

Material Safety Data Sheet

Non-Hazardous Substance, Dangerous Goods

1. MATERIAL AND SUPPLY COMPANY IDENTIFICATION

Product name: **R407f**

Recommended use: Refrigerant

Supplier: Refrigeration Specialties Ltd
Street Address: 181a Station Rd
Penrose,
Auckland 1061
New Zealand
Telephone: ++64-9-582-0200
Facsimile: ++64-9-580-0468
Website: www.refspecs.co.nz

Emergency telephone number: **0800-996-003**

2. HAZARDS IDENTIFICATION

This material is hazardous according to health criteria of ERMA New Zealand

HSNO Hazard Classification

Refrigerated Liquefied Gas

Hazard Statement:

H281 Contains refrigeration gas; may cause cryogenic burns or injury.

Prevention Statement:

P103 Read label before use.

P282 Wear insulating gloves for cold, face shield and/or eye protection.

DANGEROUS GOODS CLASSIFICATION

Classified as Dangerous Goods by the "New Zealand NZS5433: Transport of Dangerous Goods on Land".

Class: 2.2 Non-Flammable Non-Toxic Gas

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3. COMPOSITION INFORMATION

CHEMICAL ENTITY	CAS NO.	PROPORTION
1,1,1,2-Tetrafluoroethane (R134a)	811-97-2	40%
Difluoromethane (R32)	75-10-5	30%
Pentafluoroethane (R125)	354-33-6	30%
		100%

4. FIRST AID MEASURES

If poisoning occurs, contact a doctor or Poisons Information Centre (0800 764 766).

Inhalation: Remove victim from exposure - avoid becoming a casualty. Remove contaminated clothing and loosen remaining clothing. Allow patient to assume most comfortable position and keep warm. Keep at rest until fully recovered. Seek medical advice if effects persist.

Skin contact: If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. If swelling, redness, blistering or irritation occurs seek medical assistance. For freeze burns, immediately flood burnt area with plenty of warm water (40 - 44 °C) and cover with a clean, dry dressing. Seek immediate medical assistance.

Eye contact: If in eyes wash out immediately with water. In all cases of eye contamination it is a sensible precaution to seek medical advice. For freeze burns, immediately irrigate with copious quantities of warm (40 - 44 °C) water for at least 15 minutes. Eyelids to be held open. Remove clothing if contaminated and wash skin. Urgently seek medical assistance. Transport to hospital or medical centre.

Ingestion: Unlikely to be a route of exposure due to high evaporation rate. However, rinse mouth with water. If swallowed, do NOT induce vomiting. Give a glass of water to drink. Never give anything by the mouth to an unconscious patient. If vomiting occurs give further water. Seek medical advice.

Notes to physician: Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Specific hazards: Non-combustible material.

Fire fighting further advice: Heating can cause expansion or decomposition leading to violent rupture of containers. On decomposing may emit toxic fumes. Fire fighters to wear self-contained breathing apparatus and suitable protective clothing if risk of exposure to products of decomposition.

Hazchem Code: 2TE

Suitable extinguishing media: Not combustible, however, if material is involved in a fire use water fog (or if unavailable fine water spray), foam, dry agent (carbon dioxide, dry chemical powder).

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6. ACCIDENTAL RELEASE MEASURES

If safe, cut off source of leak. If release is large, cut off all ignition sources and evacuate all non-essential personnel from the area. If possible, ventilate the area. If the incident is significant seek immediate assistance from local fire authorities and police. If possible monitor the vapour concentration until dissipated.

7. HANDLING AND STORAGE

Handling: Avoid skin and eye contact and inhalation of vapour.

Storage: Store in a cool, dry, well-ventilated place and out of direct sunlight. Store away from incompatible materials described in Section 10. Keep containers closed when not in use - check regularly for leaks.

This material is classified as a Dangerous Good Class 2.2 Non Flammable, Non Toxic Gas as per the criteria of the New Zealand Dangerous Goods Code and must be stored in accordance with the relevant regulations.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

National occupational exposure limits:

No value assigned for this specific material by Department of Labour .

For:

	TWA		STEL		CARCINOGEN CATEGORY	NOTICES
	ppm	mg/m ³	ppm	mg/m ³		
1,1,1,2-Tetrafluoroethane	1,000	4,240	-	-	-	-

As published by the Department of Labour.

TWA - The time-weighted average airborne concentration over an eight-hour working day, for a five-day working week over an entire working life.

STEL (Short Term Exposure Limit) - the average airborne concentration over a 15 minute period which should not be exceeded at any time during a normal eight-hour workday.

These Exposure Standards are guides to be used in the control of occupational health hazards. All atmospheric contamination should be kept too as low a level as is workable. These exposure standards should not be used as fine dividing lines between safe and dangerous concentrations of chemicals. They are not a measure of relative toxicity.

If the directions for use on the product label are followed, exposure of individuals using the product should not exceed the above standard. The standard was created for workers who are routinely, potentially exposed during product manufacture.

