

Safety Data Sheet

MEDICAL OXYGEN, Compressed Gas (O₂)

SECTION 1: IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product Name: Oxygen, Medical (NZ)
SDS Number: 0011
Chemical Description: Oxygen
Chemical Formula: O₂

1.2 Relevant identified uses and uses advised against

Uses: Medical Applications (Breathable)

1.3 Details of the product supplier

Supplier Name: Nitrogenx Limited
Address: Unit 5, 9A Northside Drive, Whenuapai, Auckland NZ
Phone: 0800 22 33 85
Email: compliance@nitrogenx.co.nz

1.4 Emergency telephone number

National Poisons Centre: 0800 764 766 (0800 POISON)

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classified as hazardous according to Hazardous Substances (Classification) Regulations 2001.

HSNO Classification: 5.1.2A – Oxidising Substances that are gases.
Compressed Gases – Contains gas under pressure; may explode if heated.

2.2 Label elements

Signal word:

DANGER

Pictograms:



Hazard Statements: H270 May cause or intensify fire; oxidiser.
H280 Contains gas under pressure; may explode if heated.

Precautionary Statements: P103 Read label before use.
P220 Keep away from clothing and other combustible materials.
P244 Keep valves and fittings free from oil and grease.

Response Statements: P370 & 376 In case of fire; Stop leak if safe to do so.

Storage Statements: P403 Store in a well-ventilated place.

Disposal Statements: None allocated.

2.3 Other hazards

No additional information provided.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	Product Identifier	Proportion (vol %)
OXYGEN	(Cas No) 7782-44-7	>99.5%
OXYGEN	(EC No) 231-956-9	>99.5%

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SECTION 4: FIRST-AID MEASURES

4.1 Description of first-aid measures

Inhalation:	Remove victim to uncontaminated area. Apply artificial respiration if not breathing.
Skin Contact:	Adverse effects not expected from this product.
Eye Contact:	Adverse effects not expected from this product.
Ingestion:	Is not considered a potential route of exposure.
First-Aid facilities:	Eye wash facilities should be available.

4.2 Most important symptoms and effects, both acute and delayed

Continuous inhalation of concentrations higher than 75% may cause nausea, dizziness, respiratory difficulty and convulsion.

4.3 Immediate medical attention and special treatment needed

Treatment for hyperoxia.

SECTION 5: FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Use water spray or fog to cool containers from protected area.
Do not use water jet to extinguish.

5.2 Specific hazards arising for the substance or mixture

Exposure to fire may cause containers to rupture or explode.
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 an oxygen enriched atmosphere.

5.3 Advice for firefighters

Specific Methods	Use fire control measures appropriate for surrounding fire. Exposure to fire and heat radiation may cause gas receptacles 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 if this can be done without risk. Evacuate the area if unable to keep cylinders cool. Do not approach cylinders or containers suspected of being hot.
Special Protective Equipment	Standard protective clothing and equipment including Self Contained Breathing Apparatus for fire fighters. Do not enter fire area without proper personal protective equipment, including respiratory.
Hazchem Code:	2S 2 Use fog or fine spray. S Risk of violent reaction or explosion. Wear full fire kit and breathing apparatus. Dilute spill and run off.

SECTION 6: ACCIDENTAL RELEASE MEASURES

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.

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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.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling.

Safe use of the Product	Before use carefully read the product label. Use of safe work practices are recommended to avoid inhalation. Only experienced and properly instructed persons should handle gases under pressure. Do not smoke while handling product. 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.
Safe handling of gas receptacle	Refer to supplier's container handling instructions. Protect cylinders from physical damage; do not drag, roll, slide or drop. If user experiences any difficulty operating cylinder valve discontinue use and contact the supplier. Never attempt to repair or modify container valves or safety relief devices. Keep container outlets clean and free from contaminants particularly oil and water. Damaged valves should be reported immediately to the supplier. Close container valve after each use and when empty, even if still connected to equipment. Never attempt to transfer gases from one cylinder/container to another. Do not remove or deface labels provided by the supplier for the identification of the contents.

7.2 Conditions for safe storage, including any incompatibilities.

General	Do not store near sources of ignition or incompatible materials. Cylinders should be stored below 50°C in a secure area, properly secured and upright to prevent falling. Segregate from flammable gases and other flammable materials stored. Store containers away from fire risk, sources of heat or ignition and away from heavy traffic areas and emergency exits.
Approved Handlers	Required if more than 200m ³ is stored on site.
Location Test Certificates	Required if more than 200m ³ is stored on site.

7.3 Specific Use/s

No specific information provided.

SECTION 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

8.1 Control parameters

OEL (Occupational Exposure Limits)	No data available
DNEL (Derived-No Effect Level)	No data available
PNEC (Predicted No-Effect Concentration)	No data available

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8.2 Exposure controls

Exposure Standards: No exposure standards have been entered for this product.
Engineering Controls: No special precautions are required when handling under normal conditions of use.

8.3 Individual protection measures

A risk assessment should be conducted and documented in each work area to assess the risks related to the use of the product and to select the PPE that matches the relevant risk. The following recommendations should be considered.



