



## SAFETY DATA SHEET

In compliance with EC Regulations No.: 1907/2006, 830/2015 and 1272/2008 (CLP).

Date last modified: 30 October 2020 - Version 6.0

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

#### 1.1 Product Identifier

**Product Name:** OXYGEN

**Product Code #:** 330202

**CAS No.:** 07782-44-7

**Chemical Formula:** O<sub>2</sub>

#### 1.2 Relevant identified uses of the substance or mixture and uses advised against

##### **Relevant identified uses**

**Industrial and professional uses only. Perform risk assessment prior to use.**

**Uses advised against:** This product is not recommended for any industrial, professional or consumer use other than the Intended Uses above and the instructions written in this Safety Data Sheet.

#### 1.3 Details of the supplier of the safety data sheet

##### **Company/undertaking identification**

##### **Supplier/Manufacturer:**

Marichem Marigases Hellas SA

Sfaktirias 64,

185 45 Piraeus,

Greece

Tel. No.: ++30 210 4148800

Fax No.: ++30 210 4133985

<http://www.marichem-marigases.com>

**e-mail:** [mail@marichem-marigases.com](mailto:mail@marichem-marigases.com)

#### 1.4 Emergency telephone number

Tel. No.: ++30 210 4148800 (including working hours)

##### Emergency Information:

Inside U.S. and Canada: (800)-424-9300 (CHEMTREC)

Outside U.S. and Canada: 1-703-527-3887 (CHEMTREC)

National Emergency Centre (Greece): ++30 210 7793777

## 2. HAZARDS IDENTIFICATION

### 2.1. Classification of the substance or mixture

#### Hazard Class and Category Code Regulation EC 1272/2008 (CLP)

##### Physical hazards

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:



Signal word: Danger

##### Hazard Statements

H270 - May cause or intensify fire; oxidizer.

H280 - Contains gas under pressure; may explode if heated.

##### Precautionary statements

##### Prevention

P244 - Keep valves and fittings free from oil and grease

P220 - Keep away from combustible materials.

##### Response

P370+P376 - In case of fire: Stop leak if safe to do so.

##### Storage

P403 - Store in a well-ventilated place.

### 2.3. Other hazards

None.

**Mixture/substance classification and labelling according to Directive 67/548/EEC, European Dangerous Preparations Directive (1999/45/EC), European Regulation 648/2004 and their amendments.**

Symbol: O



**O: Oxidising**

R-phrases: R8: Contact with combustible material may cause fire.

S-phrases: S17: Keep away from combustible material.

**3. COMPOSITION / INFORMATION ON INGREDIENTS**

**3.1 Chemical Composition:**

Substance	CAS Number	Proportion	Classification*
Oxygen (O <sub>2</sub> )	07782-44-7	100%	H270; H280

Impurities/Components. Contains no other components, which will influence the classification of the product.

\*See section 16 for the full text of the Hazard Code(s) declared above.

Occupational Exposure Limits, if available, are listed in section 8.

**4. FIRST AID MEASURES**

**4.1. Description of first aid measures**

**First Aid General Information**

Remove victim to uncontaminated area.

**First Aid Inhalation**

Remove victim to uncontaminated area.

**First Aid Skin / Eye**

Adverse effects not expected from this product.

**First Aid Ingestion**

Ingestion is not considered a potential route of exposure.

**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.

**4.3. Indication of any immediate medical attention and special treatment needed**

None.

## 5. FIRE FIGHTING MEASURES

### 5.1. Extinguishing media

#### Suitable extinguishing media

All known extinguishants can be used.

### 5.2. Special hazards arising from the substance or mixture Specific hazards

Exposure to fire may cause containers to rupture/explode. Supports combustion.

#### Hazardous combustion products

None.

### 5.3. Advice for fire-fighters

#### Specific methods

If possible, stop flow of product. Move container away or cool with water from a protected position.

#### Special protective equipment for fire-fighters

None.

## 6. ACCIDENTAL RELEASE MEASURES

### 6.1. Personal precautions, protective equipment and emergency procedures

Evacuate area. Ensure adequate air ventilation. Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous. Eliminate ignition sources. Monitor concentration of released product.

### 6.2. Environmental precautions

Try to stop release.

### 6.3. Methods and material for containment and cleaning up

Ventilate area.

### 6.4. Reference to other sections

See also sections 8 and 13.

