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

1.1. Product identifier

Trade name	Oxygen
Chemical description	Oxygen
CAS N°	7782-44-7
CE N°	231-956-9
Index N°	008-001-00-8
Registration n°	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 Test gas/Calibration gas Welding, cutting, heating and brazing Shield gas for welding processes Use for manufacture of electronic/photovoltaic components Water treatment Laser gas Laboratory use Food applications Contact supplier for more information on uses
Uses advised against	Consumer use not recommended

1.3. Details of the supplier of the safety data sheet

Company identification	MULTIGAS Route de l'Industrie 102 CH-1564 Domdidier
Phone number	+41 (0) 26 676 94 94
E-mail address	info@multigas.ch

1.4. Emergency telephone numbers

145 (Toxicology Centre Zurich) or +41 (0) 44 251 51 51
+41 (0) 26 676 94 94 (Multigas)

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SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Oxidising Gases, Category 1	H270
Gases under pressure : Compressed gas	H280

For the complete H-sentences texts mentioned in that chapter, refer to Section 16

2.2. Label elements

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

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 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+403	Protect from sunlight. Store in a well-ventilated place

2.3. Other hazards

High pressure oxidising gas
Accelerates combustion considerably
Avoid contact with oil, grease and combustible materials
May react violently with combustible materials

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SECTION 3: Composition/information on ingredients

3.1. Substances

Name	Product identifier	Concentration	Classification
Oxygen	(CAS-No.) 7782-44-7 (EC-No.) 231-956-9 (EC Index-No.) 008-001-00-8 (Registration-No.) --	<= 100%	Ox. Gas 1, H270 Press. Gas (Comp.), H280

For the complete H-sentences texts mentioned in that chapter, refer to Section 16

Contains no other components or impurities which will influence the classification of the product

3.2. Mixtures

Not established

SECTION 4: First aid measures

4.1. Description of first aid measures

General advice	See a doctor. Show this safety data sheet to the attending physician
In case of inhalation	In case of inhalation, remove the person from the contaminated area. In case of respiratory arrest, give artificial respiration. See a doctor
In case of skin contact	Adverse effects not expected from this product
In case of eyes contact	Adverse effects not expected from this product
In case of ingestion	Ingestion is not considered a possible 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.
Refer to section 11

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

None

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	Water spray or water mist. Dry powder. Carbon dioxide. Foam
Unsuitable extinguishing media	Do not use water jet to extinguish

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5.2. Special hazards arising from the substance or mixture

Specific hazards	Supports combustion Exposure to fire may cause containers to rupture/explode
Hazardous combustion products	None

5.3. Additional information

Cool endangered receptacles with water spray jet from a protected position

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Clothing exposed to high concentrations may retain oxygen for half an hour or more and thus pose a fire hazard
 Provide adequate ventilation
 Evacuate personnel to a safe place
 Personal protective equipment, see section 8

6.2. Environmental precautions

-

6.3. Methods and material for containment and cleaning up

-

6.4. Reference to other sections

See also sections 8 and 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling


Keep away from sources of ignition. Use only spark-proof tools. No smoking
 For precautions, see section 2.2

7.2. Conditions for safe storage, including any incompatibilities

Store in a cool place. Keep container tightly closed in a dry and well-ventilated place
 Content under pressure

7.3. Specific end use(s)

None

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SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Components with occupational exposure limits

Component	CAS N°	Exposure value type	Control parameter	Source
Oxygen	7782-44-7	TWA	-	No occupational exposure limit value
			-	
		OEL	-	
			-	

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Provide adequate general and local exhaust ventilation
 Gas detectors should be used when oxidising gases may be released

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

Eye/face protection Wear goggles and a face shield when transfilling or breaking transfer connections. Standard EN 166

Skin / hand protection Wear protective gloves when handling gas cylinders. Standard EN 388- Protective gloves against mechanical hazards

Respiratory protection Self-contained breathing apparatus (SCBA) or positive pressure air mask must be used in oxygenated atmospheres. Standard EN 137 - Self-contained compressed air device with a full face mask

8.2.3. Environmental exposure controls

Avoid any spill or leak if it can be done safely

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 data available

Odour threshold No data available

pH No data available

Melting point / Freezing point -219°C

Boiling point -183°C

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Flash point	No data available
Evaporation rate	No data available
Flammability (solid, gas)	Not flammable
Explosive limits	No data available
Vapour pressure [20°C]	No data available
Vapour pressure [50°C]	No data available
Vapour density	No data available
Relative density, liquid (water=1)	1.1
Relative density, gas (air=1)	1.105
Water solubility	39 mg/l
Partition coefficient n-octanol/water (Log Kow)	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Viscosity	No data available
Explosive properties	No data available
Oxidising properties	No data available

