



# MATERIAL SAFETY DATA SHEET

(Essentially similar to U.S. Department of Labor Form OSHA-20)  
 An explanation of the terms used herein may be found in OSHA  
 publication 2265, available from OSHA regional or area offices.  
 Do Not Duplicate This Form. Request an Original.

385  
 999070



## I. PRODUCT IDENTIFICATION

PRODUCT Nitrogen (High Pressure Gas)

|               |                |                  |         |
|---------------|----------------|------------------|---------|
| CHEMICAL NAME | Nitrogen       | SYNONYMS         | ---     |
| FORMULA       | N <sub>2</sub> | CHEMICAL FAMILY  | ---     |
|               |                | MOLECULAR WEIGHT | 28.0134 |

TRADE NAME ---

## II. HAZARDOUS INGREDIENTS

For mixtures of this product request the respective component Material Safety Data Sheets  
 See Section IX

| MATERIAL | Wt (%) | 1982 ACGIH TLV-TWA (Units) |
|----------|--------|----------------------------|
| Nitrogen | 100    | Simple asphyxiant          |

## III. PHYSICAL DATA

|   |                     |                                      |                   |
|---|---------------------|--------------------------------------|-------------------|
| BOILING POINT, 760 mm. Hg               | -195.8°C (-320.4°F) | FREEZING POINT                       | -210°C (-345.8°F) |
| SPECIFIC GRAVITY (H <sub>2</sub> O = 1) | Gas                 | VAPOR PRESSURE AT 20°C               | Gas               |
| VAPOR DENSITY (air = 1)                 | 0.967               | SOLUBILITY IN WATER, % by wt.        | Negligible        |
| PERCENT VOLATILES BY VOLUME             | 100                 | EVAPORATION RATE (Butyl Acetate = 1) | N/A               |
| APPEARANCE AND ODOR                     | Colorless, Odorless |                                      |                   |

## EMERGENCY PHONE NUMBER

IN CASE OF EMERGENCIES involving this material, further information is available at all times at: 304 - 744-3487  
 For routine information contact your local supplier.

Union Carbide Corporation requests the users of this product to study this Material Safety 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.

UNION CARBIDE CORPORATION  LINDE DIVISION  
 Old Ridgebury Road, Danbury, CT 06817

L-4631-A

PRODUCT: Nitrogen (High Pressure Gas)

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#### IV. HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE

Simple Asphyxiant – (ACGIH – 1982)

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#### EFFECTS OF OVEREXPOSURE AND EMERGENCY AND FIRST AID PROCEDURES

Nitrogen acts as an asphyxiant by displacing oxygen, and may cause atmospheres deficient in oxygen in closed spaces and when ventilation is deficient.

**SYMPTOMS OF ASPHYXIA:** Headache, breathing and pulse rates increased, difficult breathing, perspiration, dizziness, ringing in ears, lips blue, tremors and weakness, fatigue upon exertion, drowsiness, nausea and vomiting, unconsciousness.

**TREATMENT OF ASPHYXIA:** Remove from oxygen-deficient atmosphere. If breathing is difficult administer oxygen. If not breathing administer artificial respiration, preferably with simultaneous administration of oxygen. Call a physician. Keep under medical observation for 24 hours if rendered unconscious due to oxygen-deficiency.

**V. FIRE AND EXPLOSION HAZARD DATA**

|   |              |                             |     |
|---|--------------|-----------------------------|-----|
| FLASH POINT<br>(test method)            | N/A          | AUTOIGNITION<br>TEMPERATURE | N/A |
| FLAMMABLE LIMITS<br>IN AIR, % by volume | LOWER<br>N/A | UPPER                       | N/A |

**EXTINGUISHING MEDIA**

Nitrogen cannot catch fire. Use media appropriate for surrounding fire.

**SPECIAL FIRE FIGHTING PROCEDURES**

Evacuate all personnel from danger area. Immediately deluge containers with water spray from maximum distance until cool, then move containers away from fire area without risk.

**UNUSUAL FIRE AND EXPLOSION HAZARDS**

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 (approximately 125°F). Most containers are designed to vent contents when they are exposed to elevated temperature.

**VI. REACTIVITY DATA**

| STABILITY |        | CONDITIONS TO AVOID<br>See Section IX |
|-----------|--------|---------------------------------------|
| UNSTABLE  | STABLE |                                       |
|           | X      |                                       |

**INCOMPATIBILITY (materials to avoid)**

None currently known

**HAZARDOUS DECOMPOSITION PRODUCTS**

None

| HAZARDOUS POLYMERIZATION |                | CONDITIONS TO AVOID<br>None currently known. |
|--------------------------|----------------|--|
| May Occur                | Will not Occur |  |
|                          | X              |  |

**VII. SPILL OR LEAK PROCEDURES**

**STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED**

Evacuate all personnel from danger area. Use self-contained breathing apparatus where needed. Shut off leak if without risk. Ventilate area of leak or move leaking container to well-ventilated area. Test area, especially confined areas, for sufficient oxygen content prior to permitting re-entry of personnel.

**WASTE DISPOSAL METHOD**

Slowly release into atmosphere. Discard any product, residue, disposable container or liner in an environmentally acceptable manner, in full compliance with Federal, State and local regulations.

**VIII. SPECIAL PROTECTION INFORMATION**

**RESPIRATORY PROTECTION (specify type)**  
Self-contained breathing apparatus where needed.

|                    |   |
|--------------------|---|
| <b>VENTILATION</b> | <b>LOCAL EXHAUST</b><br>Preferred         |
|                    | <b>MECHANICAL (general)</b><br>Acceptable |
|                    | <b>SPECIAL</b><br>-----                   |
|                    | <b>OTHER</b><br>-----                     |

**PROTECTIVE GLOVES**  
Preferred for cylinder handling.

**EYE PROTECTION**  
Safety glasses.

**OTHER PROTECTIVE EQUIPMENT**  
Metatarsal shoes for cylinder handling.

**IX. SPECIAL PRECAUTIONS**

**CAUTION:** High pressure gas. Use piping and equipment adequately designed to withstand pressures to be encountered. Can cause rapid suffocation due to oxygen deficiency. Store and use with adequate ventilation. Close valve when not in use and when empty.

**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.

**OTHER HANDLING AND STORAGE CONDITIONS**

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The opinions expressed herein are those of qualified experts within Union Carbide Corporation. 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 these opinions and the conditions of use of the product are not within the control of Union Carbide Corporation, it is user's obligation to determine the conditions of safe use of the product.

**UNION CARBIDE CORPORATION  
LINDE DIVISION**

**GENERAL OFFICES: DANBURY, CT.  
OFFICES IN PRINCIPAL CITIES**

Second Printing