0.0001% to 19.49% Oxygen in Nitrogen

1 PRODUCT AND COMPANY IDENTIFICATION

Product Identifier:	**0.0001% to 19.49% Oxygen in Nitrogen**
Synonyms:	**Oxygen in Nitrogen, Calibration Gas**
Common Name:	**Oxygen in Nitrogen**
SDS Number:	**NLB 2250**
Revision Date:	**6/1/2018**
Version:	**2**
CAS Number:	**MIXTURE**
EPA Number:	**Not Available**
Chemical Family:	**Gas Mixture**
Chemical Formula:	**O2 + N2**
Product Use:	**Calibration of analyitical instrumentation**
Supplier Details:	**NorLab a division of Norco 898 W. Gowen Rd. Boise, ID 83705**
Contact:	**Quality Dept.**
Phone:	**208-336-1643**
Internet:	**www.norlab-gas.com**

For Transportation Emergency Contact CHEMTREC: 800-424-9300

2 HAZARDS IDENTIFICATION

Classification of Substance

GHS Classification in Accordance with 29 CFR 1910 (OSHA HCS):
Physical, Gases Under Pressure, Compressed Gas

GHS Label Elements, Including Precautionary Statements

GHS Signal Word: WARNING

GHS Hazard Pictograms:

GHS Hazard Statements:

H280 - Contains gas under pressure; may explode if heated
OSHA-H01 - MAY DISPLACE OXYGEN AND CAUSE RAPID SUFFOCATION.

GHS Precautionary Statements:

P202 - Do not handle until all safety precautions have been read and understood.
P261 - Avoid breathing dust/fume/gas/mist/vapours/spray.
P271 - Use only outdoors or in a well-ventilated area.
P281 - Use personal protective equipment as required.
P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.
CGA-PG05 - Use a back flow preventive device in the piping.
CGA-PG06 - Close valve after each use and when empty.
CGA-PG10 - Use only with equipment rated for cylinder pressure.
CGA-PG12 - Do not open valve until connected to equipment prepared for use.
CGA-PG02 - Protect from sunlight when ambient temperature exceeds 52 °C (125 °F).

Hazards not Otherwise Classified (HNOC) or not Covered by GHS

Route of Entry:	**Inhalation;**
Inhalation:	**Product is a simple asphyxiant. This product may displace oxygen if released in a confined space. Maintain oxygen levels above 19.5% at sea level to prevent asphyxiation. Effects of oxygen deficiency resulting from simple asphyxiants may include: rapid breathing, diminished mental**

alertness, impaired muscular coordination, faulty judgment, depression of all sensations, emotional instability and fatigue. As asphyxiation progresses, nausea, vomiting, prostration and loss of consciousness may result, eventually leading to convulsions, coma and death.

Oxygen deficiency during pregnancy has produced developmental abnormalities in humans and experimental animals.

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

Eye Contact: Non-irritating. Contact with rapidly expanding gas near the point of release may cause frostbite.

Ingestion: Not anticipated. Product is a gas at normal conditions.

3 COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Ingredients

CAS#	%	Chemical Name
7782-44-7	0.0001-19.49%	Oxygen
7727-37-9	80.51-99.9999 %	Nitrogen

4 FIRST AID MEASURES

Inhalation: PROMPT MEDICAL ATTENTION IS MANDATORY IN ALL CASES OF OVEREXPOSURE TO PRODUCT. RESCUE PERSONNEL SHOULD BE EQUIPED 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 assisted (artificial) respiration and supplemental oxygen. Further treatment should be symptomatic and supportive.

Skin Contact: Non-irritating. None required for gas. For frostbite, immerse skin in lukewarm water. DO NOT USE HOT WATER. Obtain medical attention.

Eye Contact: Non-irritating. None Required for gas. If frostbite is suspected, flush eyes with cool water for 15 minutes and obtain immediate medical attention.

Ingestion: Not a direct hazard.

5 FIRE FIGHTING MEASURES

Flammability: Not Flammable
Flash Point: None
Flash Point Method: Not Applicable
Burning Rate: Not Applicable
Autoignition Temperature: None
Lower Explosive Limit: None
Upper Explosive Limit: None

Fire and Explosion Hazards:
Nonflammable. Cylinders may rupture violently or vent rapidly from pressure when involved in a fire situation.

Extinguishing Media:
None required. Use as appropriate for surrounding materials

Fire Fighting Instructions:
Use water spray to cool adjacent cylinders and areas. Firefighters should wear respiratory protection (SCBA) and full turnout or

Bunker gear. Continue to cool fire-exposed cylinders until well after flames are extinguished.

6 ACCIDENTAL RELEASE MEASURES

Isolate hazard area, evacuate personnel and deny entry to unauthorized/unprotected individuals. Extinguish all ignition sources and ventilate closed spaces and low areas. Personnel entering area should wear appropriate protective equipment including respiratory protection suitable for unknown concentrations. Personnel should not reenter hazard area until hydrogen sulfide and carbon monoxide has sufficiently dispersed and adequate oxygen re-established. If a leak is in user's equipment, be certain to purge piping with an inert gas prior to attempting repairs. If leak is in container of container valve, contact the appropriate emergency telephone number listed in Section1or call your closest Norco/NorLab location.

7 HANDLING AND STORAGE

Handling Precautions:

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.

For additional recommendations, consult Compressed Gas Association Pamphlets 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 asphyxiation.

Storage Requirements:

Protect cylinders from physical damage. Store in cool, dry, well-ventilated area away from heavy traffic areas and emergency exits. Do not allow the temperature where cylinders are stored to exceed 125 degrees F (52 degrees 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.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls:

Use local exhaust in combination with general ventilation as necessary to prevent accumulation of high concentrations and maintain air oxygen levels at or above 19.5%.

