

**AB Achema**  
**Safety Data Sheet**

According to Annex II to Regulation (EC) No. 1907/2006 (REACH)

**OXYGEN**



Revised: 30 Jan 2015

Version No. 1

Revision No. 5

Created: 31 Dec 2010

**1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING**

**1.1 Product identifier**

Commercial substance name – *Oxygen*

Chemical substance name – *Oxygen*

CAS No.: 7782-44-7

EC No.: 231-956-9

Identification No.: 008-001-00-8

REACH Registration No.: Not registered due to the fact that is classified as an exclusion according to Annex V to Regulation (EC) No. 1907/2006

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

**1.2.1** Relevant identified uses: *Gaseous oxygen is used for cutting and welding ferrous and non-ferrous metals. Liquid oxygen shall be used after its gasification*

**1.2.2** Uses advised against: *None*

**1.3 Details of the Supplier of the Safety Data Sheet:**

Manufacturer/Supplier: Gaschema Branch of AB Achema

Address: Jonalaukio k., Ruklos sen., LT 55296

Country: Republic of Lithuania

Telephone: +370 349 56259

Website of the Manufacturer/Supplier: [www.gachema.lt](http://www.gachema.lt).

Competent person: Z. Andriulaitienė, [z.andriulaitiene@gaschema.lt](mailto:z.andriulaitiene@gaschema.lt)

**1.4 Emergency telephone number**

Please contact: Poison Control and Information Service opened 24 hours-a-day by telephone: +370 (5) 2362052, General Emergency Service by telephone 112

**2. HAZARDS IDENTIFICATION**

**2.1.1 Classification according to Regulation (EC) No. 1272/2008:**

Oxidising gas, Category 1 (for gaseous and liquid oxygen)

Gas under pressure (for gaseous oxygen)

Refrigerated liquid gas (for gaseous oxygen)

H270 May cause or intensify fire; oxidiser (for gaseous and liquid oxygen)

H280 Contains gas under pressure; may explode if heated (for gaseous oxygen)

H281 Contains refrigerated gas; may cause cryogenic burns or injury (for liquid oxygen)

**2.1.2 Classification according to Directive 1999/45/EEC:**

O, R8

**2.1.3 Additional information:**

Full text of hazard and precautionary statements is listed in Section 16

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**2.2 Label elements**

**2.1.1 Labelling according to Regulation (EC) No. 1272/2008:**



Signal word **Danger**

H270 – May cause or intensify fire; oxidiser (for gaseous and liquid oxygen)

H280 – Contains gas under pressure; may explode if heated (for gaseous oxygen)

H281 – Contains refrigerated gas; may cause cryogenic burns or injury (for liquid oxygen)

P244 – Keep reduction valves free from grease and oil (for gaseous and liquid oxygen)

P282 – Wear cold insulating gloves/face shield/eye protection (for liquid oxygen)

P336 – Thaw frosted parts with lukewarm water. Do not rub affected area (for liquid oxygen)

P315 – Get immediate medical advice/attention (for liquid oxygen)

P410+P403 – Protect from sunlight. Store in a well-ventilated place (for gaseous oxygen)

P403 – Store in a well-ventilated place (for liquid oxygen)

P250 – Do not subject to shock (for gaseous and liquid oxygen)

**2.3 Other hazards:**

Neither PBT nor vPvB assessment has been carried out according to Annex XIII to Regulation (EC) No.1907/2006

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

**3.1 Substances**

The product is considered an elementary substance according to Regulation (EC) No. 1907/2006.

CAS No.	EC No.	REACH Registration No.	Percentage by Weight %	Substance Name	Classification according to Regulation (EC) No. 1272/2008: [CLP / GHS] requirements
7782-44-7	231-956-9	Not registered due to the fact that is classified as an exclusion according to Annex V to Regulation (EC) No. 1907/2006	99.5-99.7	Oxygen	Oxidising gas, Cat. 1, H270 Gas under pressure (for gaseous), H280 (for gaseous) Refrigerated liquid gas (for liquid), H281 (for liquid)

CAS No.	EC No.	REACH Registration No.	Percentage by Weight %	Substance Name	Classification according to Directive 67/548/EEC
7782-44-7	231-956-9	Not registered due to the fact that is classified as an exclusion according to Annex V to	99.5-99.7	Oxygen	O, R8

