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## 1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

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### 1.1 Product identifier

**Product name** R32  
**Synonyms** STAREAST R32

### 1.2 Uses and uses advised against

**Uses** REFRIGERANT

### 1.3 Details of the supplier of the product

**Supplier name** STAREAST INTERNATIONAL PTY LTD  
**Address** 45 Bryant St, Padstow, NSW, 2211, AUSTRALIA  
**Telephone** (02) 9792 5988  
**Fax** (02) 9792 5944  
**Email** [alan@stareast.com.au](mailto:alan@stareast.com.au)  
**Website** <http://www.stareast.com.au/>

### 1.4 Emergency telephone numbers

**Emergency** (02) 9792 5988 - Select option 2

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## 2. HAZARDS IDENTIFICATION

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### 2.1 Classification of the substance or mixture

CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

#### Physical Hazards

Flammable Gases: Category 1B  
Gases Under Pressure: Liquefied gas

#### Health Hazards

Not classified as a Health Hazard

#### Environmental Hazards

Not classified as an Environmental Hazard

### 2.2 GHS Label elements

**Signal word** DANGER

#### Pictograms



#### Hazard statements

H221 Flammable gas.  
H280 Contains gas under pressure; may explode if heated.

#### Prevention statements

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.

#### Response statements

P377 Leaking gas fire: Do not extinguish, unless leak can be stopped safely.  
P381 Eliminate all ignition sources if safe to do so.

**PRODUCT NAME R32**

**Storage statements**

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

**Disposal statements**

None allocated.

**2.3 Other hazards**

In high concentrations may cause asphyxiation. Contact with liquid may cause cold burns/frostbite.

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### 3. COMPOSITION/ INFORMATION ON INGREDIENTS

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**3.1 Substances / Mixtures**

| Ingredient               | CAS Number | EC Number | Content |
|--------------------------|------------|-----------|---------|
| DIFLUOROMETHANE (HFC-32) | 75-10-5    | 200-839-4 | >99%    |

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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). Be aware of possible explosive atmospheres. Apply artificial respiration if not breathing. Give oxygen if available. For advice, contact a Poisons 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. It is recommended that warm water is applied to clothing before removing it so as to prevent further skin damage. 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** None allocated.

**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**

Treat symptomatically.

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### 5. FIRE FIGHTING MEASURES

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**5.1 Extinguishing media**

Stop flow of gas if safe to do so, such as by slowly closing the cylinder valve.

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

Flammable. Eliminate all ignition sources including cigarettes, open flames, spark producing switches/tools, heaters, naked lights, pilot lights, mobile phones etc. when handling.

**5.3 Advice for firefighters**

Temperatures in a fire may cause cylinders to rupture and internal pressure relief devices to be activated. Cool cylinders or containers exposed to fire by applying water from a protected location. Do not approach cylinders or containers suspected of being hot. This material is capable of forming explosive mixtures in air.

**5.4 Hazchem code**

2YE  
2 Fine Water Spray.  
Y Risk of violent reaction or explosion. Wear full fire kit and breathing apparatus. Contain 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. Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe. Ensure adequate air ventilation. Eliminate all sources of ignition. Consider the risk of potentially explosive atmospheres.

### **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**

Store cylinders securely, in separate area in an upright position in cool (<65°C), dry, well ventilated area, removed from incompatible substances, heat or ignition sources and foodstuffs. Ensure cylinders are labelled, protected from physical damage and valves closed when not in use. Make use of old stock first (using a "first in-first out" inventory system), and do not store empty and full cylinders together.

### **7.3 Specific end uses**

No information provided.

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## **8. EXPOSURE CONTROLS / PERSONAL PROTECTION**

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### **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. Flammable/explosive vapours may accumulate in poorly ventilated areas.

