

# NATIONAL OXYGEN LIMITED

## MATERIAL SAFETY DATA SHEET – LIQUID OXYGEN

### Section 1 : PRODUCT AND COMPANY IDENTIFICATION

**Product name:** Oxygen (Liquid),  
**Supplier/ Manufacturer:** NATIONAL OXYGEN LTD.  
Pondy – Villupuram Road,  
Thiruvandarkoil,  
Puducherry – 605 102  
**Emergency phone:** 0413-. 2640446 to 448

### Section 2 : COMPOSITION/ INGREDIENT INFORMATION

I.S..	CONCENTRATION %	Ingredient Name			
309:2005	> 99	OXYGEN			

### Section 3 : HAZARD IDENTIFICATION

**Emergency Overview:** Oxygen gas is colorless, odorless, non-toxic cryogenic liquid or colorless, odorless, oxidizing gas.

Contact with oxygen liquid, its cold vapors or cold piping can cause frostbite and cryogenic burns to exposed tissue. Liquid releases will quickly vaporize to gas.

The chief physical hazard associated with releases of the gas is its oxidizing power which can greatly accelerate the burning rate for both common and exotic combustible materials. Emergency personnel must practice extreme caution when approaching oxygen releases because of the potential for intense fire.

**Route of entry:** Inhalation, skin and eye contact.

#### Effects of acute exposure

**Eye contact:** Can cause frostbite (liquid form).  
No adverse effects from gas.

**Skin contact:** Can cause frostbite (liquid form).  
No adverse effects from gas.

**Inhalation:** May cause breathing difficulty.  
Prolonged exposure to high oxygen levels (>75%) can cause central nervous system depression: signs/symptoms can include headache, dizziness, drowsiness, poor coordination,.

**Ingestion:** Not a likely route of exposure.

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### Section 4 : FIRST AID MEASURES

**Skin contact:** Remove contaminated clothing.  
Treat for frostbite if necessary by gently warming affected areas.  
Consult a physician.

**Eye contact:** Immediately flush eyes with plenty of water for at least 15 minutes.  
Consult an ophthalmologist.

**Inhalation:** **RESCUERS SHOULD NOT ATTEMPT TO RETRIEVE VICTIMS OF EXPOSURE TO THIS PRODUCT WITHOUT ADEQUATE PERSONAL PROTECTIVE EQUIPMENT. At a minimum, Self-Contained Breathing Apparatus should be worn.**

Remove victim(s) to fresh air, as quickly as possible. If not breathing qualified personnel should administer artificial respiration. Get medical attention.  
Keep person warm and at rest.

**Ingestion:** No first aid should be needed.  
Not considered a potential route of exposure.

### Section 5 : FIRE FIGHTING MEASURES

**Flammability:** Oxidizer.

**Conditions of flammability:** Contact with flammable materials.  
Vigorously accelerates combustion.

**Extinguishing media:** Use appropriate extinguishing media for surrounding fire.

**Special procedures:** Self-contained breathing apparatus required.  
Firefighters should wear the usual protective gear.  
Cool fire exposed containers with water spray.  
Personnel should be evacuated, if necessary, to upwind area.  
Remove containers from fire area without risk.

### Section 6 : ACCIDENTAL RELEASE MEASURES

**Leak/Spill:** Evacuate all non-essential personnel.  
Stop leak without risk.  
Keep combustible materials away from spill.  
Ventilate. Eliminate all sources of ignition.  
Allow to evaporate to atmosphere.  
Do not walk on or roll equipment over the spill  
Wear gloves and goggles  
Ventilate area. Monitor the surrounding area for Oxygen level.

### Section 7 : HANDLING AND STORAGE

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**Handling procedures and equipment:** Never allow any unprotected part of the body to touch uninsulated pipes or vessels that contain cold fluids. The extremely cold metal of the container will cause moist flesh to stick fast and tear when one attempts to withdraw from it.

Liquid Oxygen is extremely cold and is under pressure. A complete hose failure can result in a large release of Oxygen and violent movement of the hose and associated equipment, which may cause severe injury or death. Special care must be taken when depressurizing and disconnecting hoses.

Use adequate ventilation.

Avoid inhalation.

Never work on a pressurized system.

If there is a leak, close the upstream valve, blow down the system by venting to a safe place, then repair the leak.

**Storage requirements:** Use storage containers, piping, valves and fittings designed for storage and distribution of Liquefied Oxygen and vaporized (Gaseous) Oxygen.

### Section 8 : EXPOSURE CONTROLS / PERSONAL PROTECTION

#### Precautionary Measures

**Gloves/Type:**



Loose fitting cryogenic gloves.

**Eye/Type:** As per local regulations.

**Footwear/Type:** Safety boots per local regulations.

**Clothing/Type:** Wear adequate protective clothes.

**Other/Type:** Eye wash facility should be in close proximity.  
Emergency shower should be in close proximity.

**Ventilation requirements:** Mechanical ventilation is satisfactory.  
Local exhaust at points of emission preferred.

### Section 9 : PHYSICAL AND CHEMICAL PROPERTIES

**Physical state:** Liquid

**Appearance & odor:** Light blue, odorless liquid.

**Odor threshold (PPM):** Odorless.

**Vapor pressure :** Gas@ 70°F (21°C)

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**Vapor sp. gravity (air=1):** 0.967 @ 70°F (21°C)

**Volatiles (% by volume)** 100%

**Boiling point :** -183°C (760 mmHg)  
-297.4°F

**Freezing point :**

-218.8°C  
-361.8°F

**Solubility in water (%):** Slight.

### Section 10 : STABILITY AND REACTIVITY

**Chemical stability:** Product is stable.

**Conditions of reactivity:** Heat

**Hazardous  
polymerization:** Will not occur.

**Incompatible substances:** Combustible materials.  
Oils or grease.  
Flammable materials.

### Section 11: DISPOSAL CONSIDERATIONS

**Waste disposal:** Gas will dissipate in air.

