1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name	Oxygen
GHS Product Identifier	Oxygen
Chemical Name	Oxygen
Synonyms	O_2, Compressed Oxygen, Industrial Oxygen, Welding Oxygen, Aviator Oxygen (when so specified)
Recommended Use	Oxy-fuel cutting and welding; metal-fume treatments; chemical-process oxidation; medical (where specifically supplied as medical grade).
Uses Advised Against	Do NOT use in place of compressed air for any purpose. Do NOT use to power pneumatic tools, ventilate confined spaces, pressurise vessels or atomise paints/coatings — oxygen-enrichment makes ordinary materials violently flammable.

Details of the supplier

Supplier Name	Puregas Aust Pty Ltd
Address	15-17 Distribution Drive, Mickleham VIC 3064, Australia
Telephone	1300 733 097
Email / Web	sales@puregas.com.au

Emergency telephone number(s)

24 hr Emergency	1300 733 097 (24 hours)
Fire / Ambulance / Police	000 (within Australia)
Poisons Information Centre	13 11 26 (Australia)

2. HAZARDS IDENTIFICATION

CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA.

CLASSIFIED AS DANGEROUS GOODS BY THE CRITERIA OF THE ADG CODE.

GHS Classification	Oxidising Gases: Category 1 Gases Under Pressure: Compressed Gas
Signal Word	DANGER

Pictograms: GHS03 (Flame Over Circle — Oxidiser) + GHS04 (Gas Cylinder — gas under pressure)

Hazard statements

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

Precautionary statements

Prevention — P220	Keep / store away from clothing, combustible materials and all other flammable materials.
Prevention — P244	Keep valves and fittings free from oil and grease.
Response — P370+P376	In case of fire: stop leak if safe to do so.
Storage — P403	Store in a well-ventilated place.

Disposal	Return cylinders to supplier — see Section 13.

Other hazards

Oxygen vigorously supports combustion. Materials normally considered non-flammable may burn violently in oxygen-enriched atmospheres. Oils, greases and many plastics can ignite spontaneously on contact with high-pressure oxygen.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient	CAS Number	EC Number	Content
Oxygen	7782-44-7	231-956-9	≥ 99.5 %

4. FIRST AID MEASURES

Eye contact	Not normally a hazard. If liquid oxygen contact occurs, flush with copious tepid water for at least 15 minutes and obtain medical attention immediately.
Inhalation	Remove casualty from oxygen-enriched atmosphere to fresh air. Prolonged inhalation of high-concentration oxygen can cause lung irritation; obtain medical attention.
Skin contact	Cold burns from liquid oxygen — gently flush affected area with warm water (≈ 30 °C) for 15 minutes; treat as a thermal burn; obtain immediate medical attention.
Ingestion	Not a relevant route of exposure (gas).
Smouldering clothing	Oxygen-saturated clothing can ignite violently. Remove contaminated clothing immediately and air for at least 30 minutes before re-use. Do not smoke or approach naked flame while in oxygen-saturated clothing.
Most important symptoms	Prolonged exposure to high oxygen concentrations: cough, chest tightness, breathing difficulty.
Medical attention	Treat symptomatically.

5. FIRE FIGHTING MEASURES

Extinguishing media	Oxygen is not itself flammable but supports combustion. Stop the flow of oxygen if safe to do so. Use extinguishing media appropriate to the burning material. Water spray can be used to cool cylinders.
Special hazards	Oxygen-enriched atmospheres make ordinary materials burn violently. Cylinders heated in a fire may rupture and the pressure-relief device may discharge a high-velocity oxygen jet that intensifies the surrounding fire.
Advice for firefighters	Wear full bunker gear and SCBA. Cool exposed cylinders with water from a protected location until well after the fire is out. Move cool cylinders out of the path of the fire if safely possible. If a leaking oxygen cylinder is on fire, STOP THE LEAK before attempting to extinguish.
Hazchem Code	2SE

6. ACCIDENTAL RELEASE MEASURES

Personal precautions	Evacuate the area. Eliminate all ignition sources. Ventilate. Oxygen-enriched atmospheres (>23 %) significantly increase fire risk — do not enter without atmospheric monitoring. PPE as specified in Section 8.
Environmental precautions	Allow gas to dissipate to atmosphere in a safe, open location. Prevent accumulation in basements, pits or confined spaces.
Methods of cleanup	If safe, close cylinder valve. Otherwise move the cylinder to a safe, open, well-ventilated location and allow oxygen to discharge to atmosphere. Do not attempt to repair leaking valves or pressure-relief devices — return to Puregas.

