

## SAFETY DATA SHEET

# 0094

### 1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

#### 1.1 Product identifier

**Product name** R502 (PRODUCT OBSOLETE)

**Synonym(s)** 094 - SDS NUMBER • CHLORODIFLUOROMETHANE AND CHLOROPENTAFLUOROETHANE • PRODUCT CODE: 159, 815 • REFRIGERANT R502

#### 1.2 Uses and uses advised against

**Use(s)** AIR CONDITIONING • REFRIGERANT

#### 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

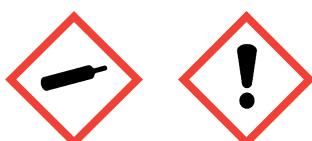
CLASSIFIED AS HAZARDOUS ACCORDING TO AUSTRALIAN WHS REGULATIONS

**GHS classification(s)** Hazardous to the Ozone Layer: Category 1  
Gases Under Pressure: Compressed gas

#### 2.2 Label elements

**Signal word** WARNING

**Pictogram(s)**



#### Hazard statement(s)

H280 Contains gas under pressure; may explode if heated.

H420 Harms public health and the environment by destroying ozone in the upper atmosphere.

#### Prevention statement(s)

None allocated.

#### Response statement(s)

None allocated.

#### Storage statement(s)

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

#### Disposal statement(s)

P502 Refer to manufacturer/supplier for information on recovery/recycling.

### **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 (v/v) |
|-----------------------------------|------------|-----------|---------------|
| CHLORODIFLUOROMETHANE (HCFC-22)   | 75-45-6    | 200-871-9 | 48.8%         |
| CHLOROPENTAFLUOROETHANE (CFC-115) | 76-15-3    | 200-938-2 | 51.2%         |

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## **4. FIRST AID MEASURES**

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### **4.1 Description of first aid measures**

|                      |  |
|----------------------|--|
| Eye                  | None required.   |
| Inhalation           | If inhaled, remove from contaminated area. To protect rescuer, use an Air-line respirator or Self Contained Breathing Apparatus (SCBA). Be aware of possible explosive atmospheres. 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                 | None required.   |
| 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. Symptoms may include loss of mobility / consciousness. Victim may not be aware of asphyxiation.

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

Treat symptomatically.

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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. Remove cool cylinders from the path of the fire. Evacuate the area if unable to keep cylinders cool.

### **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.

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## **6. ACCIDENTAL RELEASE MEASURES**

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### **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.

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**7. HANDLING AND STORAGE**

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**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.

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**8. EXPOSURE CONTROLS / PERSONAL PROTECTION**

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**8.1 Control parameters****Exposure standards**

| Ingredient              | Reference | TWA  |                   | STEL |                   |
|-------------------------|-----------|------|-------------------|------|-------------------|
|                         |           | ppm  | mg/m <sup>3</sup> | ppm  | mg/m <sup>3</sup> |
| Chlorodifluoromethane   | SWA (AUS) | 1000 | 3540              | --   | --                |
| Chloropentafluoroethane | SWA (AUS) | 1000 | 6320              | --   | --                |

**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. Maintain vapour levels below the recommended exposure standard.

**PPE**

|                    |  |
|--------------------|--|
| <b>Eye / Face</b>  | Wear safety glasses.   |
| <b>Hands</b>       | Wear leather gloves.   |
| <b>Body</b>        | Wear safety boots.   |
| <b>Respiratory</b> | Where an inhalation risk exists, wear Self Contained Breathing Apparatus (SCBA) or an Air-line respirator. |



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**9. PHYSICAL AND CHEMICAL PROPERTIES**

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

|                         |                         |
|-------------------------|-------------------------|
| <b>Appearance</b>       | CLEAR COLOURLESS LIQUID |
| <b>Odour</b>            | SLIGHT ETHEREAL ODOUR   |
| <b>Flammability</b>     | NON FLAMMABLE           |
| <b>Flash point</b>      | NOT RELEVANT            |
| <b>Boiling point</b>    | -45.6°C                 |
| <b>Melting point</b>    | NOT RELEVANT            |
| <b>Evaporation rate</b> | NOT APPLICABLE          |
| <b>pH</b>               | NOT APPLICABLE          |

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

|                           |                                      |
|---------------------------|--------------------------------------|
| Vapour density            | NOT AVAILABLE                        |
| Specific gravity          | NOT APPLICABLE                       |
| Solubility (water)        | 0.3 cm <sup>3</sup> /cm <sup>3</sup> |
| Vapour pressure           | 1155 kPa @ 25°C                      |
| Upper explosion limit     | NOT RELEVANT                         |
| Lower explosion limit     | NOT RELEVANT                         |
| Partition coefficient     | NOT AVAILABLE                        |
| Autoignition temperature  | NOT AVAILABLE                        |
| Decomposition temperature | NOT AVAILABLE                        |
| Viscosity                 | NOT AVAILABLE                        |
| Explosive properties      | NOT AVAILABLE                        |
| Oxidising properties      | NOT AVAILABLE                        |
| Odour threshold           | NOT AVAILABLE                        |

**9.2 Other information**

|             |               |
|-------------|---------------|
| Density     | 4.3 (Air = 1) |
| % Volatiles | 100 %         |

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## 10. STABILITY AND REACTIVITY

**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 (violently) with sodium, potassium, barium and other alkaline earth metals (e.g. manganese). Compounding ingredients in natural rubber can be extracted during rapid liquid withdrawal and will swell.