9.2. Other information

Molar mass	32 g/mol
Critical temperature [°C]	-118.8°C
Relative vapour density	Gas or vapour heavier than air. Can accumulate in confined areas, especially in low spots and basements

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 recommended storage conditions

10.3. Possibility of hazardous reactions

Violently oxidises organic material

10.4. Conditions to avoid

Avoid moisture in installation systems

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10.5. Incompatible materials

May react violently with combustible materials
 May react violently with reducing agents
 Keep equipment free from oil and grease
 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
 For additional information on compatibility refer to ISO 11114

10.6. Hazardous decomposition products

None

SECTION 11: Toxicological information

11.1. Chemical safety assessment

Acute toxicity	No known toxicological effects from this product
Skin corrosion/irritation	No data available
Serious eye damage/irritation	No data available
Respiratory or skin sensitisation	No data available
Germ cell mutagenicity	No data available
Carcinogenicity	No data available
Reproductive toxicity	No data available
STOT-single exposure – Target organ(s)	No data available
STOT-repeated exposure	No data available
Ingestion hazard	No data available

SECTION 12: Ecological information

12.1. Toxicity

Assessment	No data available
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12.2. Persistence and degradability

No data available

12.3. Bioaccumulative potential

No data available

12.4. Mobility in soil

No data available

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12.5. Results of PBT and vPvB assessment

PBT / vPvB assessment is not available because the chemical safety assessment is not required / is not conducted

12.6. Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product	<p>May be vented to atmosphere in a well ventilated place</p> <p>Do not discharge into any place where its accumulation could be dangerous</p> <p>Do not vent to areas where there is a risk of forming an explosive mixture with air</p>
Contaminated container	<p>Eliminate as unused product</p> <p>Contact the supplier if instructions are needed</p>
OMoD Code	<p>16 05 04</p> <p>Gases in pressure containers containing dangerous substances</p>

SECTION 14: Transport information

14.1. UN number

Transport par road/rail ADR / RID	Transport by sea IMDG	Transport by air IATA
1072	1072	1072

14.2. UN proper shipping name

Transport par road/rail ADR / RID	Transport by sea IMDG	Transport by air IATA
Oxygen, compressed	Oxygen, compressed	Oxygen, compressed

14.3. Transport hazard class(es)

Labelling



ADR/RID
IMDG
IATA

2.2 : Non-flammable, non-toxic gases
5.1 : Oxidizing substances

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14.4. Packing group

ADR/RID	Not established
IMDG	
IATA	

14.5. Environmental hazards

ADR/RID	None
IMDG	None
ICAO-TI / IATA-DGR	None

14.6. Special precautions for user

No data available

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

SECTION 15: Regulatory information

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

This safety data sheet complies with the requirements of Regulation (CE) No. 1907/2006

15.2. 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 2015/830
Abbreviations and acronyms	<p>ADR : European Agreement concerning the International Carriage of Dangerous Goods by Road</p> <p>CAS : Chemical Abstract Service number (USA)</p> <p>CLP : Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008</p> <p>CSA : Chemical Safety Assessment</p> <p>EIGA : European Industrial Gases Association</p> <p>EINECS : European Inventory of Existing Commercial Chemical Substances</p> <p>EN : European Standard</p> <p>ATE : Acute Toxicity Estimate</p>

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IATA :	International Air Transport Association
IMDG Code :	International Maritime Dangerous Goods Code
LC50 :	Lethal Concentration to 50 % of a test population
OMoD :	Swiss Ordinance on the movement of waste
PBT :	Persistent, Bioaccumulative and Toxic
PPE:	Personal Protection Equipment
REACH :	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
RID :	Regulations concerning the international carriage of dangerous goods by rail
RMM :	Risk Management Measures
STOT-SE :	Specific Target Organ Toxicity - Single Exposure
UN :	United Nations
vPvB :	Very Persistent and Very Bioaccumulative
WGK:	Water Hazards Class

Full text of H, EUH and P statements used in sections 2 and 3

Hazard statements

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

Precautionary statements

P220	Keep away from 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+403	Protect from sunlight. Store in a well-ventilated place

Disclaimer of liability

Details given in this document have been prepared based on the most available reliable documents and are believed to be correct at the time of going to press

They do not claim to be exhaustive and should be considered as a guide