Personal Protection: Compliant to EN/ISO standards should be selected.
Eye / Face Protection: Wear safety glasses.
Skin Protection: Wear covered shoes when handling cylinders.
Respiratory Protection: Recommended use of gloves when handling cylinders.
Not required under normal conditions of use.

8.4 Environmental exposure controls

None necessary.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical State: Gas
Appearance: Colourless
Odour: Odourless
Flammability: Non-flammable
Melting Point: -219°C
Boiling Point: -183°C
Critical Temperature: -118°C
Flash Point: Not applicable
PH: Not applicable
Specific gravity: Not applicable
Vapour density: 1.11 (air = 1)
Partition coefficient: Not available
Autoignition temperature: Not available
Decomposition temperature: Not available
Viscosity: Not available
Explosive properties: Not available
Oxidising properties: Oxidiser
Odour threshold: Odour threshold is subjective and inadequate to warn of overexposure.

9.2 Other Information

% Volatiles: 100 %
Gas / Vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level.

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SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

No reactivity hazard other than the effects described in subsections below.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Violently oxidises organic material.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

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.

10.6 Hazardous decomposition products

This material will not decompose to form hazardous products other than that already present.

SECTION 11: TOXICOLOGY INFORMATION

11.1 Information on toxicological effects

Acute toxicity	Based on available data; the classification criteria are not met.
Skin corrosion / irritation	Not classified as a skin irritant.
Eye damage / irritation	Not classified as an eye irritant.
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 (Specific Target Organ Toxicity)	Not classified as causing organ damage from single exposure.
STOT – Repeated exposure	Continuous inhalation of concentrations higher than 75% may cause nausea, dizziness, respiratory difficulty and convulsions.
Aspiration	Not classified as causing aspiration.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

No ecological damage caused by this product.

12.2 Persistence and degradability

No information provided.

12.3 Bio accumulative potential

No information provided.

12.4 Mobility in soil

No information provided.

12.5 Other adverse effects

No information provided.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal:	Cylinders should be returned to the manufacturer for disposal of contents.
Legislation:	Dispose of in accordance with relevant local legislation.

13.2 Additional information

Vent to atmosphere in a well-ventilated place. Do not discharge into any place where its accumulation could be dangerous. Discharge to atmosphere in larger quantities should be avoided.

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SECTION 14: TRANSPORT INFORMATION

CLASSIFIED AS A DANGEROUS GOOD ACCORDING TO LAND TRANSPORT RULE: DANGEROUS GOODS 2005; NZS 5433:2012, UN, IMDG OR IATA



2.2 Non-flammable, Non-toxic gas

5.1 Oxidising substances

14.1 Land transport

Land Transport Rule:	Dangerous Goods 2005: NZS 5433:2012
UN Number:	1072
UN Proper Shipping Name:	OXYGEN, COMPRESSED
Transport hazard class:	2.2 sub 5.1
Packing Group:	Not applicable
Environmental hazards:	None

14.2 Transport by Sea

IMDG:	International Maritime Dangerous Goods
UN Number:	1072
UN Proper Shipping Name:	OXYGEN, COMPRESSED
Transport hazard class:	2.2 sub 5.1
Packing Group:	Not applicable
Environmental hazards:	None
Emergency Schedule (EmS)	Fire F-C Spillage S-W

14.3 Transport by Air

ICAO / IATA:	International Civil Aviation Organisation / International Air Transport Association
UN Number:	1072
UN Proper Shipping Name:	OXYGEN, COMPRESSED
Transport hazard class:	2.2 sub 5.1
Packing Group:	Not applicable
Environmental hazards:	None

14.4 Special precautions for user

Hazchem code:	2S
Special transport information:	Avoid transport on vehicles where the load space is not separate from the drivers compartment. Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency.

Before transporting product containers:

- Ensure there is adequate ventilation.
- Ensure that containers are firmly secured.
- Ensure the cylinder valve is closed and not leaking.
- Ensure valve protection device (where provided) is correctly fitted.

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SECTION 15: REGULATORY INFORMATION

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

HSNO Approved code: HSR001029
Listed on the New Zealand Inventory of Chemicals (NZIoC)

15.2 Chemical safety assessment

A chemical safety assessment does not need to be carried out for this product.

SECTION 16: OTHER INFORMATION

16.1 Additional Information

Cylinder Features:

Colour	AS4484-2016 White
Valve outlet	AS2473.3 Fig 9

Personal Protective Equipment Guidelines:

The recommendation for protective equipment contained within this Safety Data Sheet is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, and product concentration should be considered before final selection of personal protective equipment is made. A risk assessment should be conducted and documented in each work area to assess the risk related to the use of the product and to select the PPE that matches the relevant risk.

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. It is required that users will assess the risks and apply control measures as appropriate. Ensure operators understand the hazard of oxygen enrichment.

Disclaimer of liability:

This SDS has been prepared by Nitrogenx and serves as their Safety Data Sheet (SDS). Before using this product in any new process or experiment, a thorough material compatibility and safety study should be carried out. Details given in this document are believed to be correct at the time of printing however they are not guaranteed. While proper care has been taken in the preparation of this document, 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 within this SDS can be accepted.

Each user should read this SDS and consider the information in the context of how the product will be handled and used in the workplace in conjunction with other products.

If clarification or further information is needed to ensure that an appropriate risk assessment can be made, the user should contact Nitrogenx directly.