

# MATERIAL SAFETY DATA SHEET



## LIQUID CARBONIC

INDUSTRIAL/MEDICAL CORPORATION

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LIQUID NITROGEN

04/86

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### SECTION I--PRODUCT IDENTIFICATION

CHEMICAL NAME: Nitrogen

COMMON NAME AND SYNONYMS: Liquid Nitrogen, LN<sub>2</sub>, LIN

CHEMICAL FAMILY: Inert Gas FORMULA: N<sub>2</sub>

### SECTION II--HAZARDOUS INGREDIENTS

MATERIAL	VOLUME %	CAS NO.	1985-6 ACGIH TLV UNITS
Nitrogen	99.9%	7727-37-9	Nitrogen is a simple asphyxiant.

### SECTION III--PHYSICAL DATA

BOILING POINT (°F.)	-320.4°	SPECIFIC GRAVITY (H <sub>2</sub> O=1)	0.81 @ B.P.
VAPOR PRESSURE (mmHg.)	@-320.4°-760	% VOLATILE BY VOLUME	100.0
VAPOR DENSITY (AIR=1)	0.967	EVAPORATION RATE (BUTYL ACETATE=1)	Gas
SOLUBILITY IN WATER	Slightly		
APPEARANCE AND ODOR	Colorless and Orderless		

### SECTION IV--FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (METHOD USED)	N/A	FLAMMABLE LIMITS	LEL N/A	UEL N/A
EXTINGUISHING MEDIA:	Non-Flammable Inert Gas			
SPECIAL FIRE FIGHTING PROCEDURES:	Non-Flammable and will not support combustion.			

UNUSUAL FIRE AND EXPLOSION HAZARDS: Non-Flammable. No unusual hazard except when compressed gas is exposed to a fire, containers may rupture violently if safety devices fail to relieve pressure.

### SECTION V--HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE: Nitrogen is non-toxic and is classified as a simple asphyxiant by displacement of oxygen.

EFFECTS OF OVEREXPOSURE: Dizziness, unconsciousness, death.

EMERGENCY AND FIRST AID PROCEDURES: If inhaled, remove to fresh air. Administer air or oxygen. Obtain prompt medical attention. Give cardiopulmonary resuscitation. Rescuers need to be concerned with their own safety in oxygen deficient areas. Use self contained breathing equipment.

For skin contact or frost bite, flush affected areas with luke warm water. Do not use hot water. For serious cryogenic freezing burn, see a physician immediately.

ROUTE(S) OF ENTRY: INHALATION? Yes SKIN? Yes INGESTION?  
CARCINOGENICITY: NTP? No IARC MONOGRAPHS? No OSHA? No

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SECTION VI--REACTIVITY DATA

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STABILITY: UNSTABLE ( ) STABLE (X)

CONDITIONS TO AVOID: N/A

INCOMPATIBILITY (MATERIALS TO AVOID): Inert except at high temperatures.

HAZARDOUS DECOMPOSITION PRODUCTS: None

HAZARDOUS POLYMERIZATION: MAY OCCUR ( ) WON'T OCCUR (X)

CONDITIONS TO AVOID: N/A

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SECTION VII--SPILL OR LEAK PROCEDURES

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STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Evacuate all personnel from affected area. Do not touch liquid nitrogen. Maintain adequate ventilation to avoid oxygen deficiency.

WASTE DISPOSAL METHOD: No waste disposal problem. Gas will diffuse into atmosphere.

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SECTION VIII--SPECIAL PROTECTION INFORMATION

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RESPIRATORY PROTECTION: Self contained breathing apparatus or pressure demand air supply mask.

VENTILATION: LOCAL EXHAUST (X) Use at point of release to maintain  
MECHANICAL (GENERAL) ( ) over 18% oxygen in air.

PROTECTIVE GLOVES: Loose-fitting, Insulated EYE PROTECTION: Safety goggles or glasses plus face shield.

OTHER PROTECTIVE EQUIPMENT: Safety shoes

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SECTION IX--SPECIAL PRECAUTIONS

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PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: Protect containers from physical damage. Use only approved storage vessels. Follow all the safety rules related to cryogenic fluid.

OTHER PRECAUTIONS: Refer to CGA Safety Bulletin SB-2 and pamphlets P-9, P-12 and P-14.

SB-2 -- "Oxygen Deficient Atmosphere"

P-9 -- "The Inert Gases, Argon, Nitrogen and Helium"

P-12 -- "Safe Handling of Cryogenic Liquids"

P-14 -- "Accident Prevention in Oxygen - Rich  
and Oxygen - Deficient Atmospheres"

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