

SECTION 1: Identification of the substance/mixture and the company/enterprise**1.1 Product identification**

Denomination	Oxygen
CAS number:	7782-44-7
EC number:	231-956-9
Substance number:	008-001-00-8
REACH registration number	Listed in Annex IV/V of Regulation 1907/2006/EC (REACH), exempt from registration

1.2 Identified pertinent uses of the substance or mixture and uses not recommended

Description/use Industrial and professional use in the field of welding and cutting.

1.3 Information on the safety data sheet supplier

Company name	OXYTURBO SpA
Address and state	Via Serio, 15 25015 – Desenzano d/Garda (BS) Italy
Telephone	+39.030.9911855
Fax	+39.030.9911271
E-mail of the person responsible for the safety data sheet	safety@oxyturbo.it

1.4 Emergency telephone number

List of Poison Control Centre telephone numbers in Italy

Bergamo	Papa Giovanni XXII Hospital	800883300
Florence	"Careggi" Hosp. Medical Toxicology Dept.	055-7947819
Foggia	Foggia Univ. Hosp.	0881-732326
Milan	Niguarda Ca' Granda Hosp.	02-66101029
Naples	"A. Cardarelli" Hosp.	081-7472870
Pavia	PCC National Centre of Toxicological Information	0382-24444
Rome	CAV "Bambino Gesù Pediatric Hospital"	06-68593726
Rome	PCC "Umberto I" Polyclinic	06-49978000
Rome	PCC "A. Gemelli" Polyclinic	06-3054343

SECTION 2: identification of hazards**2.1 Classification of the substance or mixture**

The product is classified as hazardous pursuant to the provisions of EC Regulation 1272/2008 (CLP) (as amended and updated).

The product therefore requires a safety data sheet in compliance with the provisions of EC Regulation 1907/2006 as amended and updated.

Hazard classification and indications:

Ox. Gas 1	H270
Press. Gas	H280

The complete text of the hazard indications (H) can be found in section 16 of the safety data sheet.

2.2 Elements of the label

Pictograms

(subject to application art. 33 CLP use the pictograms indicated in point 14. Information on Transport)

Warning**Hazard****Hazard indications:**

H270

May cause or intensify fire; oxidiser.

H280

Contains gas under pressure: may explode if heated.

Recommended cautions:

P210

Keep away from heat, hot surfaces, sparks, open flames or other ignition sources. No smoking.

P220

Keep away from clothing and other combustible materials.

P244

Keep valves and fittings free from oil and grease.

P370+P376

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

P410+P403

Protect from sunlight. Store in a well ventilated place.

P412

Do not expose to temperatures exceeding 50 °C/ 122 °F.

P501

Dispose of contents/container to a multi-collection centre.

2.3 Other hazards

Results of PBT and vPvB assessment: not applicable.

SECTION 3: composition/information on ingredients**3.1 Substances**

Identification	Concentration (% weight)	CAS No.	EC No.	EC Index No.	Classification 1272/2008 (CLP)
Oxygen	100	7782-44-7	231-956-9	008-001-00-8	Ox. Gas 1 H270, Press. Gas H280

Does not contain other components and/or impurities that influence the product classification.

SECTION 4: first aid measures**4.1 Description of first aid measures**

- Eye contact: adverse effects not expected from this product.
- Skin contact: adverse effects not expected from this product.
- Ingestion: ingestion is not considered a likely route of exposure.
- Inhalation: supply fresh air; consult doctor in case of symptoms.

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. Begin rescue breathing if breathing has stopped.

4.3 Indication of any immediate medical attention and special treatment needed

Follow doctor's orders for treatment.

SECTION 5: firefighting measures**5.1 Extinguishing media**Suitable extinguishing media: CO₂, extinguishing powder or water spray jet.Unsuitable extinguishing media: none.**5.2 Special hazards arising from the substance or mixture**

Feeds combustion. Exposure to fire may cause containers explode.

