

Oxygen

Print date 06.05.2024
Revision date 06.05.2024
Version 10.0 (en)
replaces version of 10.05.2021 (9.0)

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

* **1.1 Product identifier**

Trade name/designation Oxygen
Art-Nr(n). 0700, 0703
Substance name oxygen
Index No 008-001-00-8
EC No 231-956-9
CAS No 7782-44-7

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

* **Use of the substance/mixture**

Basic substance
Process chemical.
Cover gas.
Oxidising agent
Bleaching agent

Uses advised against

Do not use as substitution to air pressure/or to enrich the breathing air.
Do not use for medical-clinical purposes.

1.3 Details of the supplier of the safety data sheet

Supplier

GHC Gerling, Holz & Co. Handels GmbH
Ruhrstraße 113
D-22761 Hamburg
Telephone +49 40 853 123 0
E-mail hamburg@ghc.de
Website www.ghc.com

Department responsible for information:
GHC Gerling, Holz & Co. Handels GmbH
Telephone +49 40 853 123 0

E-mail (competent person):
msds@ghc.de

* **1.4 Emergency telephone number**

EN: Poison Information Center Mainz +49 6131 19240

* **SECTION 2: Hazards identification**

* **2.1 Classification of the substance or mixture**

Classification according to Regulation (EC) No 1272/2008 [CLP]	Classification procedure
Ox. Gas 1, H270	
Press. Gas (Comp.), H280	

Hazard statements for physical hazards

H270 May cause or intensify fire; oxidiser.
H280 Contains gas under pressure; may explode if heated.

* **2.2 Label elements**

* **Labelling according to Regulation (EC) No 1272/2008 [CLP]**

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Hazard pictograms

GHS03



GHS04

Signal word

Danger

Hazard statements

H270 May cause or intensify fire; oxidiser.
 H280 Contains gas under pressure; may explode if heated.

*

Precautionary statements

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.
 P403 Store in a well-ventilated place.

*

Supplemental hazard information

Please return container with residual pressure.

*** 2.3 Other hazards**

*

Adverse human health effects and symptoms

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

*

Other adverse effects

The substance/mixture does not contain components identified as having endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated Regulation (EU) 2017/2100 or Commission Delegated Regulation (EU) 2018/605 in quantities of 0.1% or more.

*

Results of PBT and vPvB assessment

The substance/mixture does not contain components meeting the PBT/vPvB criteria of the Reach Regulation, Annex XIII, at levels of 0.1% or higher.

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

Substance name	oxygen
Index No	008-001-00-8
EC No	231-956-9
CAS No	7782-44-7

Additional information

Content: >= 99,5 %

Remark

The substance does not require registration according to Article 2 (7) in conjunction with Annex IV / V of the Regulation (EC) No 1907/2006 [REACH].

3.2 Mixtures

not applicable

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

In the event of persistent symptoms obtain medical treatment.
 First aider: Pay attention to self-protection!

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Following inhalation

Remove casualty to fresh air and keep warm and at rest.
In the event of symptoms refer for medical treatment.

* **Following skin contact**

No special measures are necessary.
In case of frostbite, wash with plenty of water; do not remove clothing.
In case of frostbite rinse with lukewarm (not hot) water for at least 15 minutes. Do not remove clothing frozen to the skin.
Thaw with lukewarm water. Apply a sterile dressing. Obtain medical assistance.

After eye contact

No special actions required.

Following ingestion

Ingestion is not considered a potential route of exposure.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms

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

Notes for the doctor

Treat symptomatically.

* **SECTION 5: Firefighting measures**

* **5.1 Extinguishing media**

* **Suitable extinguishing media**

The product itself does not burn. The product itself does not burn. Match extinguishing measures to surrounding fire.
Extinguishing powder
Water spray jet
alcohol resistant foam
Carbon dioxide (CO₂)

Unsuitable extinguishing media

Full water jet

* **5.2 Special hazards arising from the substance or mixture**

* **Hazardous combustion products**

The substance / product enhances the combustion.

