

## 1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

### 1.1 Product identifier

**Product name** R123  
**Synonym(s)** 031 - SDS NUMBER • 2,2- DICHLORO-1,1,1- TRIFLUOROETHANE • REFRIGERANT GAS 123

### 1.2 Uses and uses advised against

**Use(s)** AIR CONDITIONING

### 1.3 Details of the supplier of the product

**Supplier name** BOC LIMITED (AUSTRALIA)  
**Address** 10 Julius Avenue, North Ryde, NSW, 2113, AUSTRALIA  
**Telephone** 131 262, (02) 8874 4400  
**Fax** 132 427 (24 hours)  
**Website** <http://www.boc.com.au>

### 1.4 Emergency telephone number(s)

**Emergency** 1800 653 572 (24/7) (Australia only)

## 2. HAZARDS IDENTIFICATION

### 2.1 Classification of the substance or mixture

CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

**GHS classification(s)** Carcinogenicity: Category 2  
Toxic to Reproduction: Lactation effects  
Gases Under Pressure: Liquefied gas  
Specific Target Organ Systemic Toxicity (Repeated Exposure): Category 2

### 2.2 Label elements

**Signal word** WARNING

**Pictogram(s)**



**Hazard statement(s)**

H280 Contains gas under pressure; may explode if heated.  
H351 Suspected of causing cancer.  
H362 May cause harm to breast-fed children.  
H373 May cause damage to organs through prolonged or repeated exposure.

**Prevention statement(s)**

P202 Do not handle until all safety precautions have been read and understood.  
P260 Do not breathe dust/fume/gas/mist/vapours/spray.  
P263 Avoid contact during pregnancy/while nursing.  
P264 Wash thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P281 Use personal protective equipment as required.

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**Response statement(s)**

P308 + P313 IF exposed or concerned: Get medical advice/ attention.

**Storage statement(s)**

P405 Store locked up.  
P410 + P403 Protect from sunlight. Store in a well-ventilated place.

**Disposal statement(s)**

P501 Dispose of contents/container in accordance with relevant regulations.

**2.3 Other hazards**

Asphyxiant. Effects are proportional to oxygen displacement.

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### 3. COMPOSITION/ INFORMATION ON INGREDIENTS

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**3.1 Substances / Mixtures**

Ingredient	CAS Number	EC Number	Content
2,2-DICHLORO-1,1,1-TRIFLUOROETHANE (HCFC 123)	306-83-2	206-190-3	100%

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### 4. FIRST AID MEASURES

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**4.1 Description of first aid measures**

**Eye** Cold burns: Immediately flush with tepid water or with sterile saline solution. Hold eyelids apart and irrigate for 15 minutes. Seek medical attention.

**Inhalation** If inhaled, remove from contaminated area. To protect rescuer, use an Air-line respirator or Self Contained Breathing Apparatus (SCBA). Apply artificial respiration if not breathing. Give oxygen if available. For advice, contact a Poison Information Centre on 13 11 26 (Australia Wide) or a doctor.

**Skin** Cold burns: Remove contaminated clothing and gently flush affected areas with warm water (30°C) for 15 minutes. Apply sterile dressing and treat as for a thermal burn. For large burns, immerse in warm water for 15 minutes. DO NOT apply any form of direct heat. Seek immediate medical attention.

**Ingestion** Due to product form and application, ingestion is considered unlikely.

**First aid facilities** No information provided.

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

In high concentrations may cause asphyxiation. Direct contact with the liquefied material or escaping compressed gas may cause frostbite injury.

**4.3 Immediate medical attention and special treatment needed**

Use of adrenaline and other catecholamines may be contraindicated due to possible cardiac sensitisation. Treatment for asphyxia.

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### 5. FIRE FIGHTING MEASURES

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**5.1 Extinguishing media**

Use water fog to cool containers from protected area.

**5.2 Special hazards arising from the substance or mixture**

Non flammable. May evolve toxic gases (chlorides, phosgene, fluorides, carbon oxides) when heated to decomposition.

**5.3 Advice for firefighters**

Temperatures in a fire may cause cylinders to rupture. Cool cylinders or containers exposed to fire by applying water from a protected location. Remove cool cylinders from the path of the fire. Evacuate the area if unable to keep cylinders cool. Do not approach cylinders or containers suspected of being hot.

**5.4 Hazchem code**

2RE  
2 Fine Water Spray.  
R Wear liquid-tight chemical protective clothing and breathing apparatus. Dilute spill and run-off.  
E Evacuation of people in and around the immediate vicinity of the incident should be considered.

## 6. ACCIDENTAL RELEASE MEASURES

### 6.1 Personal precautions, protective equipment and emergency procedures

If the cylinder is leaking, evacuate area of personnel. Inform manufacturer/supplier of leak. Use Personal Protective Equipment (PPE) as detailed in Section 8 of the SDS.