## 7. HANDLING AND STORAGE

### 7.1. Precautions for safe handling

Use no oil or grease. Suck back of water into the container must be prevented. 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 handling instructions. Purge system with dry inert gas (e.g. helium or nitrogen) before gas is introduced and when system is placed out of service. Use only with equipment cleaned for oxygen service and rated for cylinder pressure. Do not smoke while handling product. Only experienced and properly instructed persons should handle gases under pressure. Protect cylinders from physical damage; do not drag, roll, slide or drop. 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. 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. Ensure the complete gas system has been (or is regularly) checked for leaks before use. If user experiences any difficulty operating cylinder valve discontinue use and contact supplier. Close container valve after each use and when empty, even if still connected to equipment. Never attempt to repair or modify container valves or safety relief devices. Damaged valves should be reported immediately to the supplier. Replace valve outlet caps or plugs and container caps where supplied as soon as container is disconnected from equipment. Keep container valve outlets clean and free from contaminants particularly oil and water. Never attempt to transfer gases from one cylinder/container to another. Use only oxygen approved lubricants and oxygen approved sealings. Keep equipment free from oil and grease. Open valve slowly to avoid pressure shock. Do not allow backfeed into the container. The substance must be handled in accordance with good industrial hygiene and safety procedures.

### **7.2. Conditions for safe storage, including any incompatibilities**

Secure cylinders to prevent them from falling. Segregate from flammable gases and other flammable materials in store. Keep container below 50°C in a well ventilated place. Observe all regulations and local requirements regarding storage of containers. Containers should not be stored in conditions likely to encourage corrosion. Containers should be stored in the vertical position and properly secured to prevent falling over. Stored containers should be periodically checked for general conditions 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. Keep away from combustible materials.

### **7.3. Specific end use(s)**

None.

## **8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

### **8.1. Control parameters**

No occupational exposure limit.

### **8.2. Exposure controls**

#### **Appropriate engineering controls**

Product to be handled in a closed system. The substance must be handled in accordance with good industrial hygiene and safety procedures. Consider work permit system e.g. for maintenance activities. Systems under pressure should be regularly checked for leakages. Provide adequate general or local ventilation. Gas detectors should be used when quantities of oxidising gases may be released.

#### **Personal protective equipment**

##### **Eye and face protection**

Wear eye protection to EN 166 when using gases.

##### **Skin protection**

##### **Other protection**

Wear suitable hand, body and head protection. Wear goggles with suitable filter lenses when use is cutting/welding. Avoid oxygen rich (>23,5%) atmospheres. Wear leather safety gloves and safety shoes when handling cylinders.

##### **Respiratory protection**

Not required.

##### **Thermal hazards**

Not required.

## **Environmental Exposure Controls**

Specific risk management measures are not required beyond good industrial hygiene and safety procedures. Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas treatment.

# **9. PHYSICAL AND CHEMICAL PROPERTIES**

## **9.1. Information on basic physical and chemical properties**

### **General information**

**Appearance/Colour:** Colourless gas.

**Odour:** None.

**Melting point:** -219 °C

**Boiling point:** -183 °C

**Flash point:** Not applicable for gases and gas mixtures.

**Flammability range:** Non flammable.

**Vapour Pressure 20 °C:** Not applicable.

**Relative density, gas:** 1.1

**Solubility in water:** 39 mg/l

**Autoignition temperature:** Not applicable.

### **Explosive properties:**

Explosive acc. EU legislation: Not explosive.

Explosive acc. transp. reg.: Not explosive.

**Oxidising properties:** Oxidiser.

**Molecular weight:** 32 g/mol

**Critical temperature:** -118 °C

**Relative density, liquid:** 1.1

## **9.2. Other information**

Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level.

# **10. STABILITY AND REACTIVITY**

## **10.1. Reactivity**

Unreactive under normal conditions.

## **10.2. Chemical stability**

Stable under normal conditions.

## **10.3. Possibility of hazardous reactions**

Violently oxidises organic material.

## **10.4. Conditions to avoid**

Consider the potential toxicity hazard due to the presence of chlorinated or fluorinated polymers in high pressure (>30 bars) oxygen lines in case of combustion.

## **10.5. Incompatible materials**

Combustible materials. Reducing agents. Organic material. Keep equipment free from oil and grease. For material compatibility see latest version of ISO-11114.

## 10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## 11. TOXICOLOGICAL INFORMATION

### 11.1. Information on toxicological effects

#### General

No known toxicological effects from this product.

## 12. ECOLOGICAL INFORMATION

### 12.1. Toxicity

No ecological damage caused by this product.

### 12.2. Persistence and degradability

The substance is naturally occurring.

### 12.3. Bioaccumulative potential

Not applicable.

### 12.4. Mobility in soil

The substance is a gas, not applicable.

### 12.5. Results of PBT and vPvB assessment

Not classified as PBT or vPvB.

### 12.6. Other adverse effects

No ecological damage caused by this product.

## 13. DISPOSAL CONSIDERATIONS

### 13.1. Waste treatment methods

Vent 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.