* **5.3 Advice for firefighters**

* **Special protective equipment for firefighters**

Wear a self-contained breathing apparatus and chemical protective clothing.

* **Additional information**

If possible, shut off gas valves and move containers to a safe location.
Use water spray jet to protect personnel and to cool endangered containers.
Exposure to fire may cause rupture / explosion of the containers.
Dispose of fire residues and contaminated extinguishing water in accordance with local, official regulations.

* **SECTION 6: Accidental release measures**

* **6.1 Personal precautions, protective equipment and emergency procedures**

* **For non-emergency personnel**

Use personal protection equipment.
Leave the danger area.
Keep people away and stay on the upwind side.

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* **For emergency responders**

Personal protection by wearing close-fitting protective clothing and breathing apparatus.
Pay attention to extension of gas especially at ground (heavier than air) and in direction of the wind.
Remove persons to safety.

* **6.2 Environmental precautions**

If possible, stop flow of product.

* **6.3 Methods and material for containment and cleaning up**

* **For containment**

If necessary, secure leaky pressure receptacles using a salvage container.

* **For cleaning up**

Provide adequate ventilation.

* **6.4 Reference to other sections**

Disposal: see section 13
Personal protection equipment: see section 8

* **SECTION 7: Handling and storage**

* **7.1 Precautions for safe handling**

* **Protective measures**

Use only in well-ventilated areas.
Transfer and handle product only in closed systems.
Usual measures for fire prevention.
Containers' temperature should not be increased above 50 °C.
The working pressure in the receptacle must not exceed the saturation vapour pressure of the pure product resulting at a temperature of 50 °C.
Prevent cylinders from falling over.
Ensure valve protection device is correctly fitted.
Ensure valve outlet cap nut or plug (where provided) is correctly fitted.
Open valve slowly to avoid pressure shock.
Do not allow backflow into the container.
Entering of water into the container must be prevented.
No water to valves, flanges and other fittings.
Purging of pipes and valves with inert gases - to avoid: water, solvents.

* **Advices on general occupational hygiene**

When using do not eat, drink, smoke, sniff.
Wash hands before breaks and after work.
Remove contaminated clothing and protective equipment before entering eating areas.

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

* **Requirements for storage rooms and vessels**

All regulations and local requirements for the storage of containers have to be respected.
Keep container tightly closed and in a well-ventilated place.
Containers' temperature should not be increased above 50 °C.
Prevent cylinders from falling over.
Only use containers specifically approved for the substance/product.
Information on suitable materials for receptacles and valves see ISO 11114.

* **Materials to avoid**

Do not store together with explosives.
Do not store together with flammable liquids.
Do not store together with flammable solids.
Do not store together with pyrophoric and self-heating substances.
Do not store together with oxidizing liquids or oxidizing solids.
Do not store together with toxic liquids or toxic solids.
Do not store together with infectious substances.
Do not store together with radioactive material.
Do not store together with food or feed.

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7.3 Specific end use(s)

Recommendation

An exposure scenario is not required.

*** SECTION 8: Exposure controls/personal protection**

8.1 Control parameters

No data available

*** 8.2 Exposure controls**

*** Appropriate engineering controls**

*** Technical measures to prevent exposure**

Transfer and handle only in enclosed systems.

*** Personal protection equipment**

*** Eye/face protection**

Protective goggles according to EN 166, in case of increased risk add protective face shield.

*** Hand protection**

Safety gloves according to EN 388:
 Chromate-free leather

Body protection:

Safety shoes with steel toecap.
 Body covering work clothing or chemical resistant suit at increased risk.

*** Respiratory protection**

Keep self contained breathing apparatus readily available for emergency use.
 Respiratory protection complying with EN 137.

Additional information

Avoid oxygen rich (>23.5 %) atmospheres.

