

Oxygen (Liquid)

OXYGEN (Refrigerated)



DANGER
STRONG OXIDIZER
May cause fire or explosion

OXYGEN (Refrigerated)



WARNING
GAS UNDER PRESSURE
Contains refrigerated gas; may cause cryogenic burns or injury



Label 5.1 : Oxidizing substances.



Label 2.2 : Non flammable, non toxic gas.

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

Trade name : Oxygen (Liquid)
MSDS No. : AL008B
Chemical Formula : O₂
Company Identification : Air Liquide Egypt
Main Office : Polyom Building - 2nd floor
Area 22 - 1st Sector- Road 90 (Downtown)-5th Settlement-
11835 New Cairo-Cairo
Phone No. : +20 2 23221100
Fax : +20 2 25213100

2 HAZARDS IDENTIFICATION

Classification of the substance

- **Physical Hazard** : Gases under pressure - refrigerated liquefied gas
: Oxidizing gas
- **Health Hazard** : no acute toxicity

Label Elements

- **Hazard Pictogram**



- **Signal word** : Danger
- **Hazard Statement** : Contains refrigerated gas; may cause cryogenic burns or injury
: May cause or intensify fire; oxidizer

Oxygen (Liquid)**2 HAZARDS IDENTIFICATION (continued)****• Precautionary statements**

- **Prevention**
 - : Store away from combustible materials
 - : Keep reduction valves free from grease and oil
 - Note:** EIGA has proposed a new wording that has been accepted by the UN WG on PS: “Keep valve and fittings free from oil and grease”
 - : Wear cold insulating gloves / face shield / eye protection
- **Response**
 - : In case of fire, stop leak is safe to do so
- **Storage**
 - : Store in a well ventilated area

Other Hazard

- **Other hazards** Refrigerated liquefied gas. Contact with product may cause cold burns or frostbite. Strongly supports combustion. May react violently with combustible materials.

3 COMPOSITION / INFORMATION ON INGREDIENTS**Substance / Preparation****: Substance**

Substance Name	Contents	CAS No.	EC No.	Index No.	Classification
Oxygen (refrigerated)	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.
- **Skin / Eye Contact**
 - : Immediately flush eyes thoroughly with water for at least 15 minutes.
 - In case of frostbite spray with water for at least 15 minutes. Apply a sterile dressing. Obtain medical assistance.
- **Ingestion**
 - : Ingestion is not considered a potential route of exposure.

Oxygen (Liquid)**5 FIRE FIGHTING MEASURES**

Flammable class	: Non flammable
Specific hazards	: Exposure to fire may cause containers to rupture / explode
Hazardous Combustion Products	: None
Extinguishing media	
- Suitable extinguishing media	: All known extinguishants can be used.
Specific methods	: If possible stop flow of product. Move away from the container and cool with water from a protected position. If leaking do not spray water onto container. Water surrounding area (from protected position) to contain fire.
Special protective equipment for fire fighters	: None

6 ACCIDENTAL RELEASE MEASURES

Personal precautions	: Evacuate area Ensure adequate air ventilation. Eliminate ignition sources.
Environmental Precautions	: Use protective clothing : 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. Keep area evacuated and free from ignition sources until any spilled liquid has evaporated. (Ground free from frost).

7 HANDLING AND STORAGE

Storage	: Segregate from flammable gases and other flammable materials in store.
Handling	: Keep container below 50 degrees C in a well ventilated place. : Use no oil or grease. Open valves 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.

Oxygen (Liquid)**7 HANDLING AND STORAGE (continued)**

Keep away from ignition sources (including static discharge)
Refer to supplier's container handling instructions.

8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Personal protection : Do not smoke while handling product.
Ensure adequate ventilation.
Protect eyes, face and skin from liquid splashes.
Avoid oxygen rich (>21%) atmospheres.

9 PHYSICAL AND CHEMICAL PROPERTIES

Physical state at 20 degrees C : Refrigerated liquefied gas.
Colour : Bluish liquid
Odo(u)r : No odor warning properties
Molecular Weight : 32
Melting point (degrees C) : -219
Boiling point (degrees C) : -183
Critical temperature (degrees C) : -118
Vapour pressure, 20 degrees 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 (degrees C) : Not applicable

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

Oxygen (Liquid)**10 STABILITY AND REACTIVITY**

Stability and reactivity : May react violently with combustible materials.
May react violently with reducing agents.
Violently oxidizes organic material.
Liquid spillages can cause embrittlement of structural materials
Risk of explosion if split on organic structural materials (e.g. wood or asphalt)

11 TOXICOLOGICAL INFORMATION

Toxicity information : No toxicological effects from this product

12 ECOLOGICAL INFORMATION

Ecological effects information : Can cause frost damage to vegetation.

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

UN No. : 1073
H.I. nr : 225
ADR / RID
- **Proper shipping name** : OXYGEN, REFRIGERATED LIQUID
- **ADR Class** : 2
- **ADR / RID Classification code** : 3 O
- **Labelling ADR** :



: 2.2: Non flammable, non toxic gas

5.1: Oxidizing substances

Oxygen (Liquid)**14 TRANSPORT INFORMATION (continued)****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**

: Index 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.

16 OTHER INFORMATION

- May cause frostbite.
- Ensure all national / local regulations are observed.
- Ensure all operators understand the hazard of oxygen enrichment.
- This Material 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.
- 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.

Recommended uses and restrictions:

This MSDS is for information purposes only and is subject to change without prior notice. [Prior to purchase of products, please contact your local AIR LIQUIDE office for complete MSDS (with Manufacturer's name and emergency phone number)].

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