

# Ellenbarrie Industrial Gases Limited Material Safety Data Sheet

## 1. Chemical Product and Company Identification

<b>Product Name:</b>	Nitrogen	<b>Trade Name:</b>	Nitrogen
<b>Product Use:</b>	Many.		
<b>Chemical Name:</b>	Nitrogen	<b>Synonym:</b>	NA
<b>Chemical Formula:</b>	N <sub>2</sub>	<b>Chemical Family:</b>	Inert gas.
<b>Telephone:</b>	<b>Emergencies:</b>	<b>Supplier</b>	Ellenbarrie Industrial Gases Limited
	*033-25828791	<b>/Manufacture:</b>	3A, Ripon Street, Kolkata-700016
	*033-27094398	<b>Phone:</b>	033-22292441, 22291923, 22491922
	*08924-205105	<b>Fax:</b>	033-22493396

*\*Call emergency numbers 24 hours a day only for spills, leaks, fire, exposure, or accidents involving this product. For routine information, contact your supplier or Ellenbarrie Industrial Gases Limited sales representative.*

## 2. Composition and Information on Ingredients

INGREDIENTS	% (VOL)	CAS NUMBER	LD <sub>50</sub> (Species & Routes)	LC <sub>50</sub> (Rat, 4 hrs.)	TLV-TWA (ACGIH)
Nitrogen	100	7727-37-9	Not applicable.	Not available.	Simple asphyxiant.

## 3. Hazards Identification

### Emergency Overview

**CAUTION! High-pressure gas. Can cause rapid suffocation. May cause dizziness and drowsiness. Self-contained breathing apparatus may be required by rescue workers.**

**ROUTES OF EXPOSURE:** Inhalation.

**THRESHOLD LIMIT VALUE:** TLV-TWA Data from 2004 Guide to Occupational Exposure Values (ACGIH).

### EFFECTS OF A SINGLE (ACUTE) OVEREXPOSURE:

**INHALATION:** Asphyxiant. Effects are due to lack of oxygen. Moderate concentrations may cause headaches, drowsiness, dizziness, excitation, excess salivation, vomiting, and unconsciousness. Lack of oxygen can kill.

**SKIN CONTACT:** No harm expected from vapour.

**SKIN**

**ABSORPTION:** No evidence of adverse effects from available information.

**SWALLOWING:** This product is a gas at normal temperature and pressure.

**EYE CONTACT:** No harm expected.

### EFFECTS OF REPEATED

**(CHRONIC) OVEREXPOSURE:** No evidence of adverse effects from available information.

### OTHER EFFECTS OF OVEREXPOSURE:

None known.

### MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE:

The toxicology and the physical and chemical properties of this product suggest that overexposure is unlikely to aggravate medical condition.

### SIGNIFICANT LABORATORY DATA WITH POSSIBLE RELEVANCE TO HUMAN HEALTH HAZARD EVALUATION:

None currently known.

**CARCINOGENICITY:**

Not listed as carcinogen by OSHA, NTP or IARC.

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**4. First Aid Measures**

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**INHALATION:**

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

**SKIN CONTACT:**

None expected.

**SWALLOWING:**

This product is a gas at normal temperature and pressure.

**EYE CONTACT:**

Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. See a physician, preferably an ophthalmologist, immediately.

**NOTES TO PHYSICIAN:**

*There is no specific antidote. Treatment of over-exposure should be directed at the control of symptoms and the clinical condition.*

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**5. Fire Fighting Measures**

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<b>FLAMMABLE:</b>	No.	<b>IF YES, UNDER WHAT CONDITIONS?</b>	Not applicable.
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<b>FLASH POINT</b> <b>(Test method)</b>	Not applicable.	<b>AUTOIGNITION</b> <b>TEMPERATURE:</b>	Not applicable.
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<b>FLAMMABLE LIMITS</b> <b>IN AIR, % by volume:</b>	<b>LOWER:</b>	Not applicable.	<b>UPPER:</b>	Not applicable.
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**EXTINGUISHING MEDIA:**

This material cannot catch fire. Use media appropriate for surrounding fire.

**SPECIAL FIRE FIGHTING PROCEDURES:**

**CAUTION! High-pressure gas.** Evacuate all personnel to a safe distance. Immediately deluge containers with water spray from maximum distance until cool, then move containers away from fire area if without risk.

**UNUSUAL FIRE AND EXPLOSION HAZARD:**

Gas cannot catch fire. Container may rupture due to heat of fire. No part of a container should be subjected to a temperature higher than 52°C. Most containers are provided with a pressure relief device designed to vent contents when they are exposed to elevated temperature.

