

Oxygen Oxygen is a very abundant, highly reactive gas, making up 20.8% of the earth's atmosphere. It readily forms compounds (usually oxides) with most elements. Oxygen has not always been present in the atmosphere, appearing 2.5 billion years ago after a billion years of anaerobic organism dominance. An allotrope of oxygen is ozone (O₃) which protects the biosphere in a layer of the atmosphere where UV-B and UV-C radiation is absorbed, known as the ozone layer.

High purity oxygen is notoriously difficult to produce from air separation and usually requires multiple distillation stages, or to be produced by the electrolysis of pure water.

Specifications

	Ultra High Purity	High Purity
BOC Material Code	224	024
O ₂	≥99.995%	≥99.9%
H ₂ O	<4 ppm	<25 ppm
H ₂	<1 ppm	-
C _n H _m	<0.1 ppm	-
CO + CO ₂	<2 ppm	-
N ₂	<10 ppm	<500 ppm (N ₂ + Ar)
Ar	<30 ppm	-
Cylinder Size - Pressure	G2 - 200 bar	G - 137 bar, MAN15 - 175 bar

Physical Properties

Property	Value
CAS Registry Number	7782-44-7
Molecular Weight	31.999 g/mol
Boiling Point (at 1.013 bar)	-182.98°C / 90.17 K
Density (at 1.013 bar, 15°C)	1.354 kg/m ³
Vapour Pressure, 0°C	-
Vapour Pressure, 20°C	-
Flammability in air (% volume)	Non-combustible
Specific Volume (at 1.013 bar, 15°C)	0.844 m ³ /kg

Dangerous Goods Information

UN Number	Dangerous Goods Class
1072	2.2, 5.1
OXYGEN, COMPRESSED	



Compatibility

Legend: ✓ Good, • Fair, ✗ Avoid

Aluminium	✓	Copper	✓	Polyethylene	✓
Buna® N	•	Kel-F®	✓	PVC	✓
Brass	✓	Monel®	✓	Stainless steel	•
Butyl rubber	•	Neoprene®	•	Teflon®	✓
Carbon steel	✓	Nylon®	✓	Viton®	•

Industries



Recommended
Cylinder Regulator

BASELINE®	Max. Outlet Pressure		Outlet	Product Code	
	Bar	psi		Brass	Stainless Steel
Single Stage	1	15	1/4"	S5724-516-255	M5730-507-255
			1/8"	M5724-515-255	M5730-506-255
	3.5	50	1/4"	S5725-516-255	M5731-507-255
			1/8"	M5725-515-255	M5731-506-255
	7	100	1/4"	M5726-516-255	M5732-507-255
			1/8"	M5726-515-255	M5732-506-255
	10.5	150	1/4"	S5727-516-255	M5733-507-255
			1/8"	M5727-515-255	M5733-506-255
	17	250	1/4"	M5728-516-255	M5734-507-255
			1/8"	M5728-515-255	M5734-506-255
	35	500	1/4"	M5729-516-255	M5735-507-255
			1/8"	M5729-515-255	M5735-506-255
Dual Stage	1	15	1/4"	S5628-516-255	M5633-507-255
			1/8"	M5628-515-255	M5633-506-255
	3.5	50	1/4"	S5629-516-255	M5634-507-255
			1/8"	M5629-515-255	M5634-506-255
	7	100	1/4"	M5630-516-255	M5635-507-255
			1/8"	M5630-515-255	M5635-506-255
	10.5	150	1/4"	S5631-516-255	M5636-507-255
			1/8"	M5631-515-255	M5636-506-255
	17	250	1/4"	S5632-516-255	M5637-507-255
			1/8"	M5632-515-255	M5637-506-255

Applications

Analytical

- Calibration gas

Food and Beverage

- Transportation of live fish and seafoods
- Enrichment of air during fermentation
- Modified Atmosphere Packaging (MAP)

Manufacturing

- Formation of silicon dioxide and metal oxide
- Etchant for photoresist
- Etching silicon
- Welding
- Brazing
- Glass blowing
- Tube sealing
- Cutting
- Optical fibre production
- Chemical synthesis
- Supplement or replacement for air in burners
- Flame sealing of glass ampoules
- Comburent in space propulsion
- Metal treating laser applications
- In conjunction with High Purity Methane in Advanced Gas Cooled (AGR) nuclear reactors

Utilities

- Sewage treatment
- Production of breathable atmospheres