7. HANDLING AND STORAGE

Safe handling	Use only with regulators, hoses and equipment specifically rated for oxygen service. Keep valves, fittings, regulators and the threads of cylinders FREE FROM OIL, GREASE AND OTHER HYDROCARBONS — spontaneous ignition can occur. Do not use lubricants on oxygen fittings unless specifically rated for oxygen service. Open cylinder valves slowly to avoid adiabatic compression ignition.
Safe storage	Store cylinders upright in a secure, well-ventilated area below 65 °C, on firm non-combustible flooring. Restrain to prevent toppling. Segregate FULL from EMPTY cylinders. Segregate oxygen from flammables, fuel gases and combustibles by at least 5 metres or by a 1.5 m high non-combustible barrier with a 30-minute fire rating. Comply with AS 4332 and AS 4839.
Specific end uses	Oxy-fuel cutting and welding; industrial oxidation processes.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure standards (Safe Work Australia)

No occupational exposure limit assigned to oxygen — it is the breathable component of air at ~ 21 %. However, oxygen-enriched atmospheres (> 23.5 %) significantly increase the flammability of ordinary materials and must be avoided in occupied workplaces.

Engineering controls

Use only with adequate ventilation. Where oxygen is transferred, ensure the working atmosphere stays at 20.9 % ± 2 % O_2. Use calibrated O_2 monitors in oxygen-storage and use areas.

Personal protective equipment (PPE)

Eye / Face	Safety glasses with side shields. Face shield and welding helmet (appropriate shade) when cutting/welding.
Hands	Clean cotton or leather gloves free of oil/grease. Insulated gloves when handling cold cylinders.
Body	Cotton or wool overalls (NOT synthetic). Anti-static footwear free of oil/grease. Remove oxygen-soaked clothing immediately and air for 30 minutes before re-use.
Respiratory	Not normally required.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Colourless compressed gas.
Odour	Odourless.
pH	Not applicable.
Boiling Point	–183 °C
Melting / Freezing Point	–218.8 °C
Flash Point	Not applicable (non-flammable but strongly supports combustion).
Flammability	Non-flammable; vigorously supports combustion.
Vapour Pressure	Cylinder pressure typically ~200 bar at 15 °C.
Vapour Density	1.10 (air = 1) — slightly heavier than air.
Solubility in Water	Slightly soluble.
Auto-Ignition Temperature	Not applicable.
Oxidising Properties	Strong oxidiser — vigorously supports combustion of fuels, oils, greases and many materials normally considered non-flammable.

Volatiles	100 %

10. STABILITY AND REACTIVITY

Reactivity	Strong oxidiser. Reacts vigorously with fuels, oils, greases, organic materials, finely-divided metals and many otherwise inert substances.
Chemical stability	Stable under recommended storage conditions.
Hazardous reactions	Adiabatic compression of oxygen against a non-clean valve or fitting can cause spontaneous ignition. Mixing high-pressure oxygen with hydrocarbons (oil, grease, gasoline, hydraulic fluid) is extremely dangerous — can detonate.
Conditions to avoid	Heat, sparks, open flames, oily/greasy surfaces, hydrocarbon lubricants, finely-divided combustible dusts, contact with flammable gases.
Incompatible materials	All flammable materials, hydrocarbons (oils, greases, fuels), powdered metals, reducing agents, acetylene, hydrogen, hydrazine, ammonia. Most plastics and rubbers are unsuitable for oxygen service.
Hazardous decomposition products	None.

