

## Liquid Oxygen

O2

**1 Identification of the substance/mixture and of the company/undertaking****Product identifier**

Trade name :	Oxygen (refrigerated)
SDS Nr :	SDS_097R_CLP
Chemical description :	Oxygen (refrigerated) CAS No :007782-44-7 EC No :231-956-9 Index No :008-001-00-8
Chemical formula :	O2
Registration-No. :	Listed in Annex IV / V REACH, exempted from registration.
Use :	Industrial and professional. Perform risk assessment prior to use.

**Manufacturer / Distributor:****Ehsan International Gases**

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#3, Karachi 74600, Pakistan.  
+92 21 36612091 – 36612907  
[info@ehsan.com.pk](mailto:info@ehsan.com.pk)  
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**2 Hazards identification****Classification of the substance or mixture****Hazard Class and Category Code****Regulation EC 1272/2008 (CLP)**

- **Physical hazards** : Oxidizing gases - Category 1 - Danger (H270)  
Gases under pressure - Refrigerated liquefied gas - Warning (H281)

**Classification EC 67/548 or EC 1999/** : O; R8 45

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O2

**Label elements****Labelling Regulation EC 1272/2008 (CLP)**• **Hazard pictograms**• **Hazard pictograms code** : GHS03 - GHS04• **Signal word**: Danger• **Hazard statements** : H270 : May cause or intensify fire; oxidiser.  
H281 : Contains refrigerated gas; may cause cryogenic burns or injury.• **Precautionary statements**- **Prevention** : P244 : Keep valves and fittings free from oil and grease

P220 : Keep/Store away from clothing/.../combustible materials.

P282 : Wear cold insulating gloves/face shield/eye protection.

- **Response** : P336+P315 : Thaw frosted parts with lukewarm water. Do not rub affected area. Get immediate medical advice / attention.

P370+P376 : In case of fire: Stop leak if safe to do so.

- **Storage** : P403 : Store in a well-ventilated place.**Labelling EC 67/548 or EC 1999/45****Symbol(s)** : O : Oxidizing**R Phrase(s)** : R8 : Contact with combustible material may cause fire.**S Phrase(s)** : S17 : Keep away from combustible material.**T Other hazards****Other hazards** : None.**3 Composition/information on ingredients**

<b>Substance / Preparation</b>		: Substance.				
Substance name	Contents	CAS No	EC No	Index No	Registration no	Classification
Oxygen (refrigerated)	:	100 %	7782-44-7	231-956-9	008-001-00-8	NOTE 1 O; R8

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 Ox. Gas 1 (H270)  
 Ox. Gas 1 (H270)  
 Press. Gas (H281)

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

1: Listed in Annex IV / V REACH, exempted from registration.

Note 2: Registration deadline not expired.

## Liquid Oxygen

O2

**4 First aid measures**

Full text of R-phrases see chapter 16

**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.

**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.
- 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.
- Personal precautions** : Evacuate area.  
Ensure adequate air ventilation.  
Eliminate ignition sources.  
Use protective clothing.
- 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.

**6 Accidental release measures**

Keep area evacuated and free from ignition sources until any spilled liquid has evaporated. (Ground free from frost).

## Liquid Oxygen

O2

**7 Handling and storage**

<b>Handling</b>	:	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.
<b>Storage</b>	:	Segregate from flammable gases and other flammable materials in store. Keep container below 50°C in a well ventilated place.

**8 Exposure controls/personal protection**

<b>Personal protection</b>	:	Do not smoke while handling product. Ensure adequate ventilation. Protect eyes, face and skin from liquid splashes. Avoid oxygen rich (>21%) atmospheres.
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**9 Physical and chemical properties**

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

## Liquid Oxygen

O2

**Auto-ignition temperature [°C]** : Not applicable.  
**Other data** : Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level.

**10 Stability and reactivity**

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

**Hazardous decomposition products** : None.

**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 number** : 1073 • Labelling ADR, IMDG, IATA

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O2

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

**Land transport****ADR/RID**

**H.I. nr** : 225  
**UN proper shipping name** : OXYGEN, REFRIGERATED LIQUID  
**Transport hazard class(es)** : 2  
**- ADR/RID Classification code** : 3 O  
**- Packing Instruction(s) - General** : P203  
**- Tunnel Restriction** : C/E Tank carriage: Passage forbidden through tunnels of category C, D and E; Other carriage: Passage forbidden through tunnels of category E

**Sea transport**

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

**Air transport**

**- ICAO/IATA**  
**- Proper shipping name** : OXYGEN, REFRIGERATED LIQUID  
**• Class** : 2.2  
**• Passenger and Cargo Aircraft** :  
**• Cargo Aircraft only** :

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**

**Safety, health and environmental** : Ensure all national/local regulations are observed.

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O2

regulations/legislation specific for the  
substance or mixture

Seveso regulation 96/82/EC : Listed

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### 16 Other information

May cause frostbite.

Ensure operators understand the hazard of oxygen enrichment.

**List of full text of R-phrases in section 3.** : R8 : Contact with combustible material may cause fire. **section 3.**

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**

: 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.

Details given in this document are believed to be correct at the time of going to press. Before using this product in any new process or experiment, a thorough material compatibility and safety study should be carried out.