

Item: 571

Content weight: 145g (110l)

SECTION 1: Substance/mixture and company identification**1.1 Product identification**

Trade name	OXYGEN
Synonym	--
CAS n°	7782-44-7
EINECS n°	231-956-9
Number of the substance	008-001-00-8
Number of registration	Listed in Annex IV/V REACH, exempted from registration
Product form:	Substance
Chemical formula	O ₂

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

Relevant identified uses: Industrial and professional uses. Perform risk assessment prior to use.

Uses advised against: None.

1.3 Details of the supplier of the safety data sheet:

Fornitore / Distributore:
KEMPER SRL
Via Prampolini 1/Q, 43044 Lemignano di Collecchio (PR)
Tel.: +39 0521-957111 (dalle 8.30 alle 17.00)
Contatto responsabile delle SDS: info@kempergroup.it

1.4 Numbers of the main poison information centres:

DESCRIPTION	NATION	TELEPHONE
REACH and CLP UK CA Help Desk Health and Safety Executive (HSE)	EN	+44 0151 9515897 / 0151 922 9235

SECTION 2: Hazard identification**2.1 Classification of the substance****The classification of the substance according to Regulation (EC) 1272/2008 [EU-GHS/CLP]**Physical hazards: Oxidising Gases, Category 1 H270
Gases under pressure: Compressed gas H280**2.2 Label elements**

Hazard pictograms (CLP):



GHS03

GHS04

Signal word (CLP):

Danger

Hazard statements (CLP):

H270 - May cause or intensify fire; oxidiser.

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

Precautionary statements (CLP)

- Prevention:

P220 - Keep away from clothing and other combustible materials.

P244 - Keep valves and fittings free from oil and grease.

- Response:

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

- Storage:

P410 + P403 Store in a well-ventilated ventilated and protect from sunlight.

2.3 Other hazards

Not classified as PBT or vPvB.

The substance/mixture has no endocrine disrupting properties.

SECTION 3: Composition/information on ingredients**3.1 Substance**

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Oxygen	CAS-No.: 7782-44-7 EC-No.: 231-956-9 EC Index-No.: 008-001-00-8 REACH registration No: *1	100	Ox. Gas 1, H270 Press. Gas (Comp.), H280

*Contains no other components or impurities which will influence the classification of the product.***1: Listed in Annex IV / V REACH, exempted from registration.***3: Registration not required: Substance manufactured or imported < 1t/y.***3.2 Mixtures**

Not applicable

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

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

Continuous inhalation of concentrations higher than 75% may cause nausea, dizziness, respiratory difficulty and convulsion.

See section 11.

4.3 Indication of any immediate medical attention and special treatment needed

None.

SECTION 5: Fire fighting measures**5.1 Extinguishing media**Suitable extinguishing media : Water spray or fog.
Product does not burn, use fire control measures appropriate for the surrounding fire.

Unsuitable extinguishing media : Do not use water jet to extinguish.

5.2 Special hazards arising from substance or mixture

Specific hazards : Supports combustion.

Exposure to fire may cause containers to rupture/explode.

Hazardous combustion products : None.

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. Move containers away from the fire area if this can be done without risk.

Special protective equipment for fire fighters:

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

SECTION 6: Accidental release measures**6.1 Personal precautions, protective equipment and emergency procedures****For non-emergency personnel:**

Act in accordance with local emergency plan.

Try to stop release.

Evacuate area.

Eliminate ignition sources.

Ensure adequate air ventilation.

See section 8 of the SDS for more information on personal protective equipment

For emergency responders:

Monitor concentration of released product.

Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe.

See section 5.3 of the SDS for more information.

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.

SECTION 7: Handling and storage**7.1 Precautions for safe handling**

Safe use of the product :

Use no oil or grease. Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact your gas supplier if in doubt. Do not smoke while handling product. Keep equipment free from oil and grease. For more guidance, refer to the EIGA Doc. 33 - Cleaning of Equipment for Oxygen Service downloadable at <http://www.eiga.eu>. Use only oxygen approved lubricants and oxygen approved sealings. Avoid suck back of water, acid and alkalis. Only experienced and properly instructed persons should handle gases under pressure. Ensure the complete gas system was (or is regularly) checked for leaks before use. Use only with equipment cleaned for oxygen service and rated for container pressure. The product must be handled in accordance with good industrial hygiene and safety procedures. Consider pressure relief device(s) in gas installations. Do not breathe gas.

Safe handling of the gas receptacle :

Refer to supplier's container handling instructions. Do not allow backfeed into the container. Protect containers 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. If user experiences any difficulty operating 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. 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 content of the container. Suck back of water into the container must be prevented. Open valve slowly to avoid pressure shock.

