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## 1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

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### 1.1 Product identifier

**Product name** PESTIGAS  
**Synonyms** 0080 - SDS NUMBER • PRODUCT CODE: 196

### 1.2 Uses and uses advised against

**Uses** PESTICIDE • SPACE SPRAY

### 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  
**Website** <http://www.boc.com.au>

### 1.4 Emergency telephone numbers

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

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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

Gases Under Pressure: Liquefied gas

#### Health Hazards

Not classified as a Health Hazard

#### Environmental Hazards

Aquatic Toxicity (Acute): Category 3  
Aquatic Toxicity (Chronic): Category 3

### 2.2 GHS Label elements

**Signal word** WARNING

#### Pictograms



#### Hazard statements

H280 Contains gas under pressure; may explode if heated.  
H402 Harmful to aquatic life.  
H412 Harmful to aquatic life with long lasting effects.

#### Prevention statements

P273 Avoid release to the environment.

#### Response statements

None allocated.

**PRODUCT NAME PESTIGAS****Storage statements**

P403 Store in a well-ventilated place.

**Disposal statements**

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

**2.3 Other hazards**

In high concentrations may cause asphyxiation. Contact with liquid may cause cold burns/frostbite. Pyrethrins have been shown to cause allergic skin reactions and allergy or asthma symptoms or breathing difficulties if inhaled.

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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) |
|---|------------|-----------|---------------|
| CARBON DIOXIDE                              | 124-38-9   | 204-696-9 | 87.6%         |
| DISTILLATES (PETROLEUM), HYDROTREATED LIGHT | 64742-47-8 | 265-149-8 | 10%           |
| PIPERONYL BUTOXIDE                          | 51-03-6    | 200-076-7 | 2%            |
| PYRETHRUM                                   | 8003-34-7  | 232-319-8 | 0.4%          |

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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** Remove from exposure area immediately. If assisting a victim and there is an asphyxiation risk, avoid becoming a casualty, wear an Air-line respirator or Self Contained Breathing Apparatus (SCBA). If victim is not breathing apply artificial respiration and seek urgent medical attention. Give oxygen if available.

**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** Ingestion is not considered a potential route of exposure.

**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. Low concentrations of CO<sub>2</sub> cause increased respiration and headache.

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

Treat for asphyxia and cold burns.

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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.

**5.3 Advice for firefighters**

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

**5.4 Hazchem code**

2TE  
2 Fine Water Spray.  
T Wear full fire kit 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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## PRODUCT NAME PESTIGAS

### 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. Ventilate area where possible and eliminate ignition sources.

### 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

Stop the flow of material, if this is without risk. If the leak is irreparable, move the cylinder to a safe and well ventilated area, and allow to discharge. Keep area evacuated and free from ignition sources until any leaked or spilled liquid has evaporated.

### 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

Before use, carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. The uncontrolled release of any gas under pressure may cause physical harm. Do not drop, roll or drag cylinders. Use a suitable hand truck for cylinder movement.

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

Refer to vessel operating instructions. Do not store near incompatible substances, heat or ignition sources and foodstuffs. Portable liquid containers should be stored: upright, prevented from falling, in a secure area; below 65°C, 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 uses

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> |
| Carbon dioxide                              | SWA [AUS]      | 5000  | 9000              | 30000 | 54000             |
| Carbon dioxide in coal mines                | SWA [AUS]      | 12500 | 22500             | 30000 | 54000             |
| Carbon dioxide in coal mines                | SWA [Proposed] | 5000  | 9000              | 30000 | 54000             |
| Distillates (petroleum), hydrotreated light | HSPA [EU]      | --    | 1200              | --    | --                |
| Pyrethrum                                   | SWA [AUS]      | --    | 5                 | --    | --                |
| Pyrethrum                                   | SWA [Proposed] | --    | 1                 | --    | --                |

#### Biological limits

No biological limit values have been entered for this product.

### 8.2 Exposure controls

#### Engineering controls

In poorly ventilated areas, mechanical extraction ventilation is recommended. Maintain vapour levels below the recommended exposure standard. Hand held applications should commence at the furthest point from the exit and continue as the operator moves away from the spray drift towards the exit. Entry should be barred to areas in which fixed nozzle spraying occurs during spraying.

