

# NATIONAL OXYGEN LIMITED

## MATERIAL SAFETY DATA SHEET - GASEOUS OXYGEN

### Section 1 : PRODUCT AND COMPANY IDENTIFICATION

**Product name:** Oxygen (Gaseous),

**Supplier/ Manufacturer:** M/S National Oxygen Limited  
Pondy – Villupuram Road,  
Thiruvandarkoil,  
Pondicherry – 605 102

**Emergency phone:** 0413-2640446 to 48.

### Section 2 : COMPOSITION/ INGREDIENT INFORMATION

I.S.	CONCENTRATION %	Ingredient Name			
309:2005	Typically > 99 (MSDS also applies to 90 - 99%)	OXYGEN (+N2 & Ar)			

### Section 3 : HAZARD IDENTIFICATION

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

The primary health hazard at atmospheric pressure is respiratory system irritation after exposure to high oxygen concentrations. Maintain oxygen levels in air above 19.5% and below 23.5%. While up to 50% oxygen can be breathed for more than 24 hours without adverse effects, high concentrations in open air accelerate combustion and increase the risk of fire and explosion of combustible or flammable materials.

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

#### Effects of acute exposure

**Eye contact:** No adverse effects expected.

**Skin contact:** No adverse effects expected. .

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

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headache, dizziness, drowsiness, poor coordination  
May cause coughing and chest pain.  
May cause lung damage.  
May cause soreness of the throat.

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

### Section 4 : FIRST AID MEASURES

**Skin contact:** None required.

**Eye contact:** None required.

**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 if without risk.

### Explosion Data

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**Sensitivity to mechanical impact:** Avoid impact against container.

<b>Section 6 : ACCIDENT RELIEF MEASURES</b>
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**Leak/Spill:**

Evacuate all non-essential personnel.

Stop leak without risk.

Wear gloves and goggles

Use a self-contained breathing apparatus.

Ventilate area. Monitor the surrounding area for Oxygen level

**Section 7 : HANDLING AND STORAGE**

**Handling procedures and equipment:** Protect system components against physical damage. 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 Gaseous Oxygen. Protect cylinders against physical damage. Store in cool, dry, well-ventilated, fireproof area, away from flammable materials and corrosive atmospheres. Store away from heat and ignition sources and out of direct sunlight. Do not store near elevators, corridors or loading docks. Do not allow area where cylinders are stored to exceed 52°C (125°F).

Move cylinders with a suitable hand-truck. Do not drag, slide or roll cylinders. Do not drop cylinders or permit them to strike each other. Secure cylinders firmly. Leave the valve protection cap in-place (where provided) until cylinder is placed into service and after it is taken out of service.

Use designated CGA fittings and other support equipment. Do not use adapters. Do not heat cylinder by any means to increase the discharge rate of the product from the cylinder. Use check valve or trap in discharge line to prevent hazardous backflow into the cylinder. Do not use oils or grease on gas-handling fittings or equipment.

After use, close main cylinder valve. Replace valve protection cap (where provided). Mark empty cylinders "EMPTY".

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### Section 8 : EXPOSURE CONTROLS / PERSONAL PROTECTION

#### Precautionary Measures

**Gloves/Type:** Wear appropriate 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. Ensure oxygen concentration remains above 19.5% and Carbon Dioxide concentration does not exceed 5000 ppm, Local exhaust at points of emission preferred.

### Section 9 : PHYSICAL AND CHEMICAL PROPERTIES

**Physical state:** Gas

**Appearance & odor:** Colorless, odorless gas.

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

**Vapor pressure :** Gas@ 70°F (21°C)

**Vapor sp. gravity (air=1):** 1.11 @ 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.

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**Hazardous decomposition products:** None.

### **Section 11 : DISPOSAL CONSIDERATIONS**

**Waste disposal:** Gas will dissipate in air. Cylinders should be returned in the original shipping container, properly labeled, with any valve outlet plugs or caps secured and valve protection cap in place.