5.3 Advice for fire-fighters

Extinguish large fires with water spray jets or alcohol-resistant foam.

In the event of fire, use a self-contained breathing apparatus and suitable protective clothing.

If possible, stop flow of product. Move away from the container, limit the area and spray with water from a protected position until the container is cooled.

SECTION 6: accidental release measures

6.1 Personal precautions, protection equipment and emergency procedures

For those not intervening directly: ensure adequate air ventilation. Remove flammable sources. Evacuate area. Bear in mind that the gas is heavier than the air and therefore tends to settle in a layer on the ground. The containers can explode when exposed to heat sources.

For those intervening directly: wear protective clothing and personal protection equipment in order and follow the emergency procedures (see section 8). Intervene in the area with a self-contained breathing apparatus if it has not been proven that the atmosphere is breathable.

6.2 Environmental precautions

Try to stop release. Prevent from entering sewers, basements and workpits or any place where accumulation can be dangerous. See sections 12 and 13.

6.3 Methods and material for containment and cleaning up

Ventilate area.

6.4 Reference to other sections

See section 7 for information regarding safe handling.

See section 8 for information on personal protective equipment.

See section 13 for information regarding disposal.

SECTION 7: handling and storage

7.1 Precautions for safe handling

Open and handle containers with care. Do not use oil or grease in contact with the product. Store away from sources of heat. Do not smoke. Avoid collisions and friction.

7.2. Conditions for safe storage, including any incompatibilities

Store the gas in the original containers, kept well sealed, in a cool place far from heat sources (at a temperature lower than 50°C) and far from flames or sparks, including electrostatic charges.

Do not store near containers holding flammable materials (i.e. hydrogen, acetylene, etc.). Store segregated from warehouses where incompatible substances indicated in section 10 are stored.

7.3 Specific end uses

See section 1.2.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

OEL (Occupational Exposure Limit): data not available.

DNEL (Derived No Effect Level): data not available.

PNEC (Predicted No Effect Concentrations): data not available.

8.2 Exposure controls

8.2.1 Appropriate engineering controls

Avoid the formation of oxygen rich atmospheres (O₂>2%) by means of adequate aeration/ventilation.

Evaluate if control of the oxygen content in the environment is necessary.

8.2.1 Individual protection measures, e.g. personal protective equipment

The following means of protection are indicated:

Respiratory system: not required

Hands: wear safety gloves when handling loads (EN 388).

Eyes: protective goggles in accordance with EN 166 when using gas.

Skin: use appropriate hand, body and head protection when cutting or welding.

8.2.3 Environmental exposure controls
See point 13 of the SDS for information on disposal.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**9.1 Information on the fundamental physical and chemical properties**

a) Appearance	Gas
b) Odour	Odourless
c) Olfactory threshold	Not applicable
d) pH at 20°C	Not applicable
e) Melting point/freezing point	- 219 °C
f) Initial boiling point and boiling range	- 183 °C
g) Flash point	Not applicable
h) Evaporation rate	Not applicable to gases and gas mixtures
i) Flammability range (solids, gases)	Non-inflammable
j) Upper / lower flammability or explosion limits	Not applicable
k) Vapour pressure	Not applicable
l) Vapour density:	1.105 (air =1)
m) Relative density	1.141 (water=1)
n) Solubility	
	Water solubility 39 mg/L (15 °C, 1.103 bar)
	Lipophilicity Not determined
o) Partition ratio (n-octanol/water)	Not determined
p) Autoignition temperature	Not applicable
q) Decomposition temperature	No unique values available in scientific literature
r) Viscosity	Not determined
s) Explosive properties	Not applicable
t) Oxidising properties	Oxidising

9.2 Other information

Molecular weight: 32 g/mol
Critical temperature: -118.6 °C (50.43 bar)
Critical pressure: 5042.95 kPa

SECTION 10: STABILITY AND REACTIVITY**10.1 Reactivity**

Can react violently with flammable and reducing agents.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Reactions with reducing agents, flammable substances. Reactions in part very violent with bases and numerous classes of organic materials such as alcohols and amines.