7.2 Conditions for safe storage, including any incompatibilities.

Segregate from flammable gases and other flammable materials in store.
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 them from falling over.
Keep container below 50°C in a well ventilated place.
Store containers in location free from fire risk and away from sources of heat and ignition.
Keep away from combustible materials.

SECTION 8: Exposure control/personal protection

8.1 Control parameters

OEL (Occupational Exposure Limits) : None available.

DNEL (Derived-No Effect Level) : None available.

PNEC (Predicted No-Effect Concentration) : None available.

8.2 Exposure controls

8.2.1 Appropriate engineering controls

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 the use of a work permit system e.g. for maintenance activities.

Systems under pressure should be regularly checked for leakages.

8.2.2 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 - specifications.

Skin protection

Hand protection: Wear working gloves when handling gas containers. Standard EN 388 - Protective gloves against mechanical risk, performance level 1 or higher.

Other: Consider the use of flame resistant safety clothing. Standard EN ISO 14116 - Limited flame spread materials.

Wear safety shoes while handling containers. Standard EN ISO 20345 - Personal protective equipment - Safety footwear.

Respiratory protection: None necessary. Self contained breathing apparatus is recommended, where unknown exposure may be expected, e.g. during maintenance activities on installation systems. Standard EN 137 - Self-contained open-circuit compressed air breathing apparatus with full face mask.

Thermal hazards: None in addition to the above sections.

8.2.3 Environmental exposure controls

Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for specific methods for waste gas treatment.

SECTION 9: Physical and chemical properties**9.1 Information on basic physical and chemical properties**

Appearance

- Physical state at 20°C / 101.3kPa:	Gas.
- Colour:	Colourless.
Odour:	No odour warning properties. Odour threshold is subjective and inadequate to warn of overexposure.
Melting point / Freezing point:	-219 °C
Boiling point:	-183 °C
Flammability:	Non flammable.
Lower explosive limit (LEL):	Not available.
Upper explosive limit (UEL):	Not available.
Flash point:	Not applicable for gases and gas mixtures.
Auto-ignition temperature:	Non flammable.
Decomposition temperature:	Not applicable.
pH:	Not applicable for gases and gas mixtures.
Viscosity, kinematic:	No reliable data available.
Water solubility [20°C]:	39 mg/l
Partition coefficient n-octanol/water (Log Kow):	Not available.
Vapour pressure [20°C]:	Not applicable.
Vapour pressure [50°C]:	Not applicable.
Density and/or relative density:	Not applicable.
Relative vapour density (air=1):	1,1
Particle characteristics:	Not applicable for gases and gas mixtures.

9.2 Other information**9.2.1. Information with regard to physical hazard classes**

Explosion limits:	Non flammable.
Oxidising properties:	Oxidiser.
- Coefficient of oxygen equivalency (Ci):	1
Critical temperature [°C]:	-118 °C

9.2.2. Other safety characteristics

Molar mass:	32 g/mol
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SECTION 10: Stability and reactivity**10.1 Reactivity**

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

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Violently oxidises organic material.

10.4. Conditions to avoid

Avoid moisture in installation systems.

10.5. Incompatible materials

Keep equipment free from oil and grease. For more guidance, refer to the EIGA Doc. 33 - Cleaning of Equipment for Oxygen Service downloadable at <http://www.eiga.eu>. 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. For additional information on compatibility refer to ISO 11114.

10.6. Hazardous decomposition products

None.

SECTION 11: Toxicological information**11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**

Acute toxicity:	No known toxicological effects from this product.
Skin corrosion/irritation:	No known effects from this product.
Serious eye damage/irritation:	No known effects from this product.
Respiratory or skin sensitisation:	No known effects from this product.
Germ cell mutagenicity:	No known effects from this product.
Carcinogenicity:	No known effects from this product.
Toxic for reproduction: Fertility:	No known effects from this product.
Toxic for reproduction: unborn child:	No known effects from this product.
STOT-single exposure:	No known effects from this product.
STOT-repeated exposure:	No known effects from this product.
Aspiration hazard:	Not applicable for gases and gas mixtures.

11.2. Information on other hazards

Other information: The substance/mixture has no endocrine disrupting properties.

SECTION 12: Ecological information**12.1. Toxicity**

Assessment: No ecological damage caused by this product.

EC50 48h - Daphnia magna [mg/l]: No data available.

EC50 72h - Algae [mg/l]: No data available.

LC50 96 h - Fish [mg/l]: No data available.

12.2. Persistence and degradability

Assessment: No ecological damage caused by this product.

12.3. Bioaccumulative potential

Assessment: No ecological damage caused by this product.

12.4. Mobility in soil

Assessment: No ecological damage caused by this product.

12.5. Results of PBT and vPvB assessment

Assessment: Not classified as PBT or vPvB.

12.6. Endocrine disrupting properties

The substance/mixture has no endocrine disrupting properties.

