

PRODUCT NAME Nitrogen	CAS # 7727-37-9
TRADE NAME AND SYNONYMS Nitrogen	DOT I.D. No.: UN 1066
CHEMICAL NAME AND SYNONYMS Nitrogen	DOT Hazard Class: Nonflammable gas
	Formula: N <sub>2</sub>
ISSUE DATE AND REVISIONS 25 November 1985	Chemical Family: Inert gas

**HEALTH HAZARD DATA**

TIME WEIGHTED AVERAGE EXPOSURE LIMIT Nitrogen is defined as a simple asphyxiant. Oxygen levels should be maintained at greater than 18 molar percent at normal atmospheric pressure which is equivalent to a partial pressure of 135 mm Hg (ACGIH, 1985-86).

## SYMPTOMS OF EXPOSURE

Effects of exposure to high concentrations so as to displace the oxygen in air necessary for life may include any, all or none of the following:

o Loss of balance or dizziness;

o Tightness in the frontal area of the forehead; (Continued on last page)

## TOXICOLOGICAL PROPERTIES

Nitrogen is nontoxic but the liberation of a large amount in a confined area could displace the amount of oxygen in air necessary to support life.

## RECOMMENDED FIRST AID TREATMENT

PROMPT MEDICAL ATTENTION IS MANDATORY IN ALL CASES OF OVEREXPOSURE TO NITROGEN. RESCUE PERSONNEL SHOULD BE EQUIPPED WITH SELF-CONTAINED BREATHING APPARATUS.

Inhalation: Conscious persons should be assisted to an uncontaminated area and inhale fresh air. Quick removal from the contaminated area is most important. Unconscious persons should be moved to an uncontaminated area, given mouth-to-mouth resuscitation and supplemental oxygen. Further treatment should be symptomatic and supportive.

Information contained in this material safety data sheet is offered without charge for use by technically qualified personnel at their discretion and risk. All statements, technical information and recommendations contained herein are based on tests and data which we believe to be reliable, but the accuracy or completeness thereof is not guaranteed and no warranty of any kind is made with respect thereto. This information is not intended as a license to operate under or a recommendation to practice or infringe any patent of this Company or others covering any process, composition of matter or use.

Since the Company shall have no control of the use of the product described herein, the Company assumes no liability for loss or damage incurred from the proper or improper use of such product.

**HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES**

None

**PHYSICAL DATA**

BOILING POINT -320.5°F (-195.8°C)	LIQUID DENSITY AT BOILING POINT 50.46 lb/ft <sup>3</sup> (808.3 kg/m <sup>3</sup> )
VAPOR PRESSURE @ 70°F (21.1°C) above the critical temp. of -232.6°F (-147°C)	GAS DENSITY AT 70°F, 1 atm .0725 lb/ft <sup>3</sup> (1.161 kg/m <sup>3</sup> )
SOLUBILITY IN WATER Very slightly	FREEZING POINT -345.9°F (-209.9°C)
EVAPORATION RATE N/A	SPECIFIC GRAVITY (AIR=1) @ 70°F (21.1°C) = 0.97
APPEARANCE AND ODOR Colorless, odorless gas	

**FIRE AND EXPLOSION HAZARD DATA**

FIRE AND EXPLOSION HAZARD DATA			
FLASH POINT (Method used)	AUTO IGNITION TEMPERATURE	FLAMMABLE LIMITS % BY VOLUME	
N/A	N/A	LEL N/A	UEL N/A
EXTINGUISHING MEDIA			ELECTRICAL CLASSIFICATION
Nonflammable, inert gas			
SPECIAL FIRE FIGHTING PROCEDURES			
N/A			
UNUSUAL FIRE AND EXPLOSION HAZARDS			
N/A			

**REACTIVITY DATA**

STABILITY Unstable		CONDITIONS TO AVOID
Stable	X	N/A
INCOMPATIBILITY (Materials to avoid) None		
HAZARDOUS DECOMPOSITION PRODUCTS None		
HAZARDOUS POLYMERIZATION		CONDITIONS TO AVOID
May Occur		N/A
Will Not Occur	X	

**SPILL OR LEAK PROCEDURES**

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED  
Evacuate all personnel from affected area. Use appropriate protective equipment. If leak is in container or container valve, contact your closest supplier location or call the emergency telephone number listed herein.

