

SAFETY DATA SHEET

0052

Product Name **OXYGEN, LIQUID (NZ)****1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER**

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Synonym(s) 0052 - SDS NUMBER • BOC OXYGEN, LIQUID • PRODUCT CODES: 100, 102, 103, 107, 110, 111, 180

Use(s) INDUSTRIAL APPLICATIONS
SDS Date 20 Oct 2010

2. HAZARDS IDENTIFICATION

CLASSIFIED AS HAZARDOUS ACCORDING TO HAZARDOUS SUBSTANCES [CLASSIFICATION] REGULATIONS 2001

HSNO CLASSIFICATION

5.1.2A Oxidising substances that are gases.

HAZARD STATEMENT

H270 May cause or intensify fire; oxidizer.

PREVENTION STATEMENT

P103 Read label before use (applies only where the substance is available to the general public).

P220 Keep/Store away from clothing/incompatible materials/combustible materials.

P244 Keep reduction valves free from grease and oil.

RESPONSE STATEMENT

P370 + P376 In case of fire: Stop leak if safe to do so.

STORAGE STATEMENT

P403 Store in a well-ventilated place.

CLASSIFIED AS A DANGEROUS GOOD ACCORDING TO LAND TRANSPORT RULE: DANGEROUS GOODS 2005; NZS 5433:2007, UN, IMDG OR IATA

UN No.	1073	DG Class	2.2	Subsidiary Risk(s)	5.1
Packing Group	None Allocated	Hazchem Code	2P		

3. COMPOSITION/ INFORMATION ON INGREDIENTS

Ingredient	CAS No.	Content
OXYGEN	7782-44-7	>99.5%

4. 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	Due to product form / nature of use, an inhalation hazard is not anticipated.
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	Not considered a potential route of exposure.
Advice to Doctor	Treat symptomatically.

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.
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	2P

6. ACCIDENTAL RELEASE MEASURES

Spillage	Release of liquid to atmosphere will generate vapour fog clouds which can travel considerable distances and affect visibility. These clouds should be treated as oxygen enriched atmospheres as the evaporated liquid will have displaced air. Refer to vessel operating instructions. In an emergency allow liquid and gas to escape to atmosphere. Contact manufacturer for guidance. Leak checking may be done by pressure drop test or soapy water at joints and outlets. Shut liquid and gas supply valves to stop leak if possible and safe to do so.
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7. STORAGE AND HANDLING

Storage	Do not store near incompatible materials. Portable liquid container should be stored below 45°C in a secure area and upright to prevent from falling. Portable liquid containers 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	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. Prohibit eating, drinking and smoking in contaminated areas.

8. EXPOSURE CONTROLS/ PERSONAL PROTECTION

Exposure Std's	No exposure standard(s) allocated.
Engineering Controls	No special precautions are normally required when handling this product.
PPE	Wear leather or insulated gloves, safety boots and safety glasses.



9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	PALE BLUE LIQUID	Solubility (water)	0.032 cm ³ /cm ³
Odour	ODOURLESS	Specific Gravity	NOT APPLICABLE
pH	NOT APPLICABLE	% Volatiles	100 %
Vapour Pressure	NOT AVAILABLE	Flammability	NON FLAMMABLE

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Vapour Density	1.1141 (Air = 1)	Flash Point	NOT RELEVANT
Boiling Point	-183°C	Upper Explosion Limit	NOT RELEVANT
Melting Point	NOT AVAILABLE	Lower Explosion Limit	NOT RELEVANT
Evaporation Rate	NOT APPLICABLE		
Critical Temperature	-118.4°C		

10. STABILITY AND REACTIVITY

Chemical Stability	Stable under recommended conditions of storage.
Conditions to Avoid	Avoid contact with incompatible substances.
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. Metals can be ignited and will continue to burn in pure oxygen atmospheres under specific conditions of temperature and pressure. All non-metals must be oxygen compatible. Low temperature will change mechanical properties of some materials. Aluminium, stainless steel, copper are most commonly used metals. Mild steel should not be used as it becomes brittle.
Hazardous Decomposition Products	This material will not decompose to form hazardous products.
Polymerization	Polymerization will not occur.

11. TOXICOLOGICAL INFORMATION

Health Hazard Summary	Non toxic. Low temperatures created during evaporation may result in hypothermia. Skin may freeze to surfaces cooled by liquid and be torn on removal. 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. Over exposure at normal or elevated pressure may result in severe thickening and scarring of lung tissues. Not carcinogenic or mutagenic.
Eye	Non irritant. However, direct contact with evaporating liquid may result in severe cold burns with possible permanent damage.
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. However, direct contact with the liquefied material or escaping compressed gas may cause frostbite injury.
Ingestion	Ingestion is considered unlikely due to product form.
Toxicity Data	No LD50 data available for this product.

12. ECOLOGICAL INFORMATION

Environment	Not toxic to aquatic or terrestrial life.
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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

Transport	Transport on open top vehicles in accordance with local legislation.
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Shipping Name OXYGEN, REFRIGERATED LIQUID
UN No. 1073 **DG Class** 2.2 **Subsidiary Risk(s)** 5.1
Packing Group None Allocated **Hazchem Code** 2P

IATA
Shipping Name OXYGEN, REFRIGERATED LIQUID
UN No. 1073 **DG Class** 2.2 **Subsidiary Risk(s)** 5.1
Packing Group None Allocated

IMDG
Shipping Name OXYGEN, REFRIGERATED LIQUID
UN No. 1073 **DG Class** 2.2 **Subsidiary Risk(s)** 5.1
Packing Group None Allocated

15. REGULATORY INFORMATION

Approval Code HSR001029
Group Name Oxygen
HSNO Controls **AH1** - Approved Handler requirements (including test certificate and qualification requirements). Refer to the New Zealand Hazardous Substances and New Organisms (Personnel Qualifications) Regulations 2001, Regulations 4 - 6 for more information.
Refer to the ERMA website for more information: www.ermanz.govt.nz

16. OTHER INFORMATION

Additional Information Liquid oxygen is used as the oxidant of liquid fuel for aerospace propulsion, in explosives and in mines rescues. Widely used in enhancing combustion processes, particularly in metals processing such as smelting. Also used in waste water treatment.

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

ABBREVIATIONS:

ACGIH - American Conference of Industrial Hygienists.
ADG - Australian Dangerous Goods.
BEI - Biological Exposure Indice(s).
CAS# - Chemical Abstract Service number - used to uniquely identify chemical compounds.
CNS - Central Nervous System.
EC No - European Community Number.
HSNO - Hazardous Substances and New Organisms.
IARC - International Agency for Research on Cancer.
mg/m3 - Milligrams per Cubic Metre.
NOS - Not Otherwise Specified.
pH - relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm - Parts Per Million.
RTECS - Registry of Toxic Effects of Chemical Substances.
STEL - Short Term Exposure Limit.
SWA - Safe Work Australia.
TWA - Time Weighted Average.

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 Chem Alert report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:

The recommendation for protective equipment contained within this Chem Alert 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

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made.

Report Status This document has been compiled by RMT on behalf of the manufacturer of the product and serves as the manufacturer's Safety Data Sheet ('SDS').

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

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 Report