

SAFETY DATA SHEET

115

Product Name **MEDICAL OXYGEN, COMPRESSED**

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

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)
Emergency 1800 653 572 (24/7) (Australia only)
Web site <http://www.boc.com.au/>
Synonym(s) AVIATOR'S DRY BREATHING OXYGEN • MEDICAL DRY BREATHING OXYGEN • MEDICAL OXYGEN EP GRADE • OXYGEN, COMPRESSED - MEDICAL GRADE (FORMERLY) • PRODUCT CODES: 400, 420, 430
Use(s) AVIATION RESPIRATION • HYPERBARIC APPLICATIONS • MEDICAL APPLICATIONS • RESPIRATION THERAPY
SDS date 15 March 2013

2. HAZARDS IDENTIFICATION

CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

RISK PHRASES

R8 Contact with combustible material may cause fire.

SAFETY PHRASES

S2 Keep out of reach of children.

S17 Keep away from combustible material.

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

| | | | |
|----------------------|----------------|---------------------------|-----|
| UN number | 1072 | DG division | 2.2 |
| Packing group | None Allocated | Subsidiary risk(s) | 5.1 |
| Hazchem code | 2S | | |

3. COMPOSITION/ INFORMATION ON INGREDIENTS

| Ingredient | Identification | Classification | Content |
|------------|---------------------------------|----------------|---------|
| OXYGEN | CAS: 7782-44-7 EC: 231-956-9 | O;R8 | >99.5% |

4. FIRST AID MEASURES

Eye None required.

Inhalation None required. In the event of over exposure, remove from contaminated area. Apply artificial respiration if not breathing.

Skin None required.

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

Advice to doctor Treatment for hyperoxia.

5. FIRE FIGHTING MEASURES

| | |
|---------------------------|---|
| Flammability | Non flammable - oxidising agent. Supports combustion and may cause fire/explosion in contact with incompatible substances, strong acids, reducing agents, combustibles and flammables. Materials which burn in air, will burn more vigorously in oxygen enriched atmospheres. |
| Fire and explosion | 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. Remove cool cylinders from the path of the fire if safe to do so. Ensure working area is well ventilated before re-use. Notify the manufacturer that you will be returning a faulty cylinder. Residual product will be disposed of when the cylinder is returned. |
| Extinguishing | Use water fog to cool containers from protected area. |
| Hazchem code | 2S 2 Water Fog (or fine water spray if fog unavailable) S Self Contained Breathing apparatus and protective gloves. |

6. ACCIDENTAL RELEASE MEASURES

| | |
|----------------------------------|--|
| Personal precautions | If the cylinder is leaking, evacuate area of personnel. Inform manufacturer/supplier of leak. Use personal protective equipment as detailed in Section 8 of this SDS. |
| Environmental precautions | Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous. |
| 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. |
| References | See Sections 8 and 13 for exposure controls and disposal. |

7. STORAGE AND HANDLING

| | |
|-----------------|--|
| Storage | Do not store near sources of ignition or 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. |
| Handling | Use only as prescribed. Only experienced and properly trained people should use this product or under the supervision of a medical practitioner. 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. |

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

| | |
|-----------------------------|--|
| Exposure standards | No exposure standard(s) allocated. |
| Biological limits | No biological limit allocated. |
| Engineering controls | No special precautions are normally required when handling this product. |

PPE

| | |
|--------------------|--|
| Eye / Face | Wear safety glasses. |
| Hands | Wear leather gloves. |
| Body | Wear safety boots. |
| Respiratory | Not required under normal conditions of use. |



9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|-------------------|----------------|
| Appearance | COLOURLESS GAS |
|-------------------|----------------|

Product Name **MEDICAL OXYGEN, COMPRESSED**

| | |
|--------------------------------------|--|
| Odour | ODOURLESS |
| Flammability | NON FLAMMABLE |
| Flash point | NOT RELEVANT |
| Boiling point | -183°C |
| Melting point | NOT AVAILABLE |
| Evaporation rate | NOT APPLICABLE |
| pH | NOT APPLICABLE |
| Vapour density | NOT AVAILABLE |
| Specific gravity | NOT APPLICABLE |
| Solubility (water) | 0.032 cm ³ /cm ³ |
| Vapour pressure | NOT AVAILABLE |
| Upper explosion limit | NOT RELEVANT |
| Lower explosion limit | NOT RELEVANT |
| Autoignition temperature | NOT AVAILABLE |
| Decomposition temperature | NOT AVAILABLE |
| Viscosity | NOT AVAILABLE |
| Partition coefficient | NOT AVAILABLE |
| Critical temperature | -118.6°C |
| Critical pressure | 5,043 kPa |
| % Volatiles | 100 % |
| Cylinder pressure (when full) | 16,300 - 25,000 kPa @ 15°C |

