



SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier	
Trade name	OXYGEN, COMPRESSED
Registration-No.	Listed in Annex IV / V REACH, exempted from registration.
Chemical formula	O ₂
1.2. Relevant identified uses of the substance or mixture and uses advised against	
Relevant identified uses	Industrial and professional. Perform risk assessment prior to use. Water treatment. Laboratory use. Test gas/Calibration gas. Laser gas. Shield gas for welding processes. Use for manufacture of electronic/photovoltaic components. Contact supplier for more information on uses.
1.3 Company details	
Company Name	SYC Cylinders Europe S,A.
Telephone	(+34) 933363617

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture	
Hazard Class and Category Code Regulation CE 1272/2008 (CLP)	<ul style="list-style-type: none"> Physical hazards: <ul style="list-style-type: none"> □ Oxidizing gases - Category 1 - Danger - (CLP : Ox. Gas 1) - H270 □ Gases under pressure - Compressed gas - Warning - (CLP : Press. Gas) - H280
2.2. Label elements - Labelling Regulation EC : 1272/2008 (CLP)	
Hazard pictograms	 GHS04  GHS03
Hazard statements	H270 : May cause or intensify fire; oxidiser. H280 : Contains gas under pressure; may explode if heated.
Precautionary statements	<ul style="list-style-type: none"> Prevention <ul style="list-style-type: none"> ○ P244 : Keep valves and fittings free from oil and grease ○ P220 : Keep away from combustible materials. Response <ul style="list-style-type: none"> ○ P370+P376 : In case of fire: Stop leak if safe to do so. Storage <ul style="list-style-type: none"> ○ P403 : Store in a well-ventilated place.
Other hazards	None.

SECTION 3: Composition/information on ingredients

3.1. Substance / Mixture	
Substance name	Oxygen
CAS N°	7782-44-7
EC N°	231-956-9
Classification	O; R8 Ox. Gas 1 (H270) Press. Gas Compressed (H280)
Other information	Contains no other components or impurities which will influence the classification of the product. Full text of R-phrases see section 16. Full text of H-statements see section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures	
General information	<ul style="list-style-type: none"> • Inhalation: Remove victim to uncontaminated area. • Skin contact: Adverse effects not expected from this product. • Eye contact: Adverse effects not expected from this product. • Ingestion: Ingestion is not considered a potential route of exposure.
4.2. Most important symptoms and effects, both acute and delayed	
General information	Continuous inhalation of concentrations higher than 75% may cause nausea, dizziness, respiratory difficulty and convulsion.
4.3. Indication of any immediate medical attention and special treatment needed	
General information	None.

SECTION 5: Firefighting measures

5.1. Extinguishing media	
Suitable extinguishing media	Water spray or fog.
Unsuitable extinguishing media	Do not use water jet to extinguish.
5.2. Special hazards arising from the substance or mixture	
Specific hazards	Exposure to fire may cause containers to rupture/explode. Supports combustion.
5.3. Advice for fire-fighters	
Specific methods	Use fire control measures appropriate for the surrounding fire. Exposure to fire and heat radiation may cause gas receptacles to rupture. Cool endangered receptacles with water spray jet from a protected position. Prevent water used in emergency cases from entering sewers and drainage systems. If possible, stop flow of product. Use water spray or fog to knock down fire fumes if possible.

Special protective equipment for fire fighters

Standard protective clothing and equipment (Self Contained Breathing Apparatus) for fire fighters. Standard EN 137 - Self-contained open-circuit compressed air breathing apparatus with full face mask. Standard EN 469 - Protective clothing for firefighters. Standard - EN 659: Protective gloves for firefighters.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General information

1. Try to stop release.
2. Ensure adequate air ventilation.
3. Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous. Monitor concentration of released product.
4. Eliminate ignition sources.
5. Evacuate area.

6.2. Environmental precautions

General information

Try to stop release.

6.3. Reference to other sections

General information

See also sections 8 and 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Safe use of the product

Only experienced and properly instructed persons should handle gases under pressure.
 The substance must be handled in accordance with good industrial hygiene and safety procedures.
 Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact your gas supplier if in doubt.
 Use no oil or grease.
 Do not smoke while handling product.
 Keep equipment free from oil and grease.
 Use only oxygen approved lubricants and oxygen approved sealings.
 Use only with equipment cleaned for oxygen service and rated for cylinder pressure.
 Ensure the complete gas system was (or is regularly) checked for leaks before use.
 Consider pressure relief device(s) in gas installations.

Safe handling of the gas receptacle

Refer to supplier's container handling instructions.
 Suck back of water into the container must be prevented.
 Open valve slowly to avoid pressure shock.
 Do not allow backfeed into the container.
 Protect cylinders from physical damage; do not drag, roll, slide or drop.
 When moving cylinders, even for short distances, use a cart (trolley, hand truck, etc.) designed to transport cylinders. Leave valve protection caps in place until the container has been secured against either a wall or bench or placed in a container stand and is ready for use.
 If user experiences any difficulty operating cylinder valve discontinue

use and contact supplier.
 Never attempt to repair or modify container valves or safety relief devices. Damaged valves should be reported immediately to the supplier.
 Keep container valve outlets clean and free from contaminants particularly oil and water.
 Replace valve outlet caps or plugs and container caps where supplied as soon as container is disconnected from equipment.
 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.
 Never use direct flame or electrical heating devices to raise the pressure of a container.
 Do not remove or deface labels provided by the supplier for the identification of the cylinder contents.