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Engineering measures: Ensure ventilation is adequate to maintain air concentrations below Exposure Standards. Use with local exhaust ventilation or while wearing appropriate respirator. Vapour heavier than air - prevent concentration in hollows or sumps. DO NOT enter confined spaces where vapour may have collected. Natural ventilation should be adequate under normal use conditions. Keep containers closed when not in use.

Personal protection equipment: OVERALLS, SAFETY SHOES, SAFETY GLASSES, GLOVES.

Wear overalls, safety glasses and impervious gloves. Available information suggests that gloves made from polyvinyl chloride (PVC) should be suitable for intermittent contact. However, due to variations in glove construction and local conditions, the user should make a final assessment. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storing or re-using. If risk of inhalation of exists, wear organic vapour/particulate respirator meeting the requirements of AS/NZS 1715 and AS/NZS 1716.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form / Colour / Odour: Clear liquefied gas with an ether-like odour.

Solubility:	Slightly soluble in water
Specific Gravity (25 °C):	N Av
Relative Vapour Density (air=1):	>1
Vapour Pressure (20 °C):	10,218 hPa
Flash Point (°C):	N App
Flammability Limits (%):	N App
Autoignition Temperature (°C):	N Av
Melting Point/Range (°C):	N Av
Boiling Range (°C):	-45.5
pH:	N App
Total VOC (g/Litre):	N Av

(Typical values only - consult specification sheet)
N Av = Not available N App = Not applicable

10. STABILITY AND REACTIVITY

Chemical stability: This material is thermally stable when stored and used as directed.

Conditions to avoid: Elevated temperatures and sources of ignition.

Incompatible Materials: Oxidising agents.

Hazardous decomposition products: Oxides of carbon and nitrogen, smoke and other toxic fumes.

Hazardous reactions: No known hazardous reactions.

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11. TOXICOLOGICAL INFORMATION

No adverse health effects expected if the product is handled in accordance with this Safety Data Sheet and the product label. Symptoms or effects that may arise if the product is mishandled and overexposure occurs are:

Acute Effects

Inhalation: Material may be irritating to mucous membranes and respiratory tract.

Skin contact: Liquid splashes or spray may cause freeze burns. Contact with skin may result in irritation.

Eye contact: May be an eye irritant. Liquid splashes or spray may cause freeze burns to the eye.

Ingestion: Unlikely route of exposure. Swallowing can result in nausea, vomiting and irritation of the Gastro-intestinal tract.

Long Term Effects: No information available for product.

Acute toxicity / Chronic toxicity

No LD50 data available for the product.

12. ECOLOGICAL INFORMATION

Avoid contaminating waterways.

Ecotoxicity: No information available.

Persistence and degradability: No information available.

Mobility: No information available.

13. DISPOSAL CONSIDERATIONS

Refer to Land Waste Management Authority.

14. TRANSPORT INFORMATION

ROAD AND RAIL TRANSPORT

Classified as Dangerous Goods by the criteria of the "New Zealand NZS5433: Transport of Dangerous Goods on Land".

UN No:	3163
Dangerous Goods Class:	2.2
Packing Group:	Not allocated

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Hazchem Code: 2TE
Emergency Response Guide No: 06

Proper Shipping Name: LIQUIFIED GAS, N.O.S. (1,1,1,2-TETRAFLUOROETHANE, PENTAFLUOROETHANE, DIFLUOROMETHANE)

Segregation Dangerous Goods: Not to be loaded with explosives (Class 1), spontaneously combustible substances (Class 4.2) or organic peroxides (Class 5.2), however exemptions may apply.

MARINE TRANSPORT

Classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea.

UN No: 3163
Dangerous Goods Class: 2.2
Packing Group: Not allocated

Proper Shipping Name: LIQUIFIED GAS, N.O.S. (1,1,1,2-TETRAFLUOROETHANE, PENTAFLUOROETHANE, DIFLUOROMETHANE)

AIR TRANSPORT

Classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air.

UN No: 3163
Dangerous Goods Class: 2.2
Packing Group: Not allocated

Proper Shipping Name: LIQUIFIED GAS, N.O.S. (1,1,1,2-TETRAFLUOROETHANE, PENTAFLUOROETHANE, DIFLUOROMETHANE)

15. REGULATORY INFORMATION

Poisons Schedule (Aust): Not applicable

All the constituents of this material are listed on the Australian Inventory of Chemical Substances (AICS).

16. OTHER INFORMATION

Literary reference

Material Safety Data Sheets are updated frequently. Please ensure that you have a current copy.

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This MSDS summarises at the date of issue our best knowledge of the health and safety hazard information of the product, and in particular how to safely handle and use the product in the workplace. Since Actrol Parts Pty Ltd cannot anticipate or control the conditions under which the product may be used, each user must, prior to usage, review this MSDS in the context of how the user intends to handle and use the product in the workplace.

If clarification or further information is needed to ensure that an appropriate assessment can be made, the user should contact this company.

Our responsibility for product as sold is subject to our standard terms and conditions, a copy of which is sent to our customers and is also available upon request.