10. STABILITY AND REACTIVITY

| | |
|---|---|
| Chemical stability | Stable under recommended conditions of storage. |
| Conditions to avoid | Avoid heat, sparks, open flames and other ignition sources. |
| Material to avoid | Combustible materials such as oil and grease can spontaneously ignite at low temperatures in oxygen enriched atmospheres. Materials which burn in air, will burn more vigorously in oxygen enriched atmospheres. All non-metals must be oxygen compatible. Copper is most commonly used metal. Many other materials which do not burn in air will vigorously burn in pure oxygen. Metals can be ignited and will continue to burn in pure oxygen atmospheres under specific conditions of temperature and pressure. |
| Hazardous Decomposition Products | This material will not decompose to form hazardous products other than that already present. |
| Hazardous Reactions | Polymerization will not occur. |

11. TOXICOLOGICAL INFORMATION

| | |
|------------------------------|--|
| Health Hazard Summary | Non irritant - non toxic gas. The respiratory and central nervous systems are primarily affected by gaseous oxygen. No health effects have been observed in humans exposed to concentrations up to 80% oxygen for a few hours or up to 50% for 24 hours. At pressures above 1 atmosphere hyperoxia may appear after 2 to 6 hours. Chronic exposure at normal or elevated pressure may result in severe thickening and scarring of lung tissues. Not carcinogenic or mutagenic. |
| Eye | Non irritant. |
| Inhalation | Non irritant. As the amount of oxygen inhaled is increased chest tightness, burning pains and coughing spasms will occur. Other symptoms of hyperoxia include cramps, nausea, dizziness, hypothermia, amblyopia (loss of vision), bradycardia, fainting spells and convulsions capable of causing death. |
| Skin | Non irritant. |
| Ingestion | Ingestion is considered unlikely due to product form. |
| Toxicity data | No LD50 data available for this product. |

12. ECOLOGICAL INFORMATION

| | |
|--------------------------------------|--------------------------|
| Toxicity | No information provided. |
| Persistence and degradability | No information provided. |
| Bioaccumulative potential | No information provided. |
| Mobility in soil | No information provided. |

Product Name **MEDICAL OXYGEN, COMPRESSED**

Other adverse effects Not toxic to aquatic or terrestrial life.

13. DISPOSAL CONSIDERATIONS

Waste disposal Cylinders should be returned to the manufacturer or supplier for disposal of contents.
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) |
|----------------------|--|-------------------------------|--------------------------------|
| UN number | 1072 | - | - |
| Proper shipping name | OXYGEN, COMPRESSED | - | - |
| DG class/ Division | 2.2 | - | - |
| Subsidiary risk(s) | 5.1 | - | - |
| Packing group | None Allocated | - | - |
| GTEPG | 2C6 | | |
| Hazchem code | 2S | | |
| Other information | Ensure cylinder is separated from driver and foodstuffs. Refer to Commonwealth, State and Territory Dangerous Goods Legislation which contain requirements which affect gas storage and transport. | | |

15. REGULATORY INFORMATION

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)
Inventory Listing(s) **AUSTRALIA: AICS (Australian Inventory of Chemical Substances)**
All components are listed on AICS, 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.

APPLICATION METHOD: Gas regulator of suitable pressure and flow rating fitted to cylinder or manifold with low pressure gas distribution to equipment.

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.

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| | | |
|----------------------|-------------------|---|
| 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 |
| | GHS | Globally Harmonized System |
| | IARC | International Agency for Research on Cancer |
| | LD50 | Lethal Dose, 50% / Median Lethal Dose |
| | mg/m ³ | Milligrams per Cubic Metre |
| | PEL | Permissible Exposure Limit |
| | pH | relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline). |
| | ppm | Parts Per Million |
| | REACH | Regulation on Registration, Evaluation, Authorisation and Restriction of Chemicals |
| | 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 |
| | TLV | Threshold Limit Value |
| | TWA/OEL | Time Weighted Average or Occupational Exposure Limit |

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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End of SDS