



Emergency Contact: Chemtrec (800) 424-9300  
Or Norco (208) 336-1643

1125 West Amity Road  
Boise, ID 83705  
(208) 336-1643

# Oxygen 20.9% in Nitrogen

## MATERIAL SAFETY DATA SHEET

### Identification

Product Name: Oxygen 20.9% in Nitrogen  
Chemical Name: Oxygen in Nitrogen  
Chemical Family: Gas Mixture  
CAS Number: N/A  
Common Names/Synonyms: N/A  
MSDS Identification Code/Number: NLB 2670  
Prepared By: Quality Dept.

Revision Date: 03/26/07  
Last Review Date: 03/26/07

### Composition, Information on Ingredients, Exposure Limits

#### Exposure Limits<sup>1</sup>

Ingredient	% Volume	PEL-OSHA <sup>2</sup>	TLV-ACGIH <sup>3</sup>	LD <sub>50</sub> or LC <sub>50</sub> Route/Species
Oxygen Formula: O <sub>2</sub> CAS: 7782-44-7 RTECS#: RS2060000	20.9%	Not Available	Not Available	Not Available
Nitrogen Formula: N <sub>2</sub> CAS: 7727-37-9 RTECS#: QW9700000	79.1%	None Established	Simple Asphyxiant	Not Available

<sup>1</sup> Refer to individual state or provincial regulations, as applicable, for limits that may be more stringent than those listed here.

<sup>2</sup> As stated in 29 CFR 1910, Subpart Z (revised July1, 1993)

<sup>3</sup> As stated in the ACGIH 2006 Threshold Limit Values for Chemical Substances and Physical Agents

OSHA Regulatory Status: This material is classified as hazardous under OSHA regulations.

### Hazards Identification

#### Emergency Overview:

Odorless, colorless nonflammable gas. This product contains sufficient oxygen to support combustion and respiration. Non-toxic. Contents under pressure. Use and store below 125<sup>0</sup>F (52<sup>0</sup>C).

#### Route of Entry:

Skin Contact No	Skin Absorption No	Eye Contact No	Inhalation Yes	Ingestion No
--------------------	-----------------------	-------------------	-------------------	-----------------

#### Health Effects:

Exposure Limits No	Irritant No	Sensitization No
Teratogen No	Reproductive Hazard No	Mutagen No
Synergistic Effects None known		

**Hazards Identification Continued**

Carcinogenicity: NTP: No IARC: No OSHA: No

**Eye Effects:**

Contact with rapidly expanding gas near the point of release may cause frostbite.

**Skin Effects:**

Contact with rapidly expanding gas near the point of release may cause frostbite with redness, skin color change to gray or white, and blistering.

**Ingestion Effects:**

None known. Ingestion is unlikely as product is a gas at room temperature.

**Inhalation Effects:**

None expected. This product contains sufficient oxygen to sustain life. This product is not intended for use as breathing air.

**Medical Conditions Aggravated by Exposure:**

None known.

**NFPA Hazard Codes**

Health: 0  
 Flammability: 0  
 Instability: 0

**HMIS Hazard Codes**

Health: 0  
 Flammability: 0  
 Physical Hazard: 3

**Ratings System**

0: No Hazard  
 1: Slight Hazard  
 2: Moderate Hazard  
 3: Serious Hazard  
 4: Severe Hazard

Note: Ratings were assigned in accordance with Compressed Gas Association (CGA) guidelines as published in CGA Pamphlet P-19-2004, *CGA Recommended Hazard Ratings for Compressed Gases, 2<sup>nd</sup> Edition*.

**First Aid Measures**

**Eyes:**

None required for gas. If frostbite is suspected, flush eyes with cool water for 15 minutes and obtain immediate medical attention.

**Skin:**

None required for gas. For frostbite, immerse skin in lukewarm water. DO NOT USE HOT WATER. Obtain medical attention.

**Ingestion:**

None required.

**Inhalation:**

None required.

**Fire Fighting Measures**

Conditions of Flammability: Not flammable

Flash Point:  
None

Method:  
Not Applicable

Autoignition Temperature:  
None

LEL % None

UEL % None

Hazardous Combustion Products: None

Sensitivity to mechanical shock: None

Sensitivity to static discharge: None

**Fire and Explosion Hazards:**

Nonflammable. Cylinder may rupture violently from pressure when involved in a fire situation.

### Fire Fighting Measures Continued

**Extinguishing Media:**

None required. Use as appropriate for surrounding materials.

