

SAFETY DATA SHEET

Item Code: W99G47

Section 1.	Identification of the material and the supplier
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Item Code:	W99G47
Product:	Refrigerants Gas R123
Product Use:	Refrigerant Gas
New Zealand Supplier:	Realcold Ltd
Address:	9 Prescott Street Penrose, Auckland
Telephone:	09 526 5700
Fax Number:	09 526 5721
Emergency Telephone:	09 526 5700 0800 766 764 (National Poison Centre)
Manufacturer:	Global Refrigerants (S) PTE Ltd 9 Tuas Link 1, Singapore, 638587
Date of MSDS Preparation:	14 March 2017 Ver 2

Section 2.	Hazards Identification
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This substance is not hazardous according to the *HSNO (Minimum Degrees of Hazard) Regulations 2001*

Primary Routes of Entry: Inhalation, Dermal, Eyes
 Emergency Overview: Warning! CONTENTS UNDER PRESSURE. MAY CAUSE EYE IRRITATION. Avoid contact with eyes. Do not puncture or incinerate container. Wash thoroughly after handling. Contact with rapidly expanding gases can cause frostbite.

Section 3.	Composition / Information on Ingredients
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Ingredients	Wt%	CAS NUMBER.
1,1,1- Trifluoroethane (HFC - 123)	>=99.50%; >=99.80%; >=99.95%	306-83-2

Section 4.	First Aid Measures
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Routes of Exposure:

If in Eyes	Immediately flush eyes with large amounts of water for at least 15 minutes (in case of frostbite, water should not be hot) lifting eyelids occasionally to facilitate irrigation. Get medical attention if symptoms persist.
If on Skin	Promptly flush skin with water until all chemical is removed. If there is evidence of frostbite, bathe (do not rub) with lukewarm (not hot) water. If water is not available, cover with a clean, soft cloth or similar covering. Get medical attention if symptoms persist.

If Swallowed Ingestion is unlikely because of the physical properties and is not expected to be hazardous. DO NOT induce vomiting unless instructed to do so by a physician.

If Inhaled Immediately remove patient to fresh air. If breathing has stopped, give artificial respiration. Use oxygen as required, provided a qualified operator is available. Get medical attention immediately. DO NOT give epinephrine(adrenaline).

Advice to Physician: Because of the possible disturbances of cardiac rhythm, catecholamine drugs, such as epinephrine, should be used with special caution and only in situations of emergency life support. Treatment of overexposure should be directed at the control of symptoms and the clinical conditions.

Section 5. Fire Fighting Measures

Hazard Type	Non Flammable at temperatures and atmospheric pressure. However, this material will become combustible when mixed with air under pressure and exposed to strong ignition sources. Product will decompose at temperatures above 250°C.
Hazards from decomposition products	Hydrochloric acid, and carbonyl halides, such as phosgene.
Suitable Extinguishing media and Precautions for firefighters and special protective clothing	Fire fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) for protection against suffocation and possible toxic decomposition products. Proper eye and skin protection should be provided. Use water spray to keep fire-exposed containers cool and to knock down vapours which may result from product decomposition. Stay upwind and keep out of low areas.
HAZCHEM CODE	Not applicable

Section 6. Accidental Release Measures

Personal Precautions:

Immediately contact emergency personnel. Use suitable protective equipment. Shut off gas supply if this can be done safely. Isolate area until gas has dispersed.

Environmental Precautions:

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Methods for Cleaning-up:

Do not discharge into the environment avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

In Case of Spill or Other Release:

If possible, dam large quantities of liquid with sand or earth. Collect the product with suitable means. Place everything into a closed, labelled container compatible with the product. Clean the area with large quantities of water. Prevent the product from entering sewers or confined places.

Section 7. Handling and Storage

Handling Avoid breathing vapours and liquid contact with eyes, skin or clothing. Do not puncture or drop cylinders, expose them to open flame or excessive heat. Use authorized cylinders. Follow standard safety precautions for

handling and use of compressed gas cylinders. R40A4 should not mixed with air above atmospheric pressure for leak testing or any other purpose.

Storage Keep container tightly closed. Keep container in a cool, well-ventilated area. Cylinders should be stored upright, with valve protection cap in place, and firmly secured to prevent falling or being knocked over. Cylinder temperatures should not exceed 52°C.

Section 8	Exposure Controls / Personal Protection
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WORKPLACE EXPOSURE STANDARDS (provided for guidance only)

Substance	CAS #	TWA		STEL	
		ppm	mg/m3	ppm	mg/m3
2,2-dichloro-1,1,1-trifluoroethane	306-83-2	50			

Workplace Exposure Standard – Time Weighted Average (WES-TWA). *The time-weighted average exposure standard designed to protect the worker from the effects of long-term exposure.* Workplace Exposure Standard – Short-Term Exposure Limit (WESSTEL). *The 15-minute average exposure standard.* Applies to any 15- Minute period in the working day and is designed to protect the worker against adverse effects of irritation, chronic or irreversible tissue change, or narcosis that may increase the likelihood of accidents. The WES-STEL is not an alternative to the WES-TWA; both the short-term and time-weighted average exposures apply.