10.4 Conditions to avoid

Avoid contact with flammable, combustible and reducing substances. Avoid contact with oils, greases and any source of ignition.

10.5 Incompatible materials

Combustible materials. Reducing agents. Keep equipment free from oil and grease. For additional information on compatibility refer to the latest version of ISO 11114.

10.6 Hazardous decomposition products

No known hazardous decomposition products.

SECTION 11: TOXICOLOGICAL INFORMATION**11.1 Information on toxicological effects**

- a) Acute toxicity: based on available data, the classification criteria are not met.
- b) Skin corrosion/skin irritation: does not have irritating effects.
- c) Serious eye damage/eye irritation: non irritant.
- d) Respiratory or skin sensitisation: no sensitising effects are known.
- e) Mutagenicity on germ cells: based on available data, the classification criteria are not met.
- f) Carcinogenicity: based on available data, the classification criteria are not met.
- g) Toxicity for reproduction: based on available data, the classification criteria are not met.
- h) Specific target organ toxicity (STOT) — single exposure: based on available data, the classification criteria are not met.
- i) Specific target organ toxicity (STOT) — repeated exposure: based on available data, the classification criteria are not met.
- j) Aspiration hazard: not applicable to gases and gas compounds.

SECTION 12: ECOLOGICAL INFORMATION**12.1 Toxicity**

No known ecological damage caused by this product.

12.2 Persistence and degradability

Not applicable to gases and gas mixtures.

12.3 Bioaccumulation potential

Substance is present in nature.

12.4 Mobility in soil

No further data available. Due to the high volatility, the product is unlikely to cause soil and water pollution.

12.5 Results of PBT and vPvB assessment

Not classified as PBT or vPvB.

12.6 Other adverse effects

No known ecological damage caused by this product.

SECTION 13: DISPOSAL CONSIDERATIONS**13.1 Waste treatment methods**

Do not discharge into any place where its accumulation could be dangerous. Discharge of in a well-ventilated location. Contact the supplier for correct container disposal.

European waste codes

- 16 05 04* gases in pressure vessels (including halons) containing dangerous substances
- 15 01 11* metal packaging containing dangerous solid porous matrices (e.g. asbestos), including empty pressure containers

SECTION 14: TRANSPORT INFORMATION

14.1 UN number: 1072

14.2 UN proper shipping name: COMPRESSED OXYGEN

14.3 Transport hazard class/es: 2.2 + 5.1



Labelling:

14.4 Packaging group: not applicable to class 2

14.5 Hazards for the environment: none**14.6 Special precautions for the users:**

- Avoid transport on vehicles where the loading area is not separate from the driver and passenger compartment.
- Ensure that the driver is informed of the potential risk of the load and that he or she knows what to do in the event of an accident or emergency.
- Exemption for transport unit (1.1.3.6 ADR) = category 3 = 1000 L of nominal capacity of the pressure vessel.
- Tunnel restriction code: E
- Sea transport: EmS: F-C, S-W
- Air transport: Packing instruction 200

14.7 Bulk transport in accordance with Annex II of MARPOL and the IBC code: Not applicable.**SECTION 15: REGULATORY INFORMATION****15.1 Health, safety and environmental standards and legislation specific for the substance or mixture**

The user is advised to check and comply with specific national, regional and local regulations regarding hazardous activities and environmental protection (e.g. liquid, solid and gaseous emissions) which are not covered by this document.

- Legislative Decree 81/08 and subsequent amendments - Occupational health and safety
- Legislative Decree 152/06 and subsequent amendments - Environmental regulations
- Legislative Decree 26 June 2015, n. 105 / DIRECTIVE 2012/18/EU: Category P4
- Sale and use restrictions: no restriction in accordance with annex XVII of EC Regulation 1907/2006 (REACH) as amended and updated.
- Substances on Candidate List (Art. 59 REACH): None.
- Substances subject to authorisation (Annex XIV REACH): None.

