DANGER





SECTION 1 : IDENTIFICATION

Product identifier

Trade name : Oxygen
SDS no : QSE-PD08
Chemical description : Oxygen
Chemical formula : O2

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

Relevant identified uses :

- Industrial and professional. Perform risk assessment prior to use.
- Test gas/Calibration gas.
- Welding, cutting, heating and brazing.
- Laboratory use.
- Shield gas for welding processes.
- Use for manufacture of electronic/photovoltaic components.
- Water treatment.
- Laser gas.
- Contact supplier for more information on uses.

Details of the supplier of the safety data sheet

Company identification : Société d'oxygène et d'acétylène du Liban S.A.L.
Chekka (North Lebanon), Industrial Area, SOAL Building, Al Sahl Street
Dekwaneh (Mount Lebanon), Industrial Area, SOAL Building , Al Midane Street
customer.care@soal.com.lb
www.soal.com.lb

Emergency telephone number

Emergency telephone number :+961 76 111 900 // +961 26 543 381-7,9 // +961 01 692 380-5

SECTION 2 : HAZARDS IDENTIFICATION

Classification of the substance or mixture

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

Physical hazards:

- Oxidizing Gases, Category 1 H270
- Gases under pressure : Compressed gas H280

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

O; R8

Label elements

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

Hazard pictograms (CLP) :



GHS03



GHS04

Signal word (CLP) : Danger

Hazard statements (CLP) : H270 - May cause or intensify fire; oxidizer.
H280 - Contains gas under pressure; may explode if heated.

Precautionary statements (CLP)

- Prevention : P220 - Keep/Store away from clothing/.../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 : P403 - Store in a well-ventilated place.
  P410+P403 - Protect from sunlight. Store in a well-ventilated place.

Other hazards: None

SECTION 3: COMPOSITION/ INFORMATION OR INGREDIENTS

Name	Product Identifier	%	Classification according to Directive 67/548/EEC	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	100	O; R8	Ox. Gas 1, H270 Press. Gas (Comp.), H280

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

SECTION 4: FIRST AID MEASURES

Description of necessary first aid measures

- Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
- Inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in a recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

- Skin contact: Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion: As this product is a gas, refer to the inhalation section.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Inhalation : No known significant effects or critical hazards.
- Ingestion : As this product is a gas, refer to the inhalation section.
- Skin contact : Contact with rapidly expanding gas may cause burns or frostbite.
- Frostbite : Try to warm up the frozen tissues and seek medical attention
- Eye contact : Contact with rapidly expanding gas may cause burns or frostbite.

Over-exposure signs/symptoms

- Skin contact: No specific data
- Ingestion: No specific data
- Inhalation No specific data
- Eye contact : No specific data

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician : Treat symptomatically. Contact poison treatment specialists immediately if large quantities have been ingested or inhaled. Description of necessary first aid measures
- Specific treatments : No specific treatment
- Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation

SECTION 5: FIREFIGHTING MEASURES

Extinguishing media

- Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media: None known
- Specific hazards arising from the chemical: Contains gas under pressure. Oxidizing material. This material increases the risk of fire and may aid combustion. Contact with combustible material may cause fire. In a fire or if heated, a pressure increase will occur and the container may burst or explode.
- Hazardous thermal decomposition products: No specific data
- Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Contact the supplier immediately for specialist advice. Move containers from the fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. If involved in fire, shut off flow immediately if it can be done without risk.
- Special protective equipment for fire-fighters: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

SECTION 6: ACCIDENTAL RELEASE MEASURES

- **Personal precautions :**
  - Evacuate area
  - Ensure adequate air ventilation
  - Eliminate ignition sources
  - Ensure adequate air ventilation
  - Prevent from entering sewers, basements or any place where its accumulation can be dangerous
  - Act in accordance with the local emergency plan
  - Stay upwind

- **Environmental Precautions :**
  - Try to stop release
  - Prevent from entering sewers, basements , or any place where its accumulation can be dangerous

- **Clean up methods :**
  - Immediately contact emergency personnel.
  - Stop leaking if without risk.
  - Use spark-proof tools and explosion-proof equipment

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling

- **Safe use of the product :**
  - The substance must be handled in accordance with good industrial hygiene and safety procedures.
  - Only experienced and properly instructed persons should handle gases under pressure.
  - Consult suppliers for specific recommendations.
  - Consider pressure relief device(s) in gas installations.
  - Ensure the complete gas system was (or is regularly) checked for leaks before use.
  - Do not smoke while handling products.
  - 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.
  - Use only oxygen approved lubricants and oxygen approved sealings.
  - Use only with equipment cleaned for oxygen service and rated for cylinder pressure.
  - Do not breathe gas.
  - Avoid releasing products into the atmosphere.
- **Safe handling of the gas receptacle** :
  - Refer to supplier's container handling instructions.
  - Do not allow backfeed into the container.
  - Protect cylinders 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.
  - 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.

- If the user experiences any difficulty operating cylinder valves, discontinue use and contact the 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.
- Replace valve outlet caps or plugs and container caps where supplied as soon as the container is disconnected from equipment.
- Close container valve after each use and when empty, even if still connected to equipment.
- 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 cylinder contents.
- Sucking back of water into the container must be prevented.
- Open the valve slowly to avoid pressure shock.