**Fire Fighting Instructions:**

If possible, stop the flow of gas supply. Use water spray to cool adjacent cylinders and areas. Fire fighters should wear a full-face piece NIOSH/MSHA approved self-contained breathing apparatus (SCBA) operated in positive pressure mode and full turnout gear.

### Accidental Release Measures

Evacuate all personnel from affected area. Use appropriate protective equipment. If leak is in user's equipment, be certain to purge piping with inert gas prior to attempting repairs. If leak is in container or valve, contact the appropriate emergency telephone number listed in section 1 or call your closest Norco/NorLab location.

### Handling and Storage

**Electrical classification:**

Non-hazardous.

Do not use as breathing air.

Gas mixture is non-corrosive and may be used with all materials of construction. Moisture causes metal oxides which are formed with air to be hydrated so that they include volume and lose their protective role (rust formation). Concentrations of SO<sub>2</sub>, Cl<sub>2</sub>, salt, etc. in the moisture enhances the rusting of metals in air.

Use only in well-ventilated areas. Valve protection caps must remain in place unless the cylinder 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 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 cylinder.

Protect cylinders from physical damage. Store in cool, dry, well-ventilated area of non-combustible construction away from heavy traffic areas and emergency exits. Do not allow the temperature where cylinders are stored to exceed 125°F (52°C). 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 from being stored for excessive periods of time

For additional recommendations, consult Compressed Gas Association Pamphlet P-1.

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

### Exposure Controls, Personal Protection

**Engineering Controls:**

General Ventilation.

**Eye/Face Protection:**

Safety goggles or glasses as appropriate for the job.

### Exposure Controls, Personal Protection Continued

**Skin Protection:**

Protective gloves of material appropriate for the job.

**Respiratory Protection:**

Positive pressure air line with full-face mask and escape bottle or self-contained breathing apparatus should be available for emergency use.

**Other/General Protection:**

Safety shoes.

<b>Physical and Chemical Properties</b>
---

Parameter	Value	Units
Physical state (gas, liquid, solid)	: Gas	
Vapor pressure	: Not Available	
Vapor density (Air = 1)	: 1	
Evaporation point	: Not Available	
Boiling point	: -317.8	°F
	: -194	°C
Freezing point	: Not Available	°F
	: Not Available	°C
pH	: Not Applicable	
Specific gravity	: 1	
Oil/water partition coefficient	: Not Available	
Solubility (H <sub>2</sub> O)	: Slightly Soluble	
Odor threshold	: Not Applicable	
Odor and appearance	: Colorless, odorless gas	

<b>Stability and Reactivity</b>
---------------------------------

**Stability:**

Stable

**Incompatible Materials:**

None

**Hazardous Decomposition Products:**

None

**Hazardous Polymerization:**

Does not occur.

<b>Toxicological Information</b>
----------------------------------

This product is not toxic.

<b>Ecological Information</b>
-------------------------------

This product does not contain any Class I or Class II ozone depleting substances. Not toxic. Will not bioconcentrate.

<b>Disposal Considerations</b>
--------------------------------

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

<b>Transport Information</b>
------------------------------

Parameter	United States DOT	Canada TDG
<b>Proper Shipping Name:</b>	Compressed gas, N.O.S., (Oxygen, Nitrogen)	Compressed gas, N.O. S.,
<b>Hazard Class:</b>	2.2	2.2
<b>Identification Number:</b>	UN 1956	UN 1956
<b>Shipping Label:</b>	Nonflammable Gas	Nonflammable Gas

<b>Regulatory Information</b>
-------------------------------

**SARA Title III Notifications and Information:**

**SARA Title III- Section 313 Supplier Notification**

This product does not contain any ingredients which are regulated on the U.S. EPA List of Toxic Chemicals (40 CFR 372), and is therefore no subject to release reporting under Section 313 of EPCRA/SARA Title III.

**SARA Title III – Hazard Classes:**

Sudden Release of Pressure Hazard

Acute Health Hazard

**California Proposition 65:** This product does not contain any ingredient(s) known to the State of California that cause cancer or reproductive toxicity.

<b>Other Information</b>
--------------------------

Compressed gas cylinders shall not be refilled without the express written permission of the owner. Shipment of a compressed gas cylinder which has not been filled by the owner or with his/her (written) consent is a violation of transportation regulations.

**Disclaimer of Expressed and Implied Warranties:**

Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as to the accuracy or completeness of the information contained herein, and assume no responsibility regarding the suitability of this information for the user's intended purposes or for the consequences of its use. Each individual should make a determination as to the suitability of the information for their particular purpose(s).