

**Nitrogen
Material Safety
Data Sheet**



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| EMERGENCY PHONE: <i>Emergency Response Telephone: 1-800-424-9300, use for chemical emergencies only</i> | | |
| ISSUE DATE | Issued: 13 April 1977 | TRADE NAME AND SYNONYMS Nitrogen, or LIN (in cryogenic liquid state) |
| REVISIONS | Rev: 1 December 2009 | FORMULA N ₂ MW: 28.01 |
| | | CHEMICAL NAME AND SYNONYMS Nitrogen |
| | | CHEMICAL FAMILY Inert gas CAS #7727-37-9 |

HEALTH HAZARD DATA

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| EXPOSURE LIMITS OSHA: None established. ACGIH: Simple Asphyxiant. Nitrogen is not listed as a carcinogen by NTP, IARC, or OSHA. |
| SYMPTOMS IF INGESTED, CONTACTED WITH SKIN, OR VAPOR INHALED Nitrogen is odorless and nontoxic, but may produce suffocation by diluting the concentration of oxygen in air below levels necessary to support life. PERSONNEL, INCLUDING RESCUE WORKERS, SHOULD NOT ENTER AREAS WHERE THE OXYGEN CONCENTRATION IS BELOW 19.5% UNLESS PROVIDED WITH A SELF-CONTAINED BREATHING APPARATUS OR AIRLINE RESPIRATOR. Exposure to oxygen-deficient atmospheres may produce dizziness, nausea, vomiting, loss of consciousness, and death. Death may result from errors in judgement, confusion, or loss of consciousness which prevents self-rescue. At low oxygen concentrations unconsciousness and death may occur in seconds without warning. Extensive tissue damage or burns can result from exposure to liquid nitrogen or cold nitrogen vapors. |
| TOXICOLOGICAL PROPERTIES Nitrogen is a simple asphyxiant and constitutes 78% of the air we breathe. Nitrogen does not support life and may produce immediately hazardous atmospheres through the displacement of oxygen. Nitrogen under high pressure can produce narcosis even though oxygen sufficient for life is present. |
| RECOMMENDED FIRST AID TREATMENT Persons suffering from lack of oxygen should move to areas with normal atmospheres. SELF-CONTAINED BREATHING APPARATUS MAY BE REQUIRED TO PREVENT ASPHYXIATION OF RESCUE WORKERS. Assisted respiration and supplemental oxygen should be given if the victim is not breathing. If cryogenic liquid or cold boil-off gas contacts a worker's skin or eyes, frozen tissues should be flooded or soaked with tepid water (105-115F; 41-46C). DO NOT USE HOT WATER. Cryogenic burns which result in blistering or deeper tissue freezing should be seen promptly by a physician. |

FIRE AND EXPLOSION HAZARD DATA

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| FLASH POINT (Method used) N/A | AUTO IGNITION TEMP N/A | FLAMMABLE LIMITS Non-flammable | L _{EL} N/A | U _{EL} N/A |
| EXTINGUISHING MEDIA N/A | | | ELECTRICAL CLASSIFICATION GROUP N/A | |
| SPECIAL FIRE FIGHTING PROCEDURES N/A | | | | |
| UNUSUAL FIRE AND EXPLOSION HAZARDS Cylinders exposed to high heat or flame may vent rapidly. | | | | |

PHYSICAL DATA

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| BOILING POINT (°F) @ 1 atm - 320.5F (- 195.8C) | | FREEZING POINT (°F) @ 1 atm - 346.0F (- 210.0C) | |
| VAPOR PRESSURE (psia) N/A | | SOLUBILITY IN WATER @ 68F (20C), 1 atm 1.52% by volume | |
| VAPOR DENSITY (lb/cu ft) @ 70F (2.1C), 1 atm 0.005229 | SPECIFIC GRAVITY (AIR = 1) @ 68F (20C), 1 atm 0.967 | LIQUID DENSITY (lb/cu ft) @ boiling point, 1 atm 50.47 | SPECIFIC GRAVITY (H ₂ O = 1) @ boiling point, 1 atm 0.88 |
| APPEARANCE AND ODOR Both liquid and gaseous nitrogen are colorless and odorless | | | |