## OXYGEN

		Regulation (EC) No. 1907/2006			
<b>4. FIRST AID MEASURES</b>					
<b>4.1 Description of first aid measures</b> Effect of the substance/preparation to the body: <b>After inhalation:</b> <i>Remove casualty to a safe place</i> <b>After eye contact:</b> <i>Rinse with lukewarm water, seek medical advice (for liquid oxygen)</i> <b>After ingestion:</b> <i>Swallowing is not considered to be a possible way of exposure</i>					
<b>4.2 Most important symptoms and effects, both acute and delayed</b> <i>Considerable concentration (over 75 %) causes oxygen excess in blood that leads to spasms, nausea, sickness, impaired respiratory function, convulsions; seek medical advice.</i> <b>After skin contact:</b> <i>Dress the frostbitten parts with a sterile bandage. Seek medical advice (for liquid oxygen)</i> <i>No data on delayed effect available</i>					
<b>4.3 Indications of any immediate medical attention and special treatment needed</b> <i>None</i>					
<b>5. FIREFIGHTING MEASURES</b>					
<b>5.1 Extinguishing media</b> <b>Suitable extinguishing media:</b> <i>Water, water foam, carbon dioxide (carbonic acid gas) extinguishers</i> <b>Extinguishing media not to be used for safety reasons:</b> <i>None</i> <b>Unsuitable extinguishing media:</b> <i>None</i>					
<b>5.2 Special hazards arising from the substance or mixture</b> Hazardous substances released by the substance/preparation, during combustion of the substance/preparation, hazardous combustion products and gases: <i>Being a strong oxidiser, oxygen accelerates combustion of other substances, therefore, for contact with oxygen only allowable substance shall be used. Danger is caused by grease</i>					
<b>5.3 Advice for fire-fighters</b> <i>Insulating gas-masks, protective clothing for fire-fighters, protective gloves for fire-fighters</i>					
<b>6. ACCIDENTAL RELEASE MEASURES</b>					
<b>6.1 Personal precautions, protective equipment and emergency procedures</b> <b>For non-emergency personnel:</b> Use personal protective equipment (see Section 8) and ensure suitable ventilation  <b>For emergency responders:</b> Use personal protective equipment (see Section 8) and ensure suitable ventilation					
<b>6.2 Environmental precautions</b> <i>Make sure spills of liquid oxygen are contained. Do not allow to enter into drains, cellars, mines or other places where accumulation thereof would be dangerous</i>					
<b>6.3 Methods and materials for containment and cleaning up</b> <i>Ventilate the place of accident. Gas cylinders are under pressure, therefore, valves and flaps shall be released slowly</i>					

#### **6.4 Reference to other sections**

*Personal protection equipment: see Section 8. Disposal considerations: see Section 13*

### **7. HANDLING AND STORAGE**

#### **7.1 Precautions for safe handling**

Usage requirements and recommendations: *In the premises wherein oxygen volume part may increase, no flammable substances shall be stored and presence of people shall be limited. The premises shall be equipped with an inlet and exhaust ventilation system in compliance with the requirements of STR 2.09.02 Heating, Ventilation, Air Conditioning. No greases shall be used. Release valve slowly to avoid pressure shock. If necessary, thaw valves with dry, warm air or nitrogen*

Storage requirements: *Storage premises shall be clean, dry and well-ventilated; they shall contain no flammable substances*

*Different gases, empty and full cylinders, cryogenic tanks shall be stored separately. Rotation of cryogenic tanks shall also be ensured. Some substances (wood, paper, asphalt, coal, etc.) soaked with liquid oxygen may explode*

Instructions on the limit quantity of the substance/preparation to be stored under the conditions specified: *Not regulated*

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

Unsuitable (incompatible) substances to be stored separately: *Combustible gases, greases, fats, substances that cause sparkle, reducing agents (chemical substances) – no more than 500 cylinders shall be stored. Keep away from ignition sources (including electrostatic dischargers)*

Requirements for containers of the substance/preparation: *Cylinders shall be in compliance with the requirements of the Technical Regulation of Steel Seamless Gas Cylinders. Residual pressure in the cylinders received from the customers shall not be less than 0.05 MPa ( 0.5 kgf/cm<sup>2</sup>). Residual pressure of each cylinder shall be checked*

*Liquid oxygen shall be stored in cryogenic tanks that are compliance with the requirements of LST EN 13458-1 or LST EN 14197-1.*

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

*For welding and cutting ferrous and non-ferrous metals*

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

#### **8.1 Control parameters**

Occupational exposure limit values: *Long-term occupational exposure limit value, short-term occupational exposure limit value not specified in HN 23*