### 6.2 Environmental precautions

Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous.

### 6.3 Methods of cleaning up

Carefully move material to a well ventilated remote area, then allow to discharge if safe to do so. Do not attempt to repair leaking valve or cylinder safety devices.

### 6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

## 7. HANDLING AND STORAGE

### 7.1 Precautions for safe handling

Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Do not drag, drop, slide or roll cylinders. The uncontrolled release of a gas under pressure may cause physical harm. Use a suitable hand truck for cylinder movement.

### 7.2 Conditions for safe storage, including any incompatibilities

Do not store near incompatible materials. Cylinders should be stored below 45°C in a secure area, upright and restrained to prevent cylinders from falling. Cylinders should also be stored in a dry, well ventilated area constructed of non-combustible material with firm level floor (preferably concrete), away from areas of heavy traffic and emergency exits.

### 7.3 Specific end use(s)

No information provided.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### 8.1 Control parameters

#### Exposure standards

No exposure standards have been entered for this product.

#### Biological limits

No biological limit values have been entered for this product.

### 8.2 Exposure controls

**Engineering controls** Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended.

#### PPE

<b>Eye / Face</b>	Wear safety glasses.
<b>Hands</b>	Wear leather gloves.
<b>Body</b>	Wear coveralls and safety boots.
<b>Respiratory</b>	Where an inhalation risk exists, wear an Air-line respirator.



## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

<b>Appearance</b>	CLEAR COLOURLESS LIQUID
<b>Odour</b>	SLIGHT ETHERAL ODOUR
<b>Flammability</b>	NON FLAMMABLE
<b>Flash point</b>	NOT RELEVANT

**9.1 Information on basic physical and chemical properties**

<b>Boiling point</b>	27.7°C
<b>Melting point</b>	NOT AVAILABLE
<b>Evaporation rate</b>	NOT APPLICABLE
<b>pH</b>	NOT APPLICABLE
<b>Vapour density</b>	NOT AVAILABLE
<b>Specific gravity</b>	NOT APPLICABLE
<b>Solubility (water)</b>	2.1 %
<b>Vapour pressure</b>	8 kPa @ 25°C
<b>Upper explosion limit</b>	NOT RELEVANT
<b>Lower explosion limit</b>	NOT RELEVANT
<b>Partition coefficient</b>	NOT AVAILABLE
<b>Autoignition temperature</b>	NOT AVAILABLE
<b>Decomposition temperature</b>	NOT AVAILABLE
<b>Viscosity</b>	NOT AVAILABLE
<b>Explosive properties</b>	NOT AVAILABLE
<b>Oxidising properties</b>	NOT AVAILABLE
<b>Odour threshold</b>	NOT AVAILABLE

**9.2 Other information**

<b>Critical temperature</b>	184°C
<b>Critical pressure</b>	3,675 kPa
<b>% Volatiles</b>	100 %

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**10. STABILITY AND REACTIVITY**

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**10.1 Reactivity**

Carefully review all information provided in sections 10.2 to 10.6.

**10.2 Chemical stability**

Stable under recommended conditions of storage.

**10.3 Possibility of hazardous reactions**

Polymerization will not occur.

**10.4 Conditions to avoid**

Avoid heat, sparks, open flames and other ignition sources.

**10.5 Incompatible materials**

Incompatible with oxidising agents (e.g. hypochlorites), alkalis (e.g. sodium hydroxide), alkaline earth metals (e.g. manganese).

**10.6 Hazardous decomposition products**

This material will not decompose to form hazardous products other than that already present.

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**11. TOXICOLOGICAL INFORMATION**

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**11.1 Information on toxicological effects**

<b>Acute toxicity</b>	Based on available data, the classification criteria are not met.
<b>Skin</b>	Not classified as a skin irritant. Contact with the liquefied material or escaping compressed gas may cause frostbite injury.
<b>Eye</b>	Not classified as irritating to the eyes. Contact with the liquefied material or escaping compressed gas may cause frostbite injury.
<b>Sensitization</b>	Not classified as causing skin or respiratory sensitisation.
<b>Mutagenicity</b>	Not classified as a mutagen.
<b>Carcinogenicity</b>	Suspected of causing cancer. Preliminary tests resulting from PAFT 1 have indicated that this product has produced tumours in male rats under certain conditions.
<b>Reproductive</b>	May cause harm to breastfed babies.
<b>STOT – single exposure</b>	Asphyxiant. Effects are proportional to oxygen displacement. Over exposure may result in dizziness, drowsiness, weakness, fatigue, breathing difficulties and unconsciousness. May cause cardiac arrhythmia.
<b>STOT – repeated exposure</b>	Prolonged exposure to high concentrations may result in sensitisation to the effects of adrenalins on the heart.
<b>Aspiration</b>	Not classified as causing aspiration.

