Algae or other aquatic plants	>118 mg/L
R134a	EC10	6	Microorganisms	>730 mg/L
R32	EC50	384	Crustacea	17.989mg/L
R32	LC50	96	Fish	77.251mg/L
R32	NOEC	96	Fish	10mg/L
R32	EC50	48	Crustacea	>97.9mg/L
R32	EC50	72	Algae or other aquatic plants	>114mg/L

Ingredient	Endpoint	Test Duration (hr)	Species	Value
R125	EC50	48	Daphnia (Water flea)	>200 mg/L
R125	LC50	96	Fish	>200 mg/L
R125	ErC50	72	Algae or other aquatic plants	>118 mg/L
R22	EC50	48	Daphnia (Water flea)	433 mg/L
R22	LC50	72	Fish	777 mg/L
R22	EC50	72	Algae or other aquatic plants	377.6mg/L
R22	EC10	24	Microorganisms	>400 mg/L

DO NOT discharge into sewer, waterways, or atmosphere.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
R134a	3% after 28 days (Method: OECD Test Guideline 301 D)	Degradation by OH radicals: Direct photolysis (Half-life time): 3.39 years
R32	5% after 28 days (Method: OECD Test Guideline 301 D)	Degradation by OH radicals: Direct photolysis (Half-life time): 3.39 years
R125	5% after 28 days (Method: OECD Test Guideline 301 D)	No Data Available
R22	0% after 28 days (Method: OECD Test Guideline 301 D)	Degradation by radicals OH: Direct photolysis (half -life): 6 years

Bio accumulative potential

Ingredient	Bioaccumulation
R134a	LOW (Log KOW = 1.06 @ 25°C)
R32	LOW (Log KOW = 0.2)
R125	LOW (Log KOW = 1.48 @ 25°C)
R22	LOW (Log KOW = 1.1 @ 20°C)

Mobility in soil

Ingredient	Mobility
R134a	Log KOC = 1.57
R32	Log KOC = 23.74
R125	Log KOC = 1.3 – 1.7
R22	No data available

Other adverse effects

Ingredient	Global Warming Potential (GWP)	Ozone Depletion Potential (ODP)
R134a	1430	0
R32	675	0
R125	3500	0
R22	1810	0.055

Global warming potential (GWP) relative to CO₂. IPCC AR4 100-year time horizon.

SECTION 13 - DISPOSAL CONSIDERATIONS**Waste treatment methods**

Disposal of product and packaging	<p>Do not release cylinder contents or residual to atmosphere.</p> <p>Recover and reclaim unused contents or residual.</p> <p>Return recovered/reclaimed product to supplier.</p> <p>Return empty containers to supplier.</p> <p>Pyrolise or incinerate residue at an approved facility.</p> <p>Ensure damaged or non-returnable cylinders are gas-free prior to disposal.</p> <p>Observe all Commonwealth, State and local environment regulations and law.</p>
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SECTION 14 - TRANSPORT INFORMATION

	Land transport (ADG)	Sea Transport (IMDG)
UN number	1078	1078
Proper shipping name	REFRIGERANT GAS, N.O.S. (Contains 1,1,1,2 Tetrafluoroethene, Pentafluoroethane, Chlorodifluoromethane)	REFRIGERANT GAS, N.O.S. (Contains 1,1,1,2 Tetrafluoroethene, Pentafluoroethane, Chlorodifluoromethane)
Transport hazard class	Class 2.2 Sub risk – None allocated	Class 2.2 Sub risk – None allocated
Packing group number	None allocated	None allocated
Environmental hazards for transport purposes	Not a marine pollutant Synthetic Greenhouse Gas/Ozone Depleting Substance	Not a marine pollutant Synthetic Greenhouse Gas/Ozone Depleting Substance
Special precautions for user	Special provisions 274 Limited Quantities 120ml EMS: F-C, S-V	
Hazchem Code	2TE	

SECTION 15 - REGULATORY INFORMATION

Regulatory information

Classified as hazardous according to the Globally Harmonised System of classification and labelling of Chemicals (GHS) including Work, Health and Safety regulations, Australia.

Montreal Protocol

Listed

The Stockholm Convention

Not available

The Rotterdam Convention

Not available

Basel Convention

Not available

International Convention for the Prevention of Pollution from Ships (MARPOL)

Not available

Safety, health and environmental regulations

All components of this product are listed on the Australian Inventory of Chemical Substances (AICS)

SECTION 16 - OTHER INFORMATION

Date of preparation

SDS reviewed: May 2025

Supersedes: September 2021

Definitions and abbreviations

ADG Code:	Australian Code for the Transport of Dangerous Goods by Road and Rail
CAS Number:	Chemical Abstract Service number
EC50:	Effect Concentration 50%
GHS:	Globally Harmonised System of classification and labelling of chemicals
GWP:	Global Warming Potential
HCIS:	Hazardous Chemicals Information System
LC50:	Lethal Concentration Limit, 50% median lethal concentration
NOEC:	No Observed Effect Concentration

Key Literature

Australian Code for the Transport of Dangerous Goods by Road and Rail 2024 edition 7.9
Hazardous Chemicals Information System
International Maritime Dangerous Goods (IMDG) Code
Ozone Protection and Synthetic Greenhouse Gas Management Act 1989
Preparation of safety data sheets for hazardous chemicals Code of Practice June 2023

END OF SDS