15.2 Chemical safety assessment

CSA does not need to be carried out for this product.

SECTION 16: OTHER INFORMATION**i) Indication of the modifications:**

Sections revised from the previous edition are highlighted with a black bar to the left of the text.

ii) Abbreviations and acronyms:

ADR:	The European Agreement concerning the International Carriage of Dangerous Goods by Road.
CAS:	Chemical Abstracts Service (division of the American Chemical Society).
CLP:	Classification, Labelling, Packaging.
DNEL:	Derived No-Effect Level.
EINECS:	European Inventory of Existing Commercial Chemical Substances.
LC50:	Lethal Concentration for 50% of the test population.
LD50:	Lethal Dose for 50% of the test population.
PNEC:	Predicted No Effect Concentration.
STEL:	Short-term exposure limit.
STOT:	Specific target organ toxicity.
VLE- 8 hours	concentration of the pollutant for an 8-hour working day.
VLE-short term	limit value above which exposition shall be avoided. Unless otherwise specified, it refers to a period of 15 minutes.
TLV-TWA	(Threshold Limit Value - Time-Weighted Average) = average time-weighted concentration on a conventional 8-hour working day and on 40 working hours per week, to which workers are assumed to be repeatedly exposed, day by day, for a whole working life, without negative effects.
TLV-STEL	(Threshold Limit Value – Short Time Exposition Limit) = concentration to which workers are assumed to be continuously exposed for short time without arising of irritation, chronic or

MAK	irreversible tissue damage and reduction of alertness. (Maximum Allowed Concentration) = is the maximum concentration of a chemical substance (gases, vapours or airborne particles) in working environment that does not give adverse effects to for a long time exposed people (8 hours daily or 40 weekly hours).
skin	the substance may be absorbed through the skin, included the mucosa.

iii) Main literature references and sources for data:

- Aerosol Directive 1975/324/EC, as amended
- European Parliament Regulation (EC) 1907/2006 (REACH)
- European Parliament Regulation (EC) 1272/2008 (CLP)
- The Merck Index. Ed. 10
- Handling Chemical Safety
- Niosh - Registry of Toxic Effects of Chemical Substances
- INRS - Fiche Toxicologique
- Patty - Industrial Hygiene and Toxicology
- N.I. Sax - Dangerous properties of Industrial Materials-7 Ed., 1989
- ECDIN - Environmental Chemicals Data and Information Network - Joint Research Centre, Commission of the European Communities
- ACGIH - Threshold Limit Values - 2011 edition
- Supplier Safety Data Sheets.

iv) Classification and procedure used to derive it in compliance with Regulation (EC) 1272/2008 [CLP] in relation to mixtures:

The product is a substance

v) The text of the hazard indications (H) mentioned in sections 2-3 of the safety data sheet

Ox. Gas 1	Combustible gas, hazard category 1
	Press. Gas – Gas under pressure

H270 – May cause or intensify fire; oxidiser.

H280 – Contains gas under pressure: can explode if heated

vi) Indications on training:

Personnel in charge of handling and using the product must be instructed on the specific risks and the safety measures.

Written references: See specific technical instruction indicated on the product.

Technical contact centre: Telephone +39.030.9911855

vii) Further information:

The information contained on this safety data sheet is based on our current knowledge of health, safety and the environment. The purpose of it is to allow the professional user of the product to identify preventive and protective behaviour useful for the purposes of safe operation.

The product user, prior to any use other than the foreseen use, must verify whether other information is required, in any case presuming observance of the pertinent laws and good operating practice.

We will not be liable for any improper use of the product.

The product label or safety data sheet should be presented in the event of any necessary medical treatment.