**PRODUCT NAME PESTIGAS**

**PPE**

|                    |   |
|--------------------|---|
| <b>Eye / Face</b>  | Wear safety glasses.  |
| <b>Hands</b>       | Wear leather or insulated gloves.   |
| <b>Body</b>        | Wear safety boots and coveralls.  |
| <b>Respiratory</b> | Where an inhalation risk exists wear a Type A-Class P2 (Organic gases/vapours and particulate) respirator.<br>Where an asphyxiation 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>                     | CHRYSANTHEMUM-LIKE ODOUR                                |
| <b>Flammability</b>              | NON FLAMMABLE   |
| <b>Flash point</b>               | NOT APPLICABLE  |
| <b>Boiling point</b>             | NOT AVAILABLE   |
| <b>Melting point</b>             | NOT AVAILABLE   |
| <b>Evaporation rate</b>          | NOT APPLICABLE  |
| <b>pH</b>                        | NOT APPLICABLE  |
| <b>Vapour density</b>            | NOT AVAILABLE   |
| <b>Relative density</b>          | NOT APPLICABLE  |
| <b>Solubility (water)</b>        | 0.759 cm <sup>3</sup> /cm <sup>3</sup> (Carbon dioxide) |
| <b>Vapour pressure</b>           | 6300 kPa @ 25°C (Approximately)                         |
| <b>Upper explosion limit</b>     | NOT APPLICABLE  |
| <b>Lower explosion limit</b>     | NOT APPLICABLE  |
| <b>Partition coefficient</b>     | NOT AVAILABLE   |
| <b>Autoignition temperature</b>  | NOT APPLICABLE  |
| <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>% 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 contact with incompatible substances.

**10.5 Incompatible materials**

Moist carbon dioxide is corrosive, hence acid resistant materials are required (e.g. stainless steel). Certain properties of some plastics and rubbers may be affected by carbon dioxide (i.e. embrittlement, leaching of plasticisers, etc).

**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. Low concentrations of carbon dioxide cause increased respiration and headache.

**Information available for the ingredients:**

| Ingredient                                  | Oral LD50          | Dermal LD50           | Inhalation LC50 |
|---|--------------------|-----------------------|-----------------|
| DISTILLATES (PETROLEUM), HYDROTREATED LIGHT | > 2000 mg/kg (rat) | > 2000 mg/kg (rabbit) | --              |
| PIPERONYL BUTOXIDE                          | 2600 mg/kg (mouse) | 200 mg/kg (rabbit)    | --              |
| PYRETHRUM                                   | 200 mg/kg (rat)    | 300 mg/kg (rabbit)    | 3.4 mg/L (rat)  |

**Skin** Not classified as a skin irritant. Contact with dry ice powder may cause frostbite injury or cold burns.

**Eye** Not classified as an eye irritant. Contact with dry ice powder may cause frostbite injury or cold burns.

**Sensitisation** Pyrethrins have been shown to cause allergic skin reactions and allergy or asthma symptoms or breathing difficulties if inhaled. However, due to the types of pyrethrins present and concentration, classification as a sensitising agent is not required.

**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 damage from repeated exposure.

**Aspiration** Not classified as causing aspiration.

## 12. ECOLOGICAL INFORMATION

### 12.1 Toxicity

Harmful to aquatic life. Harmful to aquatic life with long lasting effects.

### 12.2 Persistence and degradability

Piperonyl butoxide is not rapidly biodegradable.

### 12.3 Bioaccumulative potential

Piperonyl butoxide may bioaccumulate.

### 12.4 Mobility in soil

The substance is a gas, not applicable.

### 12.5 Other adverse effects

When discharged to the atmosphere, carbon dioxide may contribute to the greenhouse effect. Piperonyl butoxide is toxic to terrestrial invertebrates and aquatic organisms.

## 13. DISPOSAL CONSIDERATIONS

### 13.1 Waste treatment methods

**Waste disposal** Ensure all liquid and gas supply valves are shut. Notify the manufacturer that you will be returning the portable liquid container. Residual product will be disposed of under the manufacturer's supervision.

**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)   |
|------------------------------------|---|---|---|
| <b>14.1 UN Number</b>              | 1968  | 1968  | 1968  |
| <b>14.2 Proper Shipping Name</b>   | INSECTICIDE GAS, N.O.S.<br>(contains piperonyl butoxide,<br>carbon dioxide) | INSECTICIDE GAS, N.O.S.<br>(contains piperonyl butoxide,<br>carbon dioxide) | INSECTICIDE GAS, N.O.S.<br>(contains piperonyl butoxide,<br>carbon dioxide) |
| <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** 2TE  
**GTEPG** 2C2  
**EmS** F-C, S-V

**Other information** Transport on open top vehicles in accordance with local legislation. Ensure cylinder is separated from driver and foodstuffs, 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).

**APVMA Numbers** 32661

**Classifications** Safe Work Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals (GHS Revision 7).

**Inventory listings** **AUSTRALIA: AIIC (Australian Inventory of Industrial Chemicals)**  
 All components are listed on AIIC, or are exempt.

**16. OTHER INFORMATION**

**Additional information** The storage of significant quantities of gas cylinders must comply with AS4332 The storage and handling of gases in cylinders. This product is used as a space spray for control of cockroaches, flies, mosquitos and fleas. It is registered in Australia as an Agricultural Chemical for use by licensed pest controllers. APVMA Approval Number: 32661.

**APPLICATION METHOD:** Cylinder positioned vertically with valve at top. Portable cylinders connected to hand held spray gun or manifolded cylinders connected to fixed pipework distribution system with spray nozzles and controlled release.

**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   |

**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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