#### **8.2 Exposure controls**

**8.2.1 Appropriate engineering controls:** *Inlet and exhaust ventilation*

**8.2.2 Personal protective equipment:**

**Eye/face protection:** *Safety goggles, perspex visors*

**Skin protection:** *Work clothing*

**Hands protection:** *Felt gloves (for liquid oxygen), gloves*

**Other protection:** *Dense cotton suit (jacket, trousers), special footwear*

**Respiratory protection:** *Not required*

**Protection against thermal hazards:** *Not required*

**8.2.3 Environmental exposure controls:** *Not required*

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Personal hygiene measures: *During work, wear clean work clothing; after completion of work, wash hands with soap, change clothes. Keep work clothing separately. After being in the environment with increased oxygen concentration, do not smoke, do not use open flame and keep away from flame. Ventilate clothing some 30 min*

### **9. PHYSICAL AND CHEMICAL PROPERTIES**

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

<b>Appearance:</b>	<i>Odourless, colourless gas, liquid</i>
<b>pH:</b>	<i>Not applicable for gas</i>
<b>Melting point / freezing point:</b>	<i>-218 °C</i>
<b>Initial boiling point and boiling range:</b>	<i>-182.87 °C</i>
<b>Flash point:</b>	<i>None</i>
<b>Evaporation rate:</b>	<i>No data available</i>
<b>Flammability:</b>	<i>Supports combustion</i>
<b>Upper/lower flammability or explosive limits:</b>	<i>No data available</i>
<b>Vapour pressure:</b>	<i>No data available</i>
<b>Vapour density:</b>	<i>Not available</i>
<b>Relative density:</b>	<i>1.337 kg/m<sup>3</sup> (1142 kg/m<sup>3</sup> of liquid oxygen)</i>
<b>Brittleness:</b>	<i>Not applicable</i>
<b>Partition coefficient: (n-octanol/water):</b>	<i>Does not apply to inorganic gaseous substances</i>
<b>Auto-ignition temperature:</b>	<i>No data available</i>
<b>Decomposition temperature:</b>	<i>No data available</i>
<b>Viscosity:</b>	<i>No data available</i>
<b>Explosive properties:</b>	<i>No data available</i>
<b>Oxidising properties:</b>	<i>Oxidiser</i>

#### **9.2 Other information**

*None*

### **10. STABILITY AND REACTIVITY**

#### **10.1 Reactivity**

Chemical stability and hazardous chemical reactions: *Stable under normal conditions*

**10.2 Chemical stability** *Stable under normal conditions*

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

Need for stabilisers: *Not required*

Exothermic reaction possibility: *None*

#### **10.4 Conditions to avoid**

*High ambient temperature*

**10.5 Incompatible materials** *Combustible and flammable substances, reducing agents, greases, fats*

**10.6 Hazardous decomposition products:** *None*

### **11. TOXICOLOGICAL INFORMATION**

**11.1. Information on toxicological effects (of the substance):** *Non-toxic*

**11.1.1. Acute toxicity:** *Non-toxic*

**11.1.2. Skin corrosion / irritation:** *Non-irritating*

**11.1.3. Respiratory or skin sensitisation:** *None*

**11.1.4. Germ cell mutagenicity:** *None*

**11.1.5. Carcinogenicity:** *No effect determined according to IARC (International Agency for Research on Cancer)*

**11.1.6. Reproductive toxicity:** *None*

**11.1.7. Specific target organ toxicity (STOT) (single exposure):** *Indistinctive*

**11.1.8. Specific target organ toxicity (STOT) (repeated exposure):** *Indistinctive*

**11.1.9. Aspiration hazard:** *None*

**12. ECOLOGICAL INFORMATION**

**12.1 Toxicity:** *Non-toxic*

**12.2 Persistence and degradability:** *No data available*

**12.3 Bioaccumulative potential:** *No bioaccumulative properties*

**12.4 Mobility in the soil:** *No data available*

**12.5 PBT and vPvB assessment results:** *Neither PBT nor vPvB assessment has been carried out according to Annex XIII to Regulation (EC) No.1907/2006*

**12.6 Other adverse effects:** *None*

**13. DISPOSAL CONSIDERATIONS**

Requirements: *Do not discharge waste into any place where its accumulation could be dangerous. Waste is allowed to be released only at well-ventilated sites*

**13.1 Waste treatment methods**

Disposal methods of waste and contaminated packages of the substance/preparation (incineration, recycling, disposal at a dumping site, etc.): *Not required*

**14. TRANSPORT INFORMATION**

**14.1 UN number**

1072 (for gaseous)

1073 (for liquid)

**14.2 UN proper shipping name**

Oxygen compressed

Oxygen refrigerated, liquid

**14.3 Transport hazard class(es)**

2

**14.4 Packing group**

None

**14.5 Dangerous goods code:**

25 (oxygen compressed)