Personal Protective Equipment:

Oxygen cas#:(7782-44-7) [0.0001-19.49%]
Nitrogen cas#:(7727-37-9) [80.51-99.9999%]

Personal protective equipment

Respiratory protection: Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type AXBEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection: Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching gloves outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. Full contact Material: butyl-rubber Minimum layer thickness: 0.3 mm Break through time: 480 min Material tested:Butoject (KCL 897 / Aldrich Z677647, Size M)

Splash protection: Material: Chloroprene Minimum layer thickness: 0.6 mm Break through time: 30 min Material tested:Camapren (KCL 722 / Aldrich Z677493, Size M) data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374 If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an Industrial Hygienist familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Eye protection: Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection: Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures: Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Oxygen cas#:(7782-44-7) [0.0001-19.49%]: No data available

Nitrogen cas#:(7727-37-9) [80.51-99.9999%]: No data available

9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	**Colorless Gas**		
Physical State:	**Gas**	**Odor:**	**Odorless**
Odor Threshold:	**Not Applicable**	**Molecular Formula:**	**O2 + N2**
Particle Size:	**Not Applicable**	**Solubility:**	**Negligible**
Specific Gravity or Density:	**Not Determined**	**Softening Point:**	**Not Applicable**
Viscosity:	**Not Applicable**	**Percent Volatile:**	**100%**
Boiling Point:	**Not Determined**	**Freezing or Melting Point:**	**Nit Determined**
Flammability:	**Not Flammable**	**Flash Point:**	**Not Available**
		Upper Flammability Limit and Lower Flammability Limit:	**Not Applicable**

10 STABILITY AND REACTIVITY

Chemical Stability:	**Stable**
Conditions to Avoldentification:	**Avoid open flames and high temperatures.**
Materials to Avoldentification:	**None Known**
Hazardous Decomposition:	**None known.**
Hazardous Polymerization:	**Will not occur.**

11 TOXICOLOGICAL INFORMATION

Oxygen cas#:(7782-44-7) [0.0001-19.49%]

Information on toxicological effects

Acute toxicity:
Oral LD50 no data available
Inhalation LC50
Dermal LD50
Other information on acute toxicity

Skin corrosion/irritation: no data available

Serious eye damage/eye irritation: no data available

Respiratory or skin sensitization: no data available

Germ cell mutagenicity: no data available

Carcinogenicity:
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity: no data available

Teratogenicity: no data available

Specific target organ toxicity - single exposure (Globally Harmonized System):
no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System):
no data available

Aspiration hazard: no data available

Potential health effects: Inhalation May be harmful if inhaled. May cause respiratory tract irritation. Ingestion May be harmful if swallowed. Skin May be harmful if absorbed through skin. May cause skin irritation. Eyes May cause eye irritation.

Signs and Symptoms of Exposure: Nausea, Dizziness, Unconsciousness, May be harmful.

Synergistic effects: no data available

Additional Information:

RTECS: RS2060000

Nitrogen cas#:(7727-37-9) [80.51-99.9999%]

Information on toxicological effects

Acute toxicity:
Oral LD50 no data available
Inhalation LC50
Dermal LD50
Other information on acute toxicity

Skin corrosion/irritation: no data available

Serious eye damage/eye irritation: no data available

Respiratory or skin sensitization: no data available

Germ cell mutagenicity: no data available

Carcinogenicity:
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity: no data available

Teratogenicity: no data available

Specific target organ toxicity - single exposure (Globally Harmonized System):
no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System):
no data available

Aspiration hazard: no data available

Potential health effects: Inhalation May be harmful if inhaled. May cause respiratory tract irritation. Ingestion May be harmful if swallowed. Skin May be harmful if absorbed through skin. May cause skin irritation. Eyes May cause eye irritation.

Signs and Symptoms of Exposure: May be harmful., Nausea, Headache, Vomiting

Synergistic effects: no data available

Additional Information:

RTECS: QW9700000

12 ECOLOGICAL INFORMATION

Oxygen cas#:(7782-44-7) [0.0001-19.49%]

Information on ecological effects

Toxicity: no data available

Persistence and degradability: no data available

Bioaccumulative potential: no data available

Mobility in soil: no data available

PBT and vPvB assessment: no data available

Other adverse effects: no data available

Nitrogen cas#:(7727-37-9) [80.51-99.9999%]

Information on ecological effects

Toxicity: no data available

Persistence and degradability: no data available

Bioaccumulative potential: no data available

Mobility in soil: no data available

PBT and vPvB assessment: no data available

Other adverse effects: no data available

13 DISPOSAL CONSIDERATIONS

Dispose of in accordance with local regulations. 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 NorLab for proper disposal. Non-refillable containers should be vented in a well-ventilated area then

disposed of in compliance with local regulations, or returned to NorLab.

14 TRANSPORT INFORMATION

UN1956, Compressed gas, n.o.s., 2.2
Proper Shipping Name US:
UN1956, Compressed Gas, N.O.S., (Oxygen, Nitrogen), 2.2

Proper Shipping Name Canada:
UN1956, Compressed Gas, N.O.S., (Oxygen, Nitrogen), 2.2

15 REGULATORY INFORMATION

Component (CAS#) [%] - CODES

Oxygen (7782-44-7) [0.0001-19.49%] MASS, PA, TSCA

Nitrogen (7727-37-9) [80.51-99.9999%] MASS, PA, TSCA

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Regulatory CODE Descriptions
-----------------------------------------------------------------
MASS = MA Massachusetts Hazardous Substances List
