

Precision Gas Products Inc.

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Oxygen in Nitrogen

2% to 23%

MATERIAL SAFETY DATA SHEET

Identification

Revision Date 01-01-09

Products Name: OXYGEN IN NITROGEN 2% TO 23%

CAS Number: N/A

Chemical Family: Gas Mixture

Chemical formula: O₂ in N₂

MSDS identification Code/ Number: MSDS 130N

Composition/ Information on Ingredients

Ingredient Name	Exposure Limits	Concentration Percent by Weight
Oxygen CAS Number 7782-44-7	None Listed	2.0% to 98.0%
Nitrogen CAS Number 7727-37-9	None Listed Simple Asphyxiant	98.0% to 77.0%

Hazard Identification

No data given

First Aid Measures

Inhalation Exposure

These mixtures are not intended for breathing use, since it's oxygen contents may be below that which supports life. Maintain oxygen levels above 19.5% at sea level.

Effects of overexposure to high concentrations so as to displace the oxygen in the 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 surroundings;
- Loss of tactile sensations;
- Heightened mental activity;

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

- First Aid – Inhalation: Prompt medical attention is mandatory in all cases of overexposure. Rescue personnel should be equipped with self – contained breathing apparatus. 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 artificial resuscitation and supplemental oxygen. Further treatment should be symptomatic and supportive.
- Skin – Exposure: Contact with liquid product may cause frostbite.
- First Aid – Skin: For dermal contact or frostbite: Remove contaminated clothing and flush affected areas with lukewarm water. DO NOT USE HOT WATER. A physician should see the patient promptly if the cryogenic “burn” has resulted in blistering of the dermal surface or deep tissue freezing.

First Aid Measures – Continued

- Eye – Exposure: Contact with liquid product may cause tissue freezing.
- First Aid – Eyes: Never introduce ointment or oil into the eyes without medical advice! In case of freezing or cryogenic “burns” caused by rapidly evaporating liquid, DO NOT WASH THE EYES WITHOUT HOT OR EVEN TEPID WATER! Remove victim from the source of contamination. Open eyelids wide to allow liquid to evaporate. Refer the victim to an ophthalmologist for treatment and follow up. If the victim cannot tolerate light, protect the eyes with light bandage.

Fire Fighting Measures

Flammable Properties**Flash Point:** None

- Fire and Explosion Hazards: High oxygen concentrations (over 21%) vigorously accelerate combustion.
- Electrical Classification: Nonhazardous
- Extinguishing Media: Water spray to keep cylinders cool.
- Special Fire Fighting Instructions: If possible, stop the flow of gas which is supporting the fire.

Accidental Release Measures

Evacuate all personnel from affected areas. Use appropriate protective equipment. If leak is in user’s equipment, be certain to purge piping with an inert gas prior to attempting repairs

Handling and Storage

- Handling and Storage Precautions

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 (<3000 psig) piping or systems. Do not heat cylinder by any means to increase the discharge rate of product from the cylinder. Use a check valve or trap in the discharge line to prevent hazardous backflow into the system.

Protect cylinders from physical damage. Store in cool, dry, well – ventilated area of noncombustible construction away from heavily trafficked areas and emergency exits. Do not allow the temperature where cylinders are stored to exceed 130°F (54°C). Cylinders should be stored upright and firmly secured to prevent falling or being knocked over. Use a “first in, first out” inventory system to prevent full cylinders being stored for excessive periods of time. Post “NO SMOKING OR OPEN FLAMES” signs in the storage area or use area. There should be no sources of ignition in the storage or use area.

Never carry a compressed gas cylinder or a container of a gas in cryogenic liquid form in an enclosed space such as a car trunk, van or station wagon. A leak can result in a fire, asphyxiation or toxic exposure.

Exposure Controls/Personal Protection

Ventilation: Local exhaust to prevent accumulation of high concentrations so as to reduce the oxygen level in the air to less than 19.5 percent.

Eye/Face Protection: Safety goggles or glasses.

Skin Protection: Protective gloves of any material.

Respiratory Protection: A self-contained breathing apparatus should be available for emergency use.

Exposure Controls/Personal Protection - Continued

Other/General Protection: Safety shoes

Physical & Chemical Properties

- Boiling Point: -317.8°F -194.3°C
 - Vapor Pressure: Above critical temperature.
 - Specific Gravity: 1.0 @ STP
 - Solubility (H₂O): Slightly soluble.
 - Appearance: Colorless gas.
 - Odor: Odorless
-

Stability & Reactivity

Stability: Stable

Incompatible Materials: These mixtures are noncorrosive and may be used with all materials of construction. Oxygen concentrations above 21% enhance the combustion of many materials

Toxicological Information

These mixtures are nontoxic. They may act as a simple asphyxiant if released in a confined area and displace oxygen in the air to levels less than necessary to support life. Maintain oxygen levels above 19.5% at sea level

Carcinogenicity – NTP: No IARC: No OSHA: No

Ecological Information

No data given

Disposal Considerations

Do not attempt to dispose of waste or unused quantities. Return in the shipping container properly labeled, with any valve outlet plugs or caps secure and valve protection cap in place to Precision Gas Products for proper disposal. Non-refillable containers should be vented in a well ventilated area then disposed of in compliance with local regulations.

Transport Information

Proper Shipping Name: Compressed Gas, N.O.S. (Nitrogen, Oxygen)

Hazardous Class: 2.2

CT (DOT) Identification Number: UN 1956

CT (DOT) Shipping Label: Nonflammable gas

Regulatory Information

SARA Title III – Hazard Class: Acute Health Hazard

Fire Hazard

Sudden Release of Pressure Hazard

Hazard Ratings:	Health:	3
	Fire:	0
	Reactivity:	0
	Special:	None

Reference Documentation

Compressed gas cylinders should not be refilled except by qualified producers of compressed gases. Shipments 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).

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