7.2. Conditions for safe storage, including any incompatibilities

General information

- Keep container below 50°C in a well ventilated place.
- Segregate from flammable gases and other flammable materials in store.
- Containers should be stored in the vertical position and properly secured to prevent toppling. Stored containers should be periodically checked for general condition and leakage. Container valve guards or caps should be in place.
- Store containers in location free from fire risk and away from sources of heat and ignition. Containers should not be stored in conditions likely to encourage corrosion.
- Keep away from combustible materials.

7.3. Specific end use(s)

General information

None.

SECTION 8: Exposure controls/personal protection

8.1. Exposure controls

Appropriate engineering controls

Systems under pressure should be regularly checked for leakages. Avoid oxygen rich (>23,5%) atmospheres.
 Gas detectors should be used when oxidising gases may be released. Provide adequate general and local exhaust ventilation.
 Consider work permit system e.g. for maintenance activities.

Individual protection measures, e.g. personal protective equipment

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: PPE compliant to the recommended EN/ISO standards should be selected.

- Eye/face protection
 - Wear safety glasses with side shields. **Standard EN 166 - Personal eye-protection.**
- Skin protection
 - Hand protection: Wear working gloves when handling gas containers. **Standard EN 388 - Protective gloves** against mechanical risk.
 - Others: Wear safety shoes while handling containers. **Standard EN ISO 20345 - Personal protective equipment** - Safety footwear.
- Thermal hazards : None necessary.
- Environmental exposure controls: None necessary.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

General information

- Appearance: Gas.
- Physical state at 20°C / 101.3kPa: Gas.
- Colour: Colourless.
- Odour : No odour warning properties.
- Odour threshold: Odour threshold is subjective and inadequate to warn for overexposure.
- pH value: Not applicable.
- Molar mass [g/mol]: 32
- Melting point [°C]: -219
- Boiling point [°C]: -183
- Critical temperature [°C]: -118
- Flash point [°C]: Not applicable for gases and gas-mixtures.
- Evaporation rate (ether=1): Not applicable for gases and gas-mixtures.
- Flammability range [vol% in air]: Non flammable.
- Vapour pressure [20°C]: Not applicable.
- Relative density, gas (air=1): 1,1
- Relative density, liquid (water=1): 1,1
- Solubility in water [mg/l]: 39
- Partition coefficient n-octanol/water [log Kow]: Not applicable for inorganic gases.
- Other data: Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level.

SECTION 10: Stability and reactivity

10.1. Reactivity

General information No reactivity hazard other than the effects described in sub-sections below.

10.2. Chemical stability

General information Stable under normal conditions.

10.3. Possibility of hazardous reactions

General information Violently oxidises organic material.

10.4. Conditions to avoid

General information None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

General information Consider the potential toxicity hazard due to the presence of chlorinated or fluorinated polymers in high pressure (> 30 bar) oxygen lines in case of combustion.
May react violently with combustible materials.
May react violently with reducing agents.
Keep equipment free from oil and grease.
For additional information on compatibility refer to ISO 11114.

10.6. Hazardous decomposition products

General information None.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicity No known toxicological effects from this product.

SECTION 12: Ecological information

12.1. Toxicity

General information No ecological damage caused by this product.

12.2. Results of PBT and vPvB assessment

General information Not classified as PBT or vPvB.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

General information

- May be vented to atmosphere in a well ventilated place.
- Do not discharge into any place where its accumulation could be dangerous.
- Refer to the EIGA code of practice Doc.30 “Disposal of Gases”, downloadable at <http://www.eiga.org> for more guidance on suitable disposal methods.

SECTION 14: Transport information

14.1. Transport information

ONU number 1072

Transport hazard class(es)



5.1 : Oxidizing substances



2.2 : Non-flammable, non-toxic gases

Environmental hazards None.

14.2. Special precautions for user

General information

- Avoid transport on vehicles where the load space is not separated from the driver's compartment.

General information

- 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 cylinder valve is closed and not leaking.
- Ensure valve outlet cap nut or plug (where provided) is correctly fitted.
- Ensure valve protection device (where provided) is correctly fitted.

SECTION 15: Regulatory information

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

Chemical safety assessment

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

SECTION 16: Other information

Indication of changes

Revised safety data sheet in accordance with commission regulation (EU) No 453/2010.

Training advice

Ensure operators understand the hazard of oxygen enrichment.

Labelling EC 67/548 or EC 1999/45



O: Oxidizing

R Phrase(s): R8 : Contact with combustible material may cause fire.
S Phrase(s): S17 : Keep away from combustible material.

Information source

This Safety Data Sheet has been established in accordance with the applicable European Union legislation.

Other Advice

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.
Before using this product in any new process or experiment, a thorough material compatibility and safety study should be carried out.

Responsibilities

The base of available information at the time of going to press and cover the most common applications, without guaranteeing that its content is sufficient in all cases and situations.
Its observance does not exclude the fulfillment of the in force regulation in every moment.

Description of changes

Adjustment to current regulations.