

**OXYGEN, REFRIGERATED LIQUID (O2)****AL610**

Label 2.2 : Non flammable, non toxic gas.



Label 5.1 : Oxidizing substances.

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

**Trade name** : OXYGEN, REFRIGERATED LIQUID (O2)  
**MSDS Nr** : AL610  
**Use** : Scientific applications Medical applications. Industrial applications.  
**Chemical formula** : O2  
**Company identification** : Air Liquide Australia Limited  
380 St. Kilda Road  
Melbourne 3004 Australia  
Tel: + 61 3 9697 9888  
Fax: + 61 3 9690 7107  
ALAEquiries@AirLiquide.com  
**Emergency phone nr** : 1800 812 588

**2 HAZARDS IDENTIFICATION**

**Hazard classification** : Not classified as hazardous according to NOHSC criteria.  
Classified as a dangerous good by the criteria of the ADG code.  
**Hazards identification** : Compressed gas.  
Oxidant. Strongly supports combustion. May react violently with combustible materials.  
**R Phrase(s)** : R8 : Contact with combustible material may cause fire.  
**S Phrase(s)** : S17 : Keep away from combustible material.

**3 COMPOSITION/INFORMATION ON INGREDIENTS**

**Substance / Preparation** : Substance.

Substance name	Contents	CAS No	EC No	Annex No	Classification
Oxygen	100 %	7782-44-7	231-956-9	008-001-00-8	O; R8

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

**4 FIRST AID MEASURES**

**First aid measures**  
**- Inhalation** : Continuous inhalation of concentrations higher than 75% may cause nausea, dizziness, respiratory difficulty and convulsion.  
Remove victim to uncontaminated area.

**5 FIRE-FIGHTING MEASURES**

**Specific hazards** : Exposure to fire may cause containers to rupture/explode.  
Supports combustion.  
**Hazardous combustion products** : None.  
**Extinguishing media**  
**- Suitable extinguishing media** : All known extinguishants can be used.

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## 5 FIRE-FIGHTING MEASURES (continued)

- Specific methods** : If possible, stop flow of product.  
Move away from the container and cool with water from a protected position.
- Special protective equipment for fire fighters** : None.

## 6 ACCIDENTAL RELEASE MEASURES

- Personal precautions** : Evacuate area.  
Ensure adequate air ventilation.  
Eliminate ignition sources.
- Environmental precautions** : Try to stop release.  
Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous.
- Clean up methods** : Ventilate area.

## 7 HANDLING AND STORAGE

- Storage** : Segregate from flammable gases and other flammable materials in store.  
Keep container below 50°C in a well ventilated place.
- Handling** : Use no oil or grease.  
Open valve slowly to avoid pressure shock.  
Suck back of water into the container must be prevented.  
Do not allow backfeed into the container.  
Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact your gas supplier if in doubt.  
Keep away from ignition sources (including static discharges).  
Refer to supplier's container handling instructions.

## 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

- Personal protection** : Do not smoke while handling product.  
Wear suitable hand, body and head protection. Wear goggles with suitable filter lenses when use is cutting/welding.  
Avoid oxygen rich (>21%) atmospheres.  
Ensure adequate ventilation.

## 9 PHYSICAL AND CHEMICAL PROPERTIES

- Physical state at 20 °C** : Gas.
- Colour** : Colourless gas.
- Odour** : No odour warning properties.
- Molecular weight** : 32
- Melting point [°C]** : -219
- Boiling point [°C]** : -183
- Critical temperature [°C]** : -118
- Vapour pressure [20°C]** : Not applicable.
- Relative density, gas (air=1)** : 1.1
- Relative density, liquid (water=1)** : 1.1
- Solubility in water [mg/l]** : 39
- Flammability range [vol% in air]** : Oxidiser.
- Auto-ignition temperature [°C]** : Not applicable.