**10.6 Hazardous decomposition products**

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

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## 11. TOXICOLOGICAL INFORMATION

**11.1 Information on toxicological effects**

|                          |  |
|--------------------------|--|
| Acute toxicity           | Based on available data, the classification criteria are not met.  |
| Skin                     | Not classified as a skin irritant.   |
| Eye                      | Not classified as an eye irritant.   |
| Sensitization            | Not classified as causing skin or respiratory sensitisation.   |
| Mutagenicity             | Not classified as a mutagen.   |
| Carcinogenicity          | Not classified as a carcinogen.  |
| Reproductive             | 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. |
| STOT – repeated exposure | Not classified as causing organ effects from repeated exposure.  |
| Aspiration               | Not classified as causing aspiration.  |

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## 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**

OZONE DEPLETING SUBSTANCE. Chlorofluorocarbons (CFCs) diffuse slowly into the stratosphere where they will be destroyed by photolysis, resulting in the release of chlorine and fluorine atoms in the stratosphere. Release of CFCs into the environment should therefore be minimised and where possible, recycling of CFCs is recommended.

**13. DISPOSAL CONSIDERATIONS****13.1 Waste treatment methods****Waste disposal**

OZONE DEPLETING SUBSTANCE. Do not send to landfill. Do not puncture or incinerate aerosol cans. Contact your state EPA or the manufacturer for additional information. Prevent contamination of drains and waterways as environmental damage may result. If container is damaged, 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<br>(ADG)   | SEA TRANSPORT<br>(IMDG / IMO)   | AIR TRANSPORT<br>(IATA / ICAO)  |
|------------------------------------|---|---|---|
| <b>14.1 UN Number</b>              | 1973  | 1973  | 1973  |
| <b>14.2 Proper Shipping Name</b>   | CHLORODIFLUOROMETHANE ANDCHLOROPENTAFLUOROETHANE MIXTURE with fixed boiling point, with approximately 49% chlorodifluoromethane (REFRIGERANT GAS R 502) | CHLORODIFLUOROMETHANE ANDCHLOROPENTAFLUOROETHANE MIXTURE with fixed boiling point, with approximately 49% chlorodifluoromethane (REFRIGERANT GAS R 502) | CHLORODIFLUOROMETHANE ANDCHLOROPENTAFLUOROETHANE MIXTURE with fixed boiling point, with approximately 49% chlorodifluoromethane (REFRIGERANT GAS R 502) |
| <b>14.3 Transport hazard class</b> | 2.2   | 2.2   | 2.2   |
| <b>14.4 Packing Group</b>          | 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.

**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).

|   |  |   |
|---|--|---|
| <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>   | N  | Dangerous for the environment                     |
| <b>Risk phrases</b>   | R59  | Dangerous for the ozone layer.                    |
| <b>Safety phrases</b>   | S7   | Keep container tightly closed.                    |
| <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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| <b>Additional information</b>  | The storage of significant quantities of gas cylinders must comply with AS4332 The storage and handling of gases in cylinders.   |
| <b>PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:</b><br>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.  |  |
| <b>HEALTH EFFECTS FROM EXPOSURE:</b><br>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<br>CAS # Chemical Abstract Service number - used to uniquely identify chemical compounds<br>CNS Central Nervous System<br>EC No. EC No - European Community Number<br>EMS Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)<br>GHS Globally Harmonized System<br>GTEPG Group Text Emergency Procedure Guide<br>IARC International Agency for Research on Cancer<br>LC50 Lethal Concentration, 50% / Median Lethal Concentration<br>LD50 Lethal Dose, 50% / Median Lethal Dose<br>mg/m <sup>3</sup> Milligrams per Cubic Metre<br>OEL Occupational Exposure Limit<br>pH relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).<br>ppm Parts Per Million<br>STEL Short-Term Exposure Limit<br>STOT-RE Specific target organ toxicity (repeated exposure)<br>STOT-SE Specific target organ toxicity (single exposure)<br>SUSMP Standard for the Uniform Scheduling of Medicines and Poisons<br>SWA Safe Work Australia<br>TLV Threshold Limit Value<br>TWA Time Weighted Average |

**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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