

NATIONAL OXYGEN LIMITED

MATERIAL SAFETY DATA SHEET - LIQUID NITROGEN

Section 1 : PRODUCT AND COMPANY IDENTIFICATION

Product name: Nitrogen (Liquid),

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			
1747:1972	> 99	NITROGEN			

Section 3 : HAZARD IDENTIFICATION

Emergency Overview: Nitrogen gas is colorless, odorless and non-flammable.
It is non-toxic. The primary health hazard is asphyxiation by displacement of oxygen. Maintain oxygen levels above 19.5%.
Contact with the liquid or cold gas can cause freezing of exposed tissue.

Route of entry: Inhalation, skin and eye contact.

Effects of acute exposure

Eye contact: Can cause frostbite (liquid form).
Vapor may cause a stinging sensation.

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

Inhalation: May cause dizziness.
Asphyxiant.
Can cause vomiting.
May result in unconsciousness.
May cause excitation, excess salivation, rapid breathing.
May cause headaches and drowsiness.
May cause stinging of the nose and throat.

Ingestion: Not a likely route of exposure.

Effects of chronic exposure: Damage to retinal ganglion cells and central nervous system may occur due to the presence of carbon dioxide.

NATIONAL OXYGEN LIMITED

MATERIAL SAFETY DATA SHEET - LIQUID NITROGEN

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.
If breathing is difficult, administer oxygen.

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

Section 5 : FIRE FIGHTING MEASURES

Flammability: Not flammable.

Conditions of flammability: Will not burn.

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

Sensitivity to mechanical impact: Avoid impact against container.

Explosive power: Closed containers may rupture or explode due to pressure build-

NATIONAL OXYGEN LIMITED

MATERIAL SAFETY DATA SHEET - LIQUID NITROGEN

up when exposed to extreme heat.

Section 6 : ACCIDENT RELIEF MEASURES

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. Oxygen must be at least 19.5% before personnel may be allowed into the area without self-contained breathing apparatus.

If the area must be entered by emergency personnel, self-contained breathing apparatus, Kevlar gloves, and appropriate foot and leg protection must be worn.

Section 7 : HANDLING AND STORAGE

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.

Protect system components against physical damage. Check all hoses and transfer equipment before filling them with the liquid. Replace any worn or cut hoses prior to use.

Liquid Nitrogen is extremely cold and is under pressure. A complete hose failure can result in a large release of Nitrogen 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 Nitrogen and vaporized (Gaseous) Nitrogen.

Section 8 : EXPOSURE CONTROLS / PERSONAL PROTECTION

Precautionary Measures

NATIONAL OXYGEN LIMITED

MATERIAL SAFETY DATA SHEET - LIQUID NITROGEN

Gloves/Type:

Work 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%.
Local exhaust at points of emission preferred.

Section 9 : PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Liquid

Appearance & odor: Colorless, odorless.

Odor threshold (PPM): Odorless.

Vapor pressure : Gas@ 70°F (21°C)

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

Volatiles (% by volume) 100%

Boiling point : -195.8°C (760 mmHg)
-320.4°F

Freezing point : -209.9°C
-345.8°F

Solubility in water (%): Slight.

Section 10 : STABILITY AND REACTIVITY

Chemical stability: Product is stable.

Conditions of reactivity: Heat

Hazardous polymerization: Will not occur.

NATIONAL OXYGEN LIMITED

MATERIAL SAFETY DATA SHEET - LIQUID NITROGEN

Hazardous decomposition products: None

Section 11 : DISPOSAL CONSIDERATIONS

Waste disposal: Gas will dissipate in air.