**OXYGEN, REFRIGERATED LIQUID (O2)****AL610****9 PHYSICAL AND CHEMICAL PROPERTIES (continued)**

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

**10 STABILITY AND REACTIVITY**

**Hazardous decomposition products** : None.

**Materials to avoid** : May react violently with combustible materials.  
May react violently with reducing agents.  
Violently oxidises organic material.  
Keep equipment free from oil and grease.

**Conditions to avoid** : Consider the potential toxicity hazard due to the presence of chlorinated or fluorinated polymers in high pressure (> 30 bars) oxygen lines in case of combustion

**11 TOXICOLOGICAL INFORMATION**

**Toxicity information** : No known toxicological effects from this product.

**12 ECOLOGICAL INFORMATION**

**Ecological effects information** : No ecological damage caused by this product.

**13 DISPOSAL CONSIDERATIONS**

**General** : To atmosphere in a well ventilated place.  
Do not discharge into any place where its accumulation could be dangerous.  
Contact supplier if guidance is required.

**14 TRANSPORT INFORMATION****General information**

**UN No.** : 1073

**• Labelling ADG, IMDG, IATA**

: Label 5.1 : Oxidizing substances.  
Label 2.2 : Non flammable, non toxic gas.

**Labelling ADG**

: Label 2.2 : Non flammable, non toxic gas.  
Label 5.1 : Oxidizing substances.

**Land transport**

**H.I. nr** : 225

**Proper shipping name** : UN1073 OXYGEN, REFRIGERATED LIQUID, 2.2 (5.1), 30

**HAZCHEM - Emergency Action Code** : 2P

: 2 = Fine water spray.

*P = Risk of violent reaction or explosion. Recommended personal protective equipment : Liquid-tight chemical protective clothing and breathing apparatus. Appropriate measures : dilute.*

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**14 TRANSPORT INFORMATION (continued)**

- ADG Class : 2
- ADG Classification code : 3 O
- ADR Packing group : O
- Packing Instruction(s) - General : P203

**Sea transport**

- IMO-IMDG code : Class 2
- Proper shipping name : OXYGEN, REFRIGERATED LIQUID
- Class : 2.2
- IMO Packing group : O
- IMDG-Marine pollution : -
- Emergency Schedule (EmS) - Fire : F-C S-W
- Emergency Schedule (EmS) - Spillage : S-W
- Instructions - Packing : P203

**Air transport**

- ICAO/IATA : Packaging instructions cargo :  
Packaging instructions passenger:
- Proper shipping name : OXYGEN, REFRIGERATED LIQUID
- Class : 2
- IATA Packing group : O
- IATA-Label



- Passenger and Cargo Aircraft : DO NOT LOAD IN PASSENGER AIRCRAFT.
- Cargo Aircraft only : FORBIDDEN.
- Other transport information** : 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 that containers are firmly secured.
  - Ensure cylinder valve is closed and not leaking.
  - Ensure valve outlet cap nut or plug (where provided) is correctly fitted.
  - Ensure valve protection device (where provided) is correctly fitted.
  - Ensure there is adequate ventilation.
  - Compliance with applicable regulations.

**15 REGULATORY INFORMATION**

- EC Classification** : Annex No : 008-001-00-8  
O; R8
- EC Labelling**
- Symbol(s)** : O : Oxidizing
- R Phrase(s)** : R8 : Contact with combustible material may cause fire.
- S Phrase(s)** : S17 : Keep away from combustible material.



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Revised edition no : 2

Date : 10 / 5 / 2010

Supersedes : 18 / 12 / 2009

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#### 16 OTHER INFORMATION

Ensure all national/local regulations are observed.

Ensure operators understand the hazard of oxygen enrichment.

This Safety Data Sheet has been established in accordance with the applicable European Directives and applies to all countries that have translated the Directives in their national laws.

#### DISCLAIMER OF LIABILITY

: Before using this product in any new process or experiment, a thorough material compatibility and safety study should be carried out.

Details given in this document are believed to be correct at the time of going to press. Whilst proper care has been taken in the preparation of this document, no liability for injury or damage resulting from its use can be accepted.

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