

# Breathing Oxygen

## 1 IDENTIFICATION OF THE SUBSTANCE/ PREPARATION AND OF THE COMPANY

<b>Product name</b>	Oxygen
<b>Chemical formula</b>	O <sub>2</sub>
<b>Company identification</b>	see overleaf
<b>Emergency phone Nos</b>	0800 111 333

## 2 COMPOSITION/INFORMATION ON INGREDIENTS

<b>Substance/Preparation</b>	Substance
<b>Components/Impurities</b>	Contains no other components or impurities which will influence the classification of the product.
<b>CAS Nr</b>	07782-44-7
<b>EEC Nr (from EINECS)</b>	2319569
<b>Specifications</b>	See overleaf

## 3 HAZARDS IDENTIFICATION

<b>Hazards identification</b>	Compressed gas Oxidant. Strongly supports combustion. May react violently with combustible materials.
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## 4 FIRST AID MEASURES

<b>Inhalation</b>	Continuous inhalation of concentrations higher than 75% may cause nausea, dizziness, respiratory difficulty and convulsion.
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## 5 FIRE FIGHTING MEASURES

<b>Specific hazards</b>	Supports combustion Non flammable Exposure to fire may cause containers to rupture/explode. Inform Fire Brigade
<b>Hazardous combustion products</b>	None
<b>Suitable extinguishing media</b>	All known extinguishants can be used.
<b>Specific methods</b>	If possible, stop flow of product. Move container away or cool with water from a protected position.
<b>Special protective equipment for fire fighters</b>	None

## 6 ACCIDENTAL RELEASE MEASURES

<b>Personal precautions</b>	Evacuate area. Ensure adequate air ventilation. Eliminate ignition sources. Post warning notices (including no smoking).
<b>Environmental precautions</b>	Try to stop release. Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous.
<b>Clean up methods</b>	Ventilate area.

## 7 HANDLING AND STORAGE

<b>Handling and storage</b>	Use no oil or grease. Open valve slowly to avoid pressure shock. Segregate from
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flammable gases and other flammable materials in store. Suck back of water into the container must be prevented. Do not allow backfeed into the container. Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact your gas supplier if in doubt. Keep away from ignition sources (including static discharges). Refer to supplier's container handling instructions. Keep container below 50°C in a well ventilated place.

## 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

<b>Personal protection</b>	Do not smoke while handling product. Wear suitable hand, body and head protection. Avoid oxygen rich (>21%) atmospheres. Ensure adequate ventilation. Clothing impregnated with oxygen should be ventilated by walking in fresh open air for 2 minutes.
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## 9 PHYSICAL AND CHEMICAL PROPERTIES

<b>Molecular weight</b>	32
<b>Melting point</b>	-219°C
<b>Boiling point</b>	-183°C
<b>Critical temperature</b>	-118°C
<b>Relative density, gas</b>	1.1 (air=1)
<b>Relative density, liquid</b>	1.1 (water=1)
<b>Vapour Pressure 20°C</b>	Not applicable
<b>Solubility mg/l water</b>	39 mg/l
<b>Appearance/Colour</b>	Colourless gas
<b>Odour</b>	No odour warning properties
<b>Autoignition temperature</b>	Not applicable
<b>Other data</b>	Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level.

## 10 STABILITY AND REACTIVITY

<b>Stability and reactivity</b>	May react violently with combustible materials. May react violently with reducing agents. Violently oxidises organic material.
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## 11 TOXICOLOGICAL INFORMATION

<b>General</b>	Oxygen toxicity can occur as manifested by: Retrolental fibroplasia in premature infants exposed to oxygen concentrations greater than 40%. Central nervous system toxicity including dizziness, convulsions and loss of consciousness after only 2-3 hours of exposure to pure oxygen at 2 or more atmospheres, e.g. sports and deep sea diving. Retrosternal soreness associated with coughing and breathing difficulties, made worse by smoking and exposure to cold air after breathing pure oxygen at atmospheric pressure for several hours.
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**12 ECOLOGICAL INFORMATION**

**General** No ecological damage caused by this product.

**13 DISPOSAL CONSIDERATIONS**

**General** To atmosphere in a well ventilated place.  
Do not discharge into any place where its accumulation could be dangerous.  
Contact supplier if guidance is required.