#### **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>   | COLOURLESS GAS (LIQUEFIED UNDER PRESSURE) |
| <b>Odour</b>        | SWEET ODOUR                               |
| <b>Flammability</b> | FLAMMABLE                                 |
| <b>Flash point</b>  | NOT AVAILABLE                             |

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

|                           |                  |
|---------------------------|------------------|
| Boiling point             | -52°C            |
| Melting point             | -137°C           |
| Evaporation rate          | NOT AVAILABLE    |
| pH                        | NOT AVAILABLE    |
| Vapour density            | 1.8 (Air = 1)    |
| Relative density          | NOT AVAILABLE    |
| Solubility (water)        | SLIGHTLY SOLUBLE |
| Vapour pressure           | 1705 kPa @ 25°C  |
| Upper explosion limit     | 33.4 %           |
| Lower explosion limit     | 12.7 %           |
| Partition coefficient     | NOT AVAILABLE    |
| Autoignition temperature  | 648°C            |
| Decomposition temperature | NOT AVAILABLE    |
| Viscosity                 | NOT AVAILABLE    |
| Explosive properties      | NOT AVAILABLE    |
| Oxidising properties      | NOT AVAILABLE    |
| Odour threshold           | NOT AVAILABLE    |

**9.2 Other information**

|             |       |
|-------------|-------|
| % Volatiles | 100 % |
|-------------|-------|

**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 shock, friction, heavy impact, heat, sparks, open flames and other ignition sources.

**10.5 Incompatible materials**

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

**10.6 Hazardous decomposition products**

May evolve toxic gases if heated to decomposition.

**11. TOXICOLOGICAL INFORMATION**

**11.1 Information on toxicological effects**

**Acute toxicity** Based on available data, the classification criteria are not met.

**Information available for the ingredients:**

| Ingredient               | Oral LD50 | Dermal LD50 | Inhalation LC50               |
|--------------------------|-----------|-------------|-------------------------------|
| DIFLUOROMETHANE (HFC-32) | --        | --          | 1810 g/m <sup>3</sup> (mouse) |

**Skin** Not classified as a skin irritant. Contact with the liquefied material or escaping compressed gas may cause frostbite injury.

**Eye** Not classified as an eye irritant. Contact with the liquefied material or escaping compressed gas may cause frostbite injury.

**Sensitisation** 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.

**PRODUCT NAME R32**

**STOT - repeated exposure** Not classified as causing organ damage from repeated exposure.

**Aspiration** Not classified as causing aspiration.

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## 12. ECOLOGICAL INFORMATION

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### 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

Global warming has been predicted as a potential consequence of the emission of this product.

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## 13. DISPOSAL CONSIDERATIONS

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### 13.1 Waste treatment methods

**Waste disposal** Cylinders should be returned to the manufacturer or supplier for disposal of contents.

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

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## 14. TRANSPORT INFORMATION

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



|                                    | LAND TRANSPORT (ADG)                      | SEA TRANSPORT (IMDG / IMO)                | AIR TRANSPORT (IATA / ICAO)               |
|------------------------------------|---|---|---|
| <b>14.1 UN Number</b>              | 3252                                      | 3252                                      | 3252                                      |
| <b>14.2 Proper Shipping Name</b>   | DIFLUOROMETHANE<br>(REFRIGERANT GAS R 32) | DIFLUOROMETHANE<br>(REFRIGERANT GAS R 32) | DIFLUOROMETHANE<br>(REFRIGERANT GAS R 32) |
| <b>14.3 Transport hazard class</b> | 2.1                                       | 2.1                                       | 2.1                                       |
| <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** 2YE

**GTEPG** 2A2

**EmS** F-D, S-U

**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.

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## 15. REGULATORY INFORMATION

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

|                           |   |
|---------------------------|---|
| <b>Poison schedule</b>    | 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.                                      |
| <b>Inventory listings</b> | <b>AUSTRALIA: AIC (Australian Inventory of Industrial Chemicals)</b><br>All components are listed on AIC, or are exempt.  |

**16. OTHER INFORMATION**

|                               |  |
|-------------------------------|--|
| <b>Additional information</b> | The storage of significant quantities of gas cylinders must comply with AS4332 The storage and handling of gases in cylinders. |
|-------------------------------|--|

**PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:**

The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, 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: form of product; 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 report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

**Abbreviations**

|                   |   |
|-------------------|---|
| 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   |

**PRODUCT NAME R32**

**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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