225 (oxygen refrigerated, liquid)

**14.6 Environmental hazards:**

*Oxygen shall be transported in cylinders with covers. The cylinders shall be transported in horizontal position with partitions between cylinders or in special containers in vertical position (necessarily with a guard protecting against possible falling over).*

*When the quantity of the buyable oxygen in the cylinders does not exceed 1000 l for a transport unit, the ADR requirements stipulated in subsection 1.1.3.6.3 of the restructured ADR edition as of 2001 shall be applied partially.*

*Liquid oxygen shall be transported by motor transport in cryogenic tanks and containers (tankers) that are in compliance with the requirements of Clause 6.7.4 of ADR*

**14.7 Special precautions for user: None**

**14.8 Transport in bulk according to Annex II of MARPOL 73/78 II and IBC Code**

Not applicable

**15. REGULATORY INFORMATION**

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

Legal acts regulating the classification and labelling of the substance/preparation, restriction on its usage, requirements on personnel safety and health, limit values in work area, waste handling, etc.:

– Regulation (EC) No 1272/2008 of the European Parliament and of the Council on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 published in Official Journal of the European Union No. L353, Vol. 51, 31 Dec 2008

– Regulation (EC) No. 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH)

– Commission Regulation (EU) No. 453/2010 amending Regulation (EC) No. 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH)

- Hygiene Norm HN 23 Limit Values of Impact of Chemical Substances on Occupation. General Requirements for Impact Measurement and Assessment

– Applicable Regulations on Protection of Workers from Exposure of Chemical Substances at Work and Regulations on Protection of Workers from the Risks Related to Exposure to Carcinogens or Mutagens at Work

– Hygiene Norm HN 36 Banned and Restricted Substances

– Applicable Law on Waste Management of the Republic of Lithuania

– Applicable Waste Management Rules

– Applicable Rules on Labelling of Items (Goods) Sold in the Republic of Lithuania and Indication of Prices

– Applicable Company Standard IST 156667399-66, Technological Regulation TR-796-06

– Hygiene Norm HN 24 Requirements for the Safety and Quality of Drinking Water

– Applicable Standard LST EN 1089-3 Transportable Gas Cylinders. Gas Cylinder Identification (excluding LPG). Part 3: Colour Coding

– Applicable Provisional Usage Rules of Seamless Gas Cylinders

– European Agreement Concerning the International Carriage of Dangerous Goods by Road (ADR)

– Regulations Concerning the International Carriage of Dangerous Goods by Rail (RID)

– *International Maritime Dangerous Goods Code (IMDG)*

Additional information indicated on the label of the substance/preparation package (container):

*Visual sign No.4 “Keep away from sunlight” as per LST EN ISO 780*

### **15.2 Chemical safety assessment**

Chemical assessment of components of packaging gases and packaging gas mixtures has been not carried as they are classified as exclusions according to Annex V to Regulation (EC) No. 1907/2006 and are not registered.

### **16. OTHER INFORMATION**

Abbreviations and acronyms:

*H270 – May cause or intensify fire; oxidiser*

*H280 – Contains gas under pressure; may explode if heated*

*H281 – Contains refrigerated gas; may cause cryogenic burns or injury*

*P244 – Keep reduction valves free from grease and oil*

*P282 – Wear cold insulating gloves/face shield/eye protection*

*P336 – Thaw frosted parts with lukewarm water. Do not rub affected area*

*P315 – Get immediate medical advice/attention*

*P410+P403 – Protect from sunlight. Store in a well-ventilated place*

*P403 – Store in a well-ventilated place*

*P250 – Do not subject to shock*

*R8 – Contact with combustible material may cause fire*

*S17 – Keep away from combustible material*

*S9 – Keep container in a well-ventilated place*

*O – Oxidising*

*ADR – European Agreement Concerning the International Carriage of Dangerous Goods by Road*

*RID – Regulations Concerning the International Carriage of Dangerous Goods by Rail*

*SMGS – Agreement on the International Goods Transport by Rail*

*Information contained in this Material Safety Data Sheet shall be available for all persons work whereof is relevant to the substance/preparation. Data provided herein is in line with knowledge available for us and is intended to define the substance/preparation in terms of safety and health protection at work as well as in terms of environmental issues. Information contained in this Material Safety Data Sheet will be supplemented in case new data about the effect of the substance/preparation on health and environment as well as new data about prevention measures in order to decrease risk or to eliminate risk completely become available. Information contained herein reveals no other features of the substance/preparation.*

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End of the Safety Data Sheet

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