WASTE DISPOSAL METHOD  
Do not attempt to dispose of waste or unused quantities. Return in the shipping container properly labeled, with any valve outlet plugs or caps secured and valve protection cap in place to your supplier. For emergency disposal assistance, contact your closest supplier location or call the emergency telephone number listed herein.

RESPIRATORY PROTECTION (Specify type) Positive pressure air line with mask or self-contained breathing apparatus should be available for emergency use.		
VENTILATION See Local Exhaust on last page	LOCAL EXHAUST (See last page)	SPECIAL N/A
	MECHANICAL (Gen.) N/A	OTHER N/A
PROTECTIVE GLOVES Any material		
EYE PROTECTION Safety goggles or glasses		
OTHER PROTECTIVE EQUIPMENT Safety shoes		

## SPECIAL PRECAUTIONS\*

SPECIAL LABELING INFORMATION
DOT Shipping Name: Nitrogen or Nitrogen, Compressed DOT Hazard Class: Nonflammable gas DOT Shipping Label: Nonflammable gas I.D. No.: UN 1066
SPECIAL HANDLING RECOMMENDATIONS
Use only in well-ventilated areas. Valve protection caps must remain in place unless container is secured with valve outlet piped to use point. Do not drag, slide or roll cylinders. Use a suitable hand truck for cylinder movement. Use a pressure reducing regulator when connecting cylinder to lower pressure (<3,000 psig) piping or systems. Do not heat cylinder by any means to increase the discharge rate of product from cylinder. Use a check valve or trap in the discharge line to prevent hazardous back flow into the cylinder.
For additional handling recommendations, consult Compressed Gas Association's Pamphlets P-1, P-9, P-14 and Safety Bulletin SB-2.
SPECIAL STORAGE RECOMMENDATIONS
Protect cylinders from physical damage. Store in cool, dry, well-ventilated area away from heavily trafficked areas and emergency exits. Do not allow the temperature where cylinders are stored to exceed 130F (54C). Cylinders should be stored upright and firmly secured to prevent falling or being knocked over. Full and empty cylinders should be segregated. Use a "first in - first out" inventory system to prevent full cylinders being stored for excessive periods of time.
For additional storage recommendations, consult Compressed Gas Association's Pamphlets P-1, P-9, P-14 and Safety Bulletin SB-2.
SPECIAL PACKAGING RECOMMENDATIONS
Nitrogen is noncorrosive and may be used with any common structural material.
OTHER RECOMMENDATIONS OR PRECAUTIONS
Compressed gas cylinders should not be refilled except by qualified producers of compressed gases. Shipment of a compressed gas cylinder which has not been filled by the owner or with his (written) consent is a violation of Federal Law (49CFR).

\*Various Government agencies (i.e., Department of Transportation, Occupational Safety and Health Administration, Food and Drug Administration and others) may have specific regulations concerning the transportation, handling, storage or use of this product which will not be reflected in this data sheet. The customer should review these regulations to ensure that he is in full compliance.

HEALTH HAZARD DATA (Continued)

SYMPTOMS OF EXPOSURE: (Continued)

- o Tingling of the tongue, fingertips or toes;
- o Weakened speech leading to the inability to utter sounds;
- o Rapid reduction in the ability to perform movements;
- o Reduced consciousness of the surroundings;
- o Loss of tactile sensations;
- o Heightened mental activity.

It should be recognized that it is possible that none of the above symptoms may occur in nitrogen asphyxia so that there are no definite warning symptoms.

SPECIAL PROTECTION INFORMATION (Continued)

LOCAL EXHAUST: (Continued)

To prevent accumulation of high concentrations so as to reduce the oxygen level in the air to less than 18 molar percent.