**EWC Nr. 16 05 04\***

## 14. TRANSPORT INFORMATION

### 14.1 Proper shipping name: Oxygen, compressed

#### 14.2 LAND TRANSPORT

UN number:	1072	RID-class:	2.2
ADR class:	2.2	ADR/RID packing group:	N/A
Labeling:	Label 2.2: non flammable, non toxic gas. Label 5.1: Oxidising substance (Subsidiary Risk label)		

Packing group (Packing Instruction): P200

### 14.3 SEA TRANSPORT

UN number: 1072

IMDG class: 2.2

IMDG Subsidiary Risk label: 5.1

IMDG Packing group (Packing Instruction): P200

EmS: F-C, S-W

Labeling: Label 2.2: non flammable, non toxic gas.

Label 5.1: Oxidising substance (Subsidiary Risk label)

### 14.4 AIR TRANSPORT

UN number: 1072

ICAO class: 2.2

ICAO Subsidiary Risk label: 5.1

ICAO Packing group (Packing Instruction): P200

Labeling: Label 2.2: non flammable, non toxic gas.

Label 5.1: Oxidising substance (Subsidiary Risk label)

### 14.5 Other Transport Information

Avoid transport on vehicles where the load space is not separated from 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.

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, there is adequate ventilation, compliance with applicable regulations.

## 15. REGULATORY INFORMATION

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

If other regulatory information applies that is not already provided elsewhere in this safety data sheet, then it is described in this subsection.

### 15.2 Chemical Safety Assessment

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

## 16. OTHER INFORMATION

### 16.1 Full text of Hazard Code(s) referred in Section 3.

H270 - May cause or intensify fire; oxidizer.

H280 - Contains gas under pressure; may explode if heated.

### 16.2 Abbreviations and acronyms

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road).

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail).



IMDG: International Maritime Code for Dangerous Goods.  
IATA: International Air Transport Association.  
ICAO: International Civil Aviation Organization.  
bw: Body weight.  
Carc.: Carcinogenicity.  
CAS number: Chemical Abstracts Service number.  
CLP: Classification Labelling Packaging Regulation.  
CSA: Chemical Safety Assessment.  
CSR: Chemical Safety Report.  
DNEL: Derived No Effect Level.  
dw: Dry weight.  
EC number: EINECS and ELINCS number.  
EC: European Commission.  
EC50: Half maximal effective concentration.  
EINECS: European Inventory of Existing Commercial Chemical Substances.  
ELINCS: European List of Notified Chemical Substances.  
EmS: Emergency Schedule.  
ERC: Environmental Release Category.  
ES: Exposure scenario.  
food: oral feed.  
GHS: Globally Harmonized System of Classification and Labelling of Chemicals.  
Irrit.: Irritation.  
LC50: Lethal concentration, 50 %.  
LD50: Median Lethal dose.  
LOAEC: Lowest Observed Adverse Effect Concentration.  
LOAEL: Lowest Observed Adverse Effect Level.  
MK value: Maximum Concentration value.  
NCO: An international corporation that provides customer service contracting.  
NOAEC: No Observed Adverse Effect Concentration.  
NOAEL: No Observed Adverse Effect Level.  
NOEC: No Observed Effect Concentration.  
OECD: Organisation for Economic Cooperation and Development.  
PBT: Persistent, Bioaccumulative and Toxic.  
PNEC: Predicted No Effect Concentration.  
PROC: Process category.  
REACH: The Registration, Evaluation, Authorisation and Restriction of Chemicals.  
Resp.: Respiratory.  
Sens.: Sensitization.  
STEL value: Short Term Exposure Limit value.  
STOT RE: Specific target organ toxicity — repeated exposure.  
STOT SE: Specific target organ toxicity — single exposure.  
STOT: Specific Target Organ Toxicity.  
STP: Sewage Treatment Plant.  
SU: Sector of use.  
Tox.: Toxicity.  
TWA value: Time Weighted Average value.  
vPvB: Very Persistent and Very Bioaccumulative.

### **16.3 Notice to reader**

All information, instructions and statements contained in this Material Safety Data Sheet are compiled in accordance with European Directives, corresponding national legislation and on the basis of information given by our suppliers.

The information disclosed in this Material Safety Data Sheet (which supersedes all previous versions) is believed to be correct, at the date of issue, to the best of our current knowledge and experience. It only relates to the specific product designated herein and it may not be valid when said product is used in combination with any other products or in any processed form, unless specified in

the text. This document aims to provide the necessary health and safety information of the product and is not to be considered a warranty or quality specification. It is the responsibility of the recipient of this Material Safety Data Sheet to ensure that information given here is read and understood by all who use, handle, dispose of or in any way come in contact with the product.

Also, it is the responsibility of the user to comply with local legislation relating to safety, health, environment and waste management. Data and information provided concerning the product are informative, exclusively presented to the customer.