## 12. ECOLOGICAL INFORMATION

### 12.1 Toxicity

No information provided.

### 12.2 Persistence and degradability

No information provided.

### 12.3 Bioaccumulative potential

No information provided.

### 12.4 Mobility in soil

No information provided.

### 12.5 Other adverse effects

Dangerous for the ozone layer. Hydrogenated chlorofluorocarbon compounds (HCFC's) do not persist in the stratosphere to the same degree as chlorofluorocarbons (CFC's). Although ozone depleting, they have a lower ozone depleting effect than CFC's. Release of HCFCs into the environment should be minimised and where possible, recycling of HCFCs is recommended.

## 13. DISPOSAL CONSIDERATIONS

### 13.1 Waste treatment methods

**Waste disposal** It is an offence under federal law to knowingly exhaust this product to atmosphere whether by intent or negligence. Recover and recycle using appropriate techniques and equipment. Notify the manufacturer that you will be returning a faulty cylinder. Residual product will be disposed of when the cylinder is returned.

**Legislation** Dispose of in accordance with relevant local legislation.

## 14. TRANSPORT INFORMATION

CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE



	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	1078	1078	1078
14.2 Proper Shipping Name	REFRIGERANT GAS, N.O.S. (Contains 2,2- Dichloro-1,1,1-trifluoroethane)	REFRIGERANT GAS, N.O.S. (Contains 2,2- Dichloro-1,1,1-trifluoroethane)	REFRIGERANT GAS, N.O.S. (Contains 2,2- Dichloro-1,1,1-trifluoroethane)
14.3 Transport hazard class	2.2	2.2	2.2
14.4 Packing Group	None Allocated	None Allocated	None Allocated

14.5 Environmental hazards No information provided

### 14.6 Special precautions for user

Hazchem code 2RE  
 GTEPG 2C2  
 EMS F-C, S-V

**Other information** Ensure cylinder is separated from driver and that outlet of relief device is not obstructed. Refer to Commonwealth, State and Territory Dangerous Goods Legislation which contain requirements which affect gas storage and transport.

## 15. REGULATORY INFORMATION

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

**Poison schedule** A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

**PRODUCT NAME R123**

<b>Classifications</b>	Safework Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals.  The classifications and phrases listed below are based on the Approved Criteria for Classifying Hazardous Substances [NOHSC: 1008(2004)].	
<b>Hazard codes</b>	Carc. Xn	Carcinogen Harmful
<b>Risk phrases</b>	R40 R48/20 R64	Limited evidence of a carcinogenic effect. Harmful: danger of serious damage to health by prolonged exposure through inhalation. May cause harm to breastfed babies.
<b>Safety phrases</b>	S3 S9 S23 S38 S41	Keep in a cool place. Keep container in a well ventilated place. Do not breathe gas/fumes/vapour/spray (where applicable). In case of insufficient ventilation, wear suitable respiratory equipment. In case of fire and/or explosion, do not breathe fumes.
<b>Inventory listing(s)</b>	<b>AUSTRALIA: AICS (Australian Inventory of Chemical Substances)</b> All components are listed on AICS, or are exempt.	

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**16. OTHER INFORMATION**

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**Additional information** The storage of significant quantities of gas cylinders must comply with AS4332 The storage and handling of gases in cylinders.

APPLICATION METHOD: Transferred as a liquid into and out of refrigeration equipment by controlled pressure decanting through flexible pipework.

**PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:**

The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

**HEALTH EFFECTS FROM EXPOSURE:**

It should be noted that the effects from exposure to this product will depend on several factors including: frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a ChemAlert report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

<b>Abbreviations</b>	ACGIH	American Conference of Governmental Industrial Hygienists
	CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
	CNS	Central Nervous System
	EC No.	EC No - European Community Number
	EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
	GHS	Globally Harmonized System
	GTEPG	Group Text Emergency Procedure Guide
	IARC	International Agency for Research on Cancer
	LC50	Lethal Concentration, 50% / Median Lethal Concentration
	LD50	Lethal Dose, 50% / Median Lethal Dose
	mg/m <sup>3</sup>	Milligrams per Cubic Metre
	OEL	Occupational Exposure Limit
	pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
	ppm	Parts Per Million
	STEL	Short-Term Exposure Limit
	STOT-RE	Specific target organ toxicity (repeated exposure)
	STOT-SE	Specific target organ toxicity (single exposure)
	SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
	SWA	Safe Work Australia
	TLV	Threshold Limit Value
	TWA	Time Weighted Average

Revision history

Revision	Description
2.0	Standard SDS Review
1.0	Initial SDS creation

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier 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, importer or supplier.

While RMT has 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, RMT accepts 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.

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