Engineering Controls Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits.

Personal Protection

Respiratory Protection:

Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Hand Protection:

Chemical-resistant, impervious gloves or gauntlets complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Eye Protection:

Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.

Skin Protection:

Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling.

Additional Recommendations:

High dose-level warning signs are recommended for areas of principle exposure. Provide eyewash stations and quick-drench shower facilities at convenient locations. For tank cleaning operations, see OSHA(29 CFR 1910.132 and 29 CFR 1910.133).

Section 9 Physical and Chemical Properties

Appearance	Colourless Liquid
Odour	Slightly ethereal
Molecular Weight:	152.9
pH	Neutral
Boiling Point	27.9oC
Freezing Point	-107°C
Vapour Pressure	914 mbar.(25°C)
Vapour Density (air=1):	5.3 (25°C)
Specific Gravity(water = 1.0)	1.05(25°C)
Specific Gravity	1.48 (21°C)
Solubility in Water	3.9g/l (25°C)
Decomposition Temperature	> 400°C

Application: Refrigerant; Foaming agent; Cleaning agent Alternative for CFC-11&CFC-113

Section 10. Stability and Reactivity

Stability of Substance	The product is stable.
Conditions to Avoid	Do not mix with oxygen or air above atmospheric pressure. Any source high temperatures, such as lighted cigarettes, flames, hot spots or welding may yield toxic and/or corrosive decomposition products.
Incompatible Materials	Freshly abraded aluminium surfaces (may cause strong exothermic reaction). Chemically active metals for example sodium, potassium, calcium, magnesium, zinc, or powdered aluminium.
Hazardous Decomposition Products	Hydrochloric and hydrofluoric acids; and carbonyl halides, such as phosgene

Section 11 Toxicological Information

Acute Toxicity:

Inhalation, LC₅₀, 4 H, RAT, > 32,000 ppm
Cardiac Sensitization threshold (dog) 20,900 ppm

Delayed (Subchronic and Chronic) Effects:

Chronic (rat): At 30 ppm and above, benign testicular tumours developed in a statistically significant Number of male animals at or near the end of study. At 1000 ppm and above. Benign pancreatic tumours were also seen in males. Retinal atrophy was increased in the test animals. Liver tumours were found in test animals at concentrations at and above 300 ppm. None of the effects were life threatening or life shortening.

Comments:

- * Risk of liver effect
- * Benign tumours probably non applicable to human. In isolated instances, some workers overexposed to HCFC-123, were found to have elevated liver enzymes. The liver enzyme levels returned to normal when the worker overexposure ceased.

Potential Health Hazards:

Skin: Prolonged and/or repeated contact with this solvent can cause irritation of the skin.

Eyes: Irritant. Liquid contact will irritate and may cause conjunctivitis.

Inhalation: When oxygen levels in air are reduced to 12-14% by displacement, symptoms of

asphyxiation, loss of coordination. Increased pulse rate and deeper respiration will occur.

Ingestion: Discomfort due to volatility would be expected.

Section 12. Ecotoxicological Information

Biodegradability: Minimal

Daphnia Magna LC₅₀ = 17.3 mg/L

Rainbow Trout LC₅₀ = 55.5 mg/L

Green Algae LC₅₀ = 96.6 mg/L

Octanol Water Partition CoefficientL LogPow= 2.307 (estimated)

Comments:

*Product is persistent in air (atmospheric lifetime: 1.7 years)

*Harmful for aquatic organisms.

*Nevertheless, hazard for the aquatic environment is limited due to product properties: considerable volatility and low bioaccumulation potential.

Section 13. Disposal Considerations

Waste from residues unused products: Can be used after re-conditioning.

Product removed from the cylinder must be disposed of in accordance with appropriate Local Regulation. Return cylinders with residual product to the supplier .

Section 14 Transport Information

This product is not classified as a Dangerous Good for transport in NZ; NZS 5433:2012

Section 15 Regulatory Information

This substance is not hazardous according to the HSNO (Minimum Degrees of Hazard) Regulations 2001

Section 16 Other Information

1. HSNO Approved Code of Practice: Preparation of Safety Data Sheets, September 2006.

Disclaimer

This document has been issued by Realcold Limited and serves as their Safety Data Sheet ('SDS'). It is based on information concerning the product which has been provided to Realcold Limited or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer. While Realcold Limited have taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, Realcold Limited accept no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS

The information herein is given in good faith, but no warranty, express or implied is made.

Please contact the New Zealand distributor, Realcold Ltd, if further information is required.

Issue Date: 21 Mach 2013

Review Date: 21 March 2018

Product Name: Refrigerant R123
Date of MSDS: 21 March 2013

Item No: W99G47

Issued by: Realcold Ltd
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