

Safety Data Sheet

Product :

Oxygen (refrigerated)

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MSDS Nr : 097B_AL

Version : 1.01

Date : 31/07/2002

1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY

MSDS Nr	097B_AL
Product name	Oxygen (refrigerated)
Chemical formula	O ₂
Company identification	see heading and/or footer see paragraph 16 "OTHER INFORMATION"
Emergency phone numbers	see heading and/or footer see paragraph 16 "OTHER INFORMATION"

2 COMPOSITION/INFORMATION ON INGREDIENTS

Substance/Preparation	Substance.
Components/Impurities	Contains no other components or impurities which will influence the classification of the product.
CAS Nr	07782-44-7
EEC Nr (from EINECS)	231-956-9

3 HAZARDS IDENTIFICATION

Hazards identification	Refrigerated liquefied gas. Contact with product may cause cold burns or frostbite. Oxidant. Strongly supports combustion. May react violently with combustible materials.
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4 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	Supports combustion. Exposure to fire may cause containers to rupture/explode. Non flammable
Hazardous combustion products	None
Suitable extinguishing media	All known extinguishants can be used.

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

7 HANDLING AND STORAGE

Handling and storage	Use no oil or grease. Open valve slowly to avoid pressure shock. Segregate from flammable gases and other flammable materials in store. 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. Keep container below 50°C in a well ventilated place.
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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.
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9 PHYSICAL AND CHEMICAL PROPERTIES

Molecular weight	32
Melting point	-219 °C
Boiling point	-183 °C
Critical temperature	-118 °C
Relative density, gas	1.1 (air=1)
Relative density, liquid	1.1 (water=1)
Vapour Pressure 20°C	Not applicable.
Solubility mg/l water	39 mg/l
Appearance/Colour	Bluish liquid
Odour	No odour warning properties.
Autoignition temperature	Not applicable
Flammability range	Oxidiser.
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).
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11 TOXICOLOGICAL INFORMATION

General	No toxicological effects from this product.
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12 ECOLOGICAL INFORMATION

General	Can cause frost damage to vegetation.
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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.
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14 TRANSPORT INFORMATION

Proper shipping name	Oxygen, refrigerated liquid
UN Nr	1073
Class/Div	2.2
Subsidiary risk	5.1
ADR/RID Classification code	2, 3°O
ADR/RID Hazard Nr	225
Labelling ADR	Label 05: fire intensifying risk. Label 2: non flammable non toxic gas
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 they are firmly secured and: - there is adequate ventilation. - compliance with applicable regulations.

15 REGULATORY INFORMATION

Number in Annex I of Dir 67/548	008-001-00-8.
EC Classification	O;R8
-Symbols	O: Oxidising
-Risk phrases	R8 Contact with combustible material may cause fire.
-Safety phrases	S17 Keep away from combustible material.

16 OTHER INFORMATION

May cause frostbite.

Ensure all national/local regulations are observed.

Ensure operators understand the hazard of oxygen enrichment.

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.

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.

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

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