**14 TRANSPORT INFORMATION**

**UN Nr** 1072  
**Class/Div** 2.2  
**Subsidiary risk** 5.1  
**ADR/RID Item Nr** 2,1a  
**ADR/RID Hazard Nr** 25  
**Tremcard Nr** 842  
**Labelling ADR** Label 2: non flammable non toxic gas  
Label 05: fire intensifying risk

**Other transport information**

Avoid transport on vehicles where the load space is not seperated from the driver's 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 that they are firmly secured and:

- cylinder valve is closed and not leaking
- valve outlet cap nut or plug (where provided) is correctly fitted
- valve protection device (where provided) is correctly fitted
- adequate ventilation.
- compliance with applicable regulations.

**15 REGULATORY INFORMATION**

**Number in Annex I of Dir 67/548** Not included in Annex 1.  
**EC Classification** Proposed by the industry  
O;R8A  
O  
8A  
9,17A  
**Labelling of cylinders**  
**- Symbols** Road transport symbols are used and selected according to the most stringent product classification - EC or ADR .  
Label 2: non flammable non toxic gas  
Label 05: fire intensifying risk.  
**- Risk phrases** R8A Strongly supports combustion.  
**- Safety phrases** S9 Keep container in well-ventilated place.  
S17A Keep away from combustible material, use no oil or grease.

**16 OTHER INFORMATION**

Ensure all national/local regulations are observed.

Ensure operators understand the hazard of oxygen enrichment.

Before using this product in any new process or experiment, a thorough material compatibility and safety study should be carried out. Do not use oxygen as a substitute for air, nitrogen or any other gas.

Always leak check cylinders when first collected, delivered or used using an approved leak detection fluid.

Details given in this document are believed to be correct at the time of going to press. Whilst proper care has been taken in the preparation of this document, no liability for injury or damage resulting from its use can be accepted.

For further safety information please refer to "Safe Under Pressure" and "Safe handling, storage and transport of industrial gas cylinders", both of which are available from your local BOC Gases outlet.

**NOTES**

- 1 Not all cylinder sizes are available from all locations.
- 2 The nominal contents in m<sup>3</sup> are as measured at 15°C and 1013mb pressure. Actual contents and weights of gas may vary about the nominal figures indicated.
- 3 The length includes an allowance of 70 mm for the cylinder valve.
- 4 This is the weight of the cylinder without gas but including the cylinder valve.  
Some cylinders manufactured to older standards may weigh more than this. Add the nominal weight of gas to obtain the weight of a full cylinder.

**CYLINDER CHARACTERISTICS**

Cylinder Code (see Note 1)	Outlet Connection	Nominal Contents (see Note 2) (m <sup>3</sup> )	Maximum Filled Pressure at 15°C (bar)	Nominal Weight of Gas (see Note 2) (kg)	Approx. Dimensions (see Note 3) (mm)	Approx. Cylinder Weight (see Note 4) (kg)
PW	Top outlet 5/8" BSP Female Right Hand Cone Recessed	11.9	230	16.1	1600 x 230	70

**GAS SPECIFICATION**

British Standard:	BS 2N3 1990
International Standard:	ISO 2046
Ministry of Defence Standard:	Defstan 16-1
USAF Standard:	MIL 0-27210
Typical Analysis:	Minimum purity – 99.5% Moisture content – less than 5 mg/m <sup>3</sup>

**CONTROL EQUIPMENT**

	Model	BOC Part No.	
Spindle key to open and close the cylinder valve	K5	3637	
Pressure regulator to control the supply of oxygen:	Up to 3.5 bar	0-3.5	M.Stage 3000 S.Stage 3020
	Up to 10 bar	0-10	3001 3021



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**For product and safety enquiries please phone**

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