**HAZARDOUS COMBUSTION PRODUCTS:**

None.

**SENSITIVITY TO IMPACT:**

Avoid impact against container.

**SENSITIVITY TO STATIC DISCHARGE:**

Not applicable.

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## 6. Accidental Release Measures

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### STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:

**CAUTION! High-pressure gas.** Evacuate all personnel from danger area. Use self-contained breathing apparatus where needed. Shut off flow if you can do so without risk. Ventilate area or move cylinder to a well-ventilated area. Test for sufficient oxygen, especially in confined spaces, before allowing reentry.

### WASTE DISPOSAL METHOD:

Slowly release into atmosphere outdoors. Keep personnel away. Discard any product, residue, disposable container, or liner in an environmentally acceptable manner, in full compliance with federal, provincial, and local regulations. If necessary, call your local supplier for assistance.

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## 7. Handling and Storage

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### PRECAUTIONS TO BE TAKEN IN STORAGE:

Store and use with adequate ventilation. Firmly secure cylinders upright to keep them from falling or being knocked over. Screw valve protection cap firmly in place by hand. Store away from direct sunlight. Store only where temperature will not exceed 52°C. Store full and empty cylinders separately. Use a first-in, first-out inventory system to prevent storing full cylinders for long periods.

### PRECAUTIONS TO BE TAKEN IN HANDLING:

Protect cylinders from damage. Use a suitable hand truck to move cylinders; do not drag, roll, slide, or drop. Never attempt to lift a cylinder by its cap; the cap is intended solely to protect the valve. Never insert an object (e.g., wrench, screwdriver, and pry bar) into cap openings; doing so may damage the valve and cause a leak. Use an adjustable strap wrench to remove over-tight or rusted caps. Open valve slowly. If valve is hard to open, discontinue use and contact your supplier. For other precautions, see section 16.

### OTHER HAZARDOUS CONDITIONS OF HANDLING, STORAGE, AND USE:

**High pressure gas!!!** Use piping and equipment adequately designed to withstand pressures to be encountered. **Gas can cause rapid suffocation due to oxygen deficiency.** Store and use with adequate ventilation. Close valve after each use; keep closed even when empty. **Prevent reverse flow.** Reverse flow into cylinder may cause rupture. Use a check valve or other protective device in any line or piping from the cylinder. **When returning cylinder to supplier,** be sure valve is closed, then install valve outlet plug tightly. **Never work on pressurized system.** If there is a leak, close the cylinder valve. Vent the system down in a safe and environmentally sound manner in compliance with all federal, provincial, and local laws; then repair the leak. **Never place a compressed gas cylinder where it may become part of an electrical circuit.**

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## 8. Exposure Controls/Personal Protection

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### VENTILATION/ENGINEERING CONTROLS:

#### LOCAL EXHAUST:

Use a local exhaust system, if necessary, to maintain an adequate supply of oxygen in the worker's breathing zone.

#### MECHANICAL (general):

Acceptable if it can maintain an adequate supply of oxygen in the worker's breathing zone.

#### SPECIAL:

None.

#### OTHER:

None.

### PERSONAL PROTECTION:

#### RESPIRATORY PROTECTION:

Use air supplied respirator when working in confined space or where local exhaust or ventilation does not keep exposure below a safe level. Select in accordance with the provincial regulations or guidelines. Selection should also be based on the current CSA standards Z94.4, "Selection, care and use of respirators". Respirators should be approved by NIOSH and MSHA.

Wear work gloves when handling cylinders.

#### SKIN PROTECTION:

#### EYE PROTECTION:

Wear safety glasses when handling cylinders. Select in accordance with the current CSA standard Z94.3, "Industrial Eye and Face Protection", and any provincial regulations, local bylaws or guidelines.

**OTHER PROTECTIVE EQUIPMENT:**

Metatarsal shoes for cylinder handling. Protective clothing where needed. Cuff less trousers should be worn outside the shoes. Select in accordance with the current CSA standard Z195, "Protective Foot Wear", and any provincial regulations, local bylaws or guidelines.