*** SECTION 9: Physical and chemical properties**

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

Physical state

compressed gas

Colour

colourless

Odour

odourless

Safety relevant basis data

	Value	Method	Source, Remark
Odour threshold:			not applicable
Melting point/freezing point			not applicable
Boiling point or initial boiling point and boiling range	-183 °C		
flammability			The product itself does not burn.
Lower and upper explosion limit			not determined
Flash point			not applicable
Auto-ignition temperature			not determined
Decomposition temperature			not determined
pH			not applicable

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	Value	Method	Source, Remark
Viscosity			not applicable
Solubility(ies)	Water solubility 42.8 mg/L (20°C) pressure 1000 hPa		
Partition coefficient n-octanol/water (log value)			not determined
Vapour pressure			not determined
Density and/or relative density			not applicable
Relative vapour density	1.11		air = 1
particle characteristics			not applicable

* **9.2 Other information**

No data available

* **SECTION 10: Stability and reactivity****10.1 Reactivity**

See section "Possibility of hazardous reactions".

* **10.2 Chemical stability**

The substance is chemically stable under recommended conditions of storage, use and temperature.

* **10.3 Possibility of hazardous reactions**

Reactions with numerous chemical compounds.
 May react violently with reducing agents.

10.4 Conditions to avoid

Heat sources / heat.
 Ignition sources, open flames, glowing metal surfaces, etc.

* **10.5 Incompatible materials**

Flammable / combustible substances.

10.6 Hazardous decomposition products

When handled and stored appropriately, no dangerous decomposition products are known.

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

	Effective dose	Method, Evaluation	Source, Remark
Acute oral toxicity			Study scientifically not necessary.
Acute dermal toxicity			Study scientifically not necessary.
Acute inhalation toxicity			Study scientifically not necessary.

* **Assessment/classification**

Based on available data, the classification criteria are not met.

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* **Skin corrosion/irritation**

* **Assessment/classification**
 Based on available data, the classification criteria are not met.

* **Serious eye damage/irritation**

* **Assessment/classification**
 Based on available data, the classification criteria are not met.

* **Sensitisation to the respiratory tract**

* **Assessment/classification**
 Based on available data, the classification criteria are not met.

* **Skin sensitisation**

* **Assessment/classification**
 Based on available data, the classification criteria are not met.

* **Germ cell mutagenicity**

* **Assessment/classification**
 Based on available data, the classification criteria are not met.

* **Carcinogenicity**

* **Assessment/classification**
 Based on available data, the classification criteria are not met.

* **Reproductive toxicity**

* **Assessment/classification**
 Based on available data, the classification criteria are not met.

* **STOT-single exposure**

not determined

* **STOT-repeated exposure**

* **Assessment/classification**
 Based on available data, the classification criteria are not met.

* **Aspiration hazard**

* **Remark**
 Study technically not feasible.

11.2 Information on other hazards

Other information

Inhalation of high concentrations of oxygen for long periods can cause oxygen poisoning.

* **SECTION 12: Ecological information**

* **12.1 Toxicity**

* **Aquatic toxicity**

	Effective dose	Method, Evaluation	Source, Remark
Acute (short-term) fish toxicity	not determined		
Chronic (long-term) fish toxicity	not determined		
Acute (short-term) toxicity to crustacea	not determined		
Chronic (long-term) toxicity to aquatic invertebrate	not determined		
Acute (short-term) toxicity to algae and cyanobacteria	not determined		

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	Effective dose	Method, Evaluation	Source, Remark
Chronic (long-term) toxicity to aquatic algae and cyanobacteria	not determined		
Toxicity to other aquatic plants/organisms	not determined		
Toxicity to microorganisms	not determined		

*** 12.2 Persistence and degradability**

No data available

*** 12.3 Bioaccumulative potential**

No data available

*** 12.4 Mobility in soil**

No data available

*** 12.5 Results of PBT and vPvB assessment**

The substance/mixture does not contain components meeting the PBT/vPvB criteria of the Reach Regulation, Annex XIII, at levels of 0.1% or higher.