- **Conditions for safe storage, including any incompatibilities:**
  - Containers should not be stored in conditions likely to encourage corrosion.
  - Container valve guards or caps should be in place.
  - Containers should be stored in the vertical position and properly secured to prevent them from falling over.
  - Stored containers should be periodically checked for general condition and leakage.
  - Keep container below 50°C in a well ventilated place.
  - Segregate from flammable gases and other flammable materials in store.
  - Store containers in locations free from fire risk and away from sources of heat and ignition.
  - Keep away from combustible materials.

- **Specific end use(s)** : None.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

OEL (Occupational Exposure Limits) : No data available.
DNEL (Derived-No Effect Level) : No data available.
PNEC (Predicted No-Effect Concentration) : No data available.

Exposure controls

- **Appropriate engineering controls:**
  - Provide adequate general and local exhaust ventilation.
  - Systems under pressure should be regularly checked for leakages.
  - Avoid oxygen rich (>23,5%) atmospheres.
  - Gas detectors should be used when oxidizing gases may be released.
  - Consider work permit system e.g. for maintenance activities.

- **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:
- Wear suitable hand, body and head protection. Wear goggles with suitable filter lenses when use is cutting/welding.
- 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)

★ Skin protection
- Hand protection : Wear working gloves when handling gas containers (Standard EN 388 - Protective gloves against mechanical risk)
- 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
★ Thermal hazards : None necessary

- **Environmental exposure controls** : None necessary

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

- Appearance
  - Physical state at 20°C / 101.3kPa : Gas
  - Color : Colorless
- Odor : No odor warning properties
- Odor threshold : Odour threshold is subjective and inadequate to warn of overexposure
- pH value : Not applicable
- Molar mass : 32 g/mol
- Melting point : -219 °C
- Boiling point : -183 °C
- Flash point : Not applicable for gases and gas mixtures
- Critical temperature [°C] : -118 °C
- Evaporation rate (ether=1) : Not applicable for gases and gas mixtures
- Flammability range : Non flammable
- Vapor pressure [20°C] : Not applicable
- Vapor pressure [50°C] : Not applicable
- Relative density, gas (air=1) : 1.1
- Relative density, liquid (water=1) : 1.1
- Solubility in water : 39 mg/l
- Partition coefficient n-octanol/water [log Kow] : Not applicable for inorganic gases
- Auto-ignition temperature : Not applicable
- Viscosity [20°C] : Not applicable

- Explosive Properties : Not applicable
- Oxidizing Properties : Oxidiser
  - Coefficient of oxygen equivalency (Ci) : 1

Other information

- **Other data** : Gas/vapor heavier than air. May accumulate in confined spaces, particularly at or below ground level.

SECTION 10: STABILITY AND REACTIVITY

- Reactivity: No reactivity hazard other than the effects described in sub-sections below
- Chemical stability: Stable under normal conditions.
- Possibility of hazardous reactions: Violently oxidizes organic material.
- Conditions to avoid: None under recommended storage and handling conditions
- Incompatible materials:
  - May react violently with reducing agents.
  - May react violently with combustible materials.
  - 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.

- Hazardous decomposition products : None

SECTION 11:TOXICOLOGICAL INFORMATION

Toxicity information : No toxicological effects from this product

SECTION 12:ECOLOGICAL INFORMATION

Ecological effects information : No ecological damage caused by this product

SECTION 13:DISPOSAL CONSIDERATIONS

Disposal Methods: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Empty Airgas-owned pressure vessels should be returned to Airgas. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Do not puncture or incinerate the container.

SECTION 14:TRANSPORT INFORMATIONS

UN number

UN-No. : 1072

UN proper shipping name

Transport by road/rail (ADR/RID) : OXYGEN, COMPRESSED
Transport by air (ICAO-TI / IATA-DGR) : Oxygen, compressed
Transport by sea (IMDG) : OXYGEN, COMPRESSED

Transport hazard class(es)

Labeling:



2: Non-flammable, non-toxic gases



5.1 : Oxidizing substances

Transport by road/rail (ADR/RID)

Class : 2
Classification code : 1 O
Hazard identification number : 25
Tunnel Restriction : E - Passage forbidden through tunnels of category E

Transport by air (ICAO-TI / IATA-DGR)

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

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

Packing group

Transport by road/rail (ADR/RID) : Not applicable
Transport by air (ICAO-TI / IATA-DGR) : Not applicable
Transport by sea (IMDG) : Not applicable

Environmental hazards

Transport by road/rail (ADR/RID) : None.
Transport by air (ICAO-TI / IATA-DGR) : None.
Transport by sea (IMDG) : None.

Special precautions for user

Packing Instruction(s)

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

❖ Transport by air (ICAO-TI / IATA-DGR)
- Passenger and Cargo Aircraft : 200
- Cargo Aircraft only : 200

❖ 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 drivers are aware of the potential hazards of the load and know 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.
- Ensure the cylinder valve is closed and not leaking.
- Ensure valve outlet cap nut or plug (where provided) is correctly fitted.
- Ensure the valve protection device (where provided) is correctly fitted.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not applicable

SECTION 15: REGULATORY INFORMATION

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

EU-Regulations

Restrictions on use : None.
Seveso directive 96/82/EC : Listed.

National regulations

National legislation : Ensure all national/local regulations are observed.
Water hazard class (WGK) : -
Kenn-Nr. : 743
Chemical safety assessment : A CSA does not need to be carried out for this product.

SECTION 16: OTHER INFORMATION

NFPA Oxygen