11. TOXICOLOGICAL INFORMATION

Acute toxicity — inhalation	Prolonged inhalation of high-concentration oxygen (> 75 % at normobaric pressure for > 24 h) can cause pulmonary irritation. At normal atmospheric levels (≈ 21 %), oxygen is not toxic — it is essential for life.
Skin / Eye irritation	Not irritating to skin or eye. Liquid oxygen will cause cold burns.
Sensitisation	Not classified.
Carcinogenicity	Not classified.
Mutagenicity	Not classified.
Reproductive toxicity	Not classified.
STOT	Prolonged exposure to elevated partial pressures may cause respiratory effects.
Aspiration	Not classified.

12. ECOLOGICAL INFORMATION

Ecotoxicity	Oxygen is essential to most aquatic and terrestrial life — no adverse ecological effects.
Persistence and degradability	Naturally cycled through photosynthesis / respiration.
Bioaccumulative potential	Not applicable.
Mobility in soil	Volatile — evaporates.
Other adverse effects	Not an ozone-depleting substance; not a greenhouse gas.

13. DISPOSAL CONSIDERATIONS

Waste disposal	Return cylinders to Puregas or an authorised gas reseller for safe discharge and disposal of residual product. Do not dispose of cylinders to general or scrap-metal waste.
Legislation	Disposal must comply with Commonwealth, State and local environmental-protection and waste-management legislation.

14. TRANSPORT INFORMATION

CLASSIFIED AS DANGEROUS GOODS BY THE CRITERIA OF THE ADG CODE.

	Land (ADG)	Sea (IMDG/IMO)	Air (IATA/ICAO)
UN Number	1072	1072	1072
Proper Shipping Name	OXYGEN, COMPRESSED	OXYGEN, COMPRESSED	OXYGEN, COMPRESSED
Transport Hazard Class	2.2 (5.1 sub-risk)	2.2 (5.1 sub-risk)	2.2 (5.1 sub-risk)
Packing Group	Not allocated	Not allocated	Not allocated
Hazchem / EmS	2SE	F-C, S-W	—

Pictograms: Class 2.2 (Non-Flammable Compressed Gas) with Class 5.1 sub-risk (Oxidising Agent) — both labels required by ADG Code where package quantity triggers sub-risk placarding.

Special precautions: ensure cylinders are secured upright with valves protected; outlet relief devices must not be obstructed; segregate from flammable gases by at least 5 m or a fire-rated barrier. Comply with ADG Code.

15. REGULATORY INFORMATION

Safe Work Australia	Classified hazardous under SWA criteria.
Poisons Schedule	No SUSMP schedule allocated.
Inventory listings	AICS: listed.
Other Australian legislation	AS 4332 (Storage and handling of gases in cylinders); AS 4839 (Safe use of portable and mobile oxy-fuel gas systems); WHS Regulations; ADG Code.

16. OTHER INFORMATION

Critical safety information	Never use oxygen in place of compressed air. Never pressurise or atomise materials with oxygen. Keep all oxygen fittings oil- and grease-free.
Application method	Oxygen regulator of suitable rating fitted to cylinder, with flashback arrestors fitted in oxy-fuel cutting/welding systems per AS 4839.
PPE guidance	PPE recommendations are a guide only. Final selection should consider method of application, working environment and engineering controls.
Health effects from exposure	At normobaric pressures and ambient concentrations, oxygen has no adverse health effect. Prolonged exposure to elevated partial pressures may cause pulmonary effects.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
ADG	Australian Dangerous Goods Code
AICS	Australian Inventory of Chemical Substances
AS 4332	Australian Standard — Storage and handling of gases in cylinders
CAS #	Chemical Abstracts Service registry number
EC No.	European Community Number
GHS	Globally Harmonised System of Classification and Labelling of Chemicals
IATA	International Air Transport Association
ICAO	International Civil Aviation Organisation
IMDG/IMO	International Maritime Dangerous Goods Code / International Maritime Organisation
SCBA	Self-Contained Breathing Apparatus

STEL	Short-Term Exposure Limit
STOT	Specific Target Organ Toxicity
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
SWA	Safe Work Australia
TWA	Time-Weighted Average

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End of Safety Data Sheet. The information in this SDS is provided in good faith and is believed to be accurate at the date of issue. No warranty is given as to its completeness or accuracy. The user is responsible for satisfying themselves as to the suitability and completeness of this information for their own particular use.