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**9. Physical and Chemical Properties**


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<b>PHYSICAL STATE:</b>	Gas.	<b>FREEZING POINT:</b>	-209.9°C (-345.8°F)	<b>pH:</b>	Not applicable.
<b>BOILING POINT</b>	-195.8°C (-320.4°F)	<b>VAPOUR PRESSURE</b>	Not applicable.	<b>MOLECULAR WEIGHT:</b>	28.01 g/mole
<b>SPECIFIC GRAVITY:</b> LIQUID (Water = 1)	Not applicable.	<b>SOLUBILITY IN WATER.</b>	Negligible.		
<b>SPECIFIC GRAVITY:</b> VAPOUR (Air = 1)	0.97 @ 21.1 C	<b>EVAPORATION RATE</b> (Butyl Acetate=1):	Not applicable.	<b>COEFFICIENT OF WATER/OIL DISTRIBUTION:</b>	Not applicable.
<b>VAPOUR DENSITY:</b>	0.00115 g/ml @ 21.1 C	<b>% VOLATILES BY VOLUME:</b>	100% (v/v).	<b>ODOUR THRESHOLD:</b>	Odourless.
<b>APPEARANCE &amp; ODOUR:</b>	Colourless.		Odourless.		

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**10. Stability and Reactivity**


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<b>STABILITY:</b>	The product is stable.
<b>CONDITIONS OF CHEMICAL INSTABILITY:</b>	Elevated temperatures.
<b>INCOMPATIBILITY (materials to avoid):</b>	Under certain conditions, nitrogen can react violently with Lithium, Neodymium, Titanium (above 800°C) and Magnesium to form nitrides. At high temperature it can also combine with Oxygen and Hydrogen.
<b>HAZARDOUS DECOMPOSITION PRODUCTS:</b>	None.
<b>HAZARDOUS POLYMERIZATION:</b>	Will not occur.
<b>CONDITIONS OF REACTIVITY:</b>	None.

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**11. Toxicological Information**


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See section 3.

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**12. Ecological Information**


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No adverse ecological effects expected. This product does not contain any Class I or Class II ozone-depleting chemicals. The components of this mixture are not listed as marine pollutants by TDG Regulations.

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**13. Disposal Considerations**


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**WASTE DISPOSAL METHOD:** Do not attempt to dispose of residual or unused quantities. Return cylinder to supplier.

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## 14. Transport Information

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**TDG/IMO SHIPPING NAME:** Nitrogen, Compressed

**HAZARD CLASS:** CLASS: 2.2 **IDENTIFICATION #:** UN1066

Non-flammable, non-corrosive and, non-poisonous gas.

**SHIPPING LABEL(s):** Non-flammable, non-poisonous gas  
**PLACARD (when required):** Non-flammable, non-poisonous gas

### SPECIAL SHIPPING INFORMATION:

Cylinders should be transported in a secure position, in a well-ventilated vehicle. Cylinders transported in an enclosed, non-ventilated compartment of vehicle can present serious safety hazards.

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## 15. Regulatory Information

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The following selected regulatory requirements may apply to this product. Not all such requirements are identified. Users of this product are solely responsible for compliance with all applicable federal, provincial, and local regulations.

**WHMIS (Canada)** CLASS A: Compressed gas.

### International Regulations

**EINECS** Not available.

**DSCL (EEC)** This product is not classified according to the EU regulations.

**International Lists** No products were found.

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## 16. Other Information

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### MIXTURES:

When two or more gases or liquefied gases are mixed, their hazardous properties may combine to create additional, unexpected hazards. Obtain and evaluate the safety information for each component before you produce the mixture. Consult an Industrial Hygienist or other trained person when you make your safety evaluation of the end product. Remember, gases and liquids have properties which can cause serious injury or death.

### HAZARD RATING SYSTEM:

#### HMIS RATINGS:

HEALTH	0
FLAMMABILITY	0
PHYSICAL HAZARD	3

#### CONNECTION:

Use the proper connections. Additional limited-standard connections may apply. Compressed gas cylinders shall not be refilled without the express written permission of the owner. Shipment of a compressed gas cylinder which has not been filled by the owner or with/her written consent is a violation of transportation regulations.

**Disclaimer:** The opinions expressed herein are those of qualified experts within Ellenbarrie Industrial Gases Limited. We believe that the information contained herein is current as of the date of this Material Safety Data Sheet. Since the use of this information and the conditions of use of the product are not within the control of Ellenbarrie Industrial Gases Limited, it is the user's obligation to determine the conditions of safe use of the product.

Ellenbarrie Industrial Gases Limited requests the users of this product to study this Material Data Sheet (MSDS) and become aware of product hazards and safety information. To promote safe use of this product, a user should (1) notify its employees, agents and contractors of the information on this MSDS and any product hazards and safety information, (2) furnish this same information to each of its customers for the product, and (3) request such customers to notify their employees and customers for the product of the same product hazards and safety information.

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