*** 12.6 Endocrine disrupting properties**

No data available

*** 12.7 Other adverse effects***** Additional ecotoxicological information****Additional information**

No known ecological damage caused by this product.

SECTION 13: Disposal considerations**13.1 Waste treatment methods****Waste codes/waste designations according to EWC/AVV**

Waste code product	Waste name
160504 *	gases in pressure containers (including halons) containing hazardous substances

Appropriate disposal / Product

Waste disposal according to directive 2008/98/EC, covering waste and dangerous waste.

Appropriate disposal / Package

Transportable pressure equipment (empty, residual pressure): Return to supplier / manufacturer.

*** SECTION 14: Transport information**

	Land transport (ADR/RID)	Sea transport (IMDG)	Air transport (ICAO-TI / IATA-DGR)
14.1 UN number or ID number	UN 1072	UN 1072	UN 1072
14.2 UN proper shipping name	OXYGEN, COMPRESSED	OXYGEN, COMPRESSED	Oxygen, compressed
14.3 Transport hazard class(es)	2.2 (5.1)	2.2 (5.1)	2.2 (5.1)
14.4 Packing group	-	-	-
14.5 Environmental hazards	No	No	No

14.6 Special precautions for user

The protective measures listed in Sections 6, 7 and 8 of the Safety Data Sheet have to be considered.

14.7 Maritime transport in bulk according to IMO instruments

No carriage in bulk.

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Land transport (ADR/RID)

UN number or ID number	UN 1072
UN proper shipping name	OXYGEN, COMPRESSED
Transport hazard class(es)	2.2 (5.1)
Hazard label(s)	2.2+5.1
Classification code	10
Packing group	-
Environmental hazards	No
Limited quantity (LQ)	0
Special provisions	355, 655, 662
Tunnel restriction code	E

*** Sea transport (IMDG)**

UN number or ID number	UN 1072
UN proper shipping name	OXYGEN, COMPRESSED
Transport hazard class(es)	2.2 (5.1)
Packing group	-
Environmental hazards	No
Limited quantity (LQ)	0
Marine pollutant	No
EmS	F-C, S-W

Air transport (ICAO-TI / IATA-DGR)

UN number or ID number	UN 1072
UN proper shipping name	Oxygen, compressed
Transport hazard class(es)	2.2 (5.1)
Packing group	-
Environmental hazards	No

*** SECTION 15: Regulatory information***** 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture***** EU legislation***** Restrictions of occupation**

Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.
 Observe restrictions to employment for juvenils according to the 'juvenile work protection guideline' (94/33/EC).

*** Other regulations (EU)***** To follow:**

Directive 2012/18/EU on the control of major-accident hazards involving dangerous substances.
 National and local regulations concerning chemicals shall be observed.

*** Directive 2010/75/EU on industrial emissions [Industrial Emissions Directive] VOC**

VOC-value $\geq 99\%$

15.2 Chemical Safety Assessment*** National regulations**

For this substance a chemical safety assessment is not required.

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* **SECTION 16: Other information**

* **Abbreviations and acronyms**
Ox. Gas 1: Oxidizing gases, Category 1
Press. Gas (Comp.): Compressed gas (CG)

Key literature references and sources for data

Information from our suppliers and data from the "GESTIS Substances Database" and the "Registered Substances" database of the European Chemicals Agency (ECHA) were used to create this safety data sheet.

* **Additional information**
The information contained herein is based on the state of our knowledge. It characterizes the product with regard to the appropriate safety precautions. It does not represent a guarantee of the properties of the product.

Relevant H- and EUH-phrases (Number and full text)

H270 May cause or intensify fire; oxidiser.
H280 Contains gas under pressure; may explode if heated.

Indication of changes

* Data changed compared with the previous version