

Precision Gas Products Inc.

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Nitrogen

MATERIAL SAFETY DATA SHEET

Identification

Revision Date 01-01-09

Products Name: NITROGEN

CAS Number: 7727-37-9

Chemical Family: Inert gas

Chemical formula: N₂

MSDS identification Code/ Number: MSDS 111

Health Hazard Information

- **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, 1984-85).
- **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:
 - Loss of balance or dizziness
 - Tightness in the frontal area of the forehead
 - Tingling of the tongue, fingertips or toes
 - Weakened speech leading to the inability to utter sounds
 - Rapid reduction in the ability to perform movements
 - Reduced consciousness of the surroundings
 - Loss of tactile sensations
 - 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.

Nitrogen can cause suffocation without warning.

- **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.

Listed as Carcinogen or Potential Carcinogen – NTP: No IARC: No OSHA: No

- **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 supplementary oxygen. Medical assistance should be sought immediately.

Hazardous Mixtures of Other Liquids, Solids or Gases: None

Physical Data

- **Boiling Point**
-320.445°F (-195.803°C)
- **Vapor Pressure** @ 70°F (21.1°C) above the critical temperature of -232.51°F (-146.95°C)
- **Solubility in Water** @ 68°F (20°C)
Bunsen coefficient = .01557
- **Liquid Density at Boiling Point**
50.48 lb/ft³ (808.607 kg/m³)
- **Gas Density at** 70°F 1 atm .07245 lb/ft³ (1.1605 kg/m³)
- **Freezing Point**
-346.004°F (-210.002°C)
- **Appearance and Odor**
Colorless, odorless gas. Specific gravity @70°F (Air = 1.0) is .97

Fire and Explosion Data

- **Flash Point (method used)**
N/A
- **Auto Ignition Temperature**
N/A
- **Flammable Limits % By Volume**
N/A
- **Extinguishing Media**
Nonflammable, inert gas
- **Electrical Classification**
Nonhazardous
- **Special Fire Fighting Procedures**
N/A
- **Unusual Fire and Explosion Hazard**
N/A

Reactivity Data

- **Stability** - Stable
- **Incompatibility (Materials to avoid)** - None
- **Hazardous Decomposition Products** - None
- **Hazardous Polymerization** - Will no occur

Spills or Leak Procedures

- **Steps to be Taken in Case Material is Released or Spilled:** Evacuate all personnel from affected area. Use appropriate protective equipment.
- **Waste Disposal Method:** Do not attempt to dispose of waste or unused quantities. Return in shipping container properly labeled, with any valve outlet plugs or caps secured and valve protection cap in place to Precision Gas Products for proper disposal.

Special Protection Information

- **Respiratory Protection:** Positive pressure air line with mask or self – contained breathing apparatus should be available for emergency use.
- **Ventilation:** To prevent accumulation of high concentrations so as to reduce the oxygen level in the air too less than 18 molar percent.

<u>PROTECTIVE GLOVES</u>	<u>EYE PROTECTION</u>	<u>OTHER PROTECTIVE EQUIPMENT</u>
Any material	Safety goggles or glasses	Safety shoes

Special Precautions

Proper Shipping Name: Nitrogen or Nitrogen Compressed

Hazardous Class: 2.2

CT (DOT) Identification Number: UN 1066

CT (DOT) Shipping Label: Nonflammable gas

- **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 to lower pressure (<3,000 psig) piping or systems. Do not heat cylinder by any means to increase the discharge line to prevent hazardous back flow into the cylinder.
- **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 segregated. Use a “first in – first out” inventory system to prevent full cylinders being stored for excessive periods of time.
- **Special Packing Recommendations**

Nitrogen in noncorrosive and may be used with any common structural material.
- **Other Recommendations or Precautions**

Compressed gas cylinders should not be refilled except by qualified procedures 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).