12.7. Other adverse effects

Other adverse effects: No known effects from this product.

Effect on the ozone layer: No effect on the ozone layer.

Effect on global warming: None.

SECTION 13: Disposal considerations**13.1 Waste treatment method**

May be vented to atmosphere in a well ventilated place.

Contact supplier if guidance is required.

Ensure that the emission levels from local regulations or operating permits are not exceeded.

Refer to the EIGA code of practice Doc.30 "Disposal of Gases", downloadable at <http://www.eiga.eu> for more guidance on suitable disposal methods.

Do not discharge into any place where its accumulation could be dangerous.

Cylinders are not refillable containers. If the cylinder must be taken out of use, ask the manufacturer/distributor for information on proper disposal.

List of hazardous waste codes (from Commission Decision 2000/532/EC as amended)

: 16 05 04 *: Gases in pressure containers (including halons) containing hazardous substances.

13.2. Additional information

External treatment and disposal of waste should comply with applicable local and/or national regulations.

SECTION 14: Transport information**14.1. UN number or ID number**

In accordance with ADR / RID / IMDG / IATA / ADN

UN-No.: 1072

14.2. UN proper shipping name

Transport by road/rail (ADR/RID): OXYGEN, COMPRESSED

Transport by air (ICAO-TI / IATA-DGR): not expected

Transport by sea (IMDG): OXYGEN, COMPRESSED

14.3. Transport hazard class(es)

Labelling :

2.2: Non-flammable, non-toxic gases.

5.1: Oxidizing substances.

Transport by road/rail (ADR/RID)

Class: 2

Classification code: 10

Hazard identification number: 25

Tunnel Restriction: E - Passage forbidden through tunnels of category E

Transport by sea (IMDG)

Class / Div. (Sub. risk(s)): 2.2 (5.1)

Emergency Schedule (EmS) - Fire: F-C

Emergency Schedule (EmS) - Spillage: S-W

14.4. Packing group

Transport by road/rail (ADR/RID): Not applicable

Transport by sea (IMDG): Not applicable

14.5. Environmental hazards

Transport by road/rail (ADR/RID): None.

Transport by sea (IMDG): None.

14.6. Special precautions for user**Packing Instruction(s)**

Transport by road/rail (ADR/RID): P200

Transport by sea (IMDG): P200

Special transport precautions:

Avoid transport on vehicles where the load space is not separated 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 there is adequate ventilation.
- Ensure that containers are firmly secured.

14.7. Maritime transport in bulk according to IMO instruments

Not applicable.

SECTION 15: Regulatory information

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

EU-Regulations

Restrictions on use: None.

Other information, restriction and prohibition regulations: Not listed on the PIC list (Regulation EU 649/2012).

Seveso Directive: 2012/18/EU (Seveso III): Listed.

National regulations

Regulatory reference: Ensure all national/local regulations are observed.

15.2. Chemical safety assessment

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

SECTION 16: Other information

The data is based on the present state of our knowledge, however, it does not represent any guarantee of the properties of the product and it does not establish a legally valid contractual relationship.

Indication of modifications:

All sections have been updated. Format according to COMMISSION REGULATION (EU) 2020/878.

The workers must be informed, trained and instructed according to their specific tasks, according to the relevant legal provisions. Hereinafter, we present the most important legal provisions and technical rules containing the related provisions.

Contact: Technical Office

Abbreviations and acronyms :

ATE - Acute Toxicity Estimate

CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008

REACH - Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006

EINECS - European Inventory of Existing Commercial Chemical Substances

CAS# - Chemical Abstract Service number

PPE - Personal Protection Equipment

LC50 - Lethal Concentration to 50 % of a test population

RMM - Risk Management Measures

PBT - Persistent, Bioaccumulative and Toxic

vPvB - Very Persistent and Very Bioaccumulative

STOT- SE : Specific Target Organ Toxicity - Single Exposure

CSA - Chemical Safety Assessment

EN - European Standard

UN - United Nations

ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road

IATA - International Air Transport Association

IMDG code - International Maritime Dangerous Goods

RID - Regulations concerning the International Carriage of Dangerous Goods by Rail

WGK - Water Hazard Class

STOT - RE : Specific Target Organ Toxicity - Repeated Exposure

UFI : Unique Formula Identifier

Training advice : Ensure operators understand the hazard of oxygen enrichment.

Further information : Classification in accordance with the procedures and calculation methods of Regulation (EC) 1272/2008 (CLP).

Key literature references and sources of data are maintained in EIGA doc 169 : 'Classification and Labelling Guide', downloadable at <http://www.Eiga.eu>.

The information from this sheet refer only to the identified product and may not be of relevance if the product is used in combination with other products or for other uses than the intended ones.

Downstream users and the distributors to whom this Sheet is intended should have at disposal their own material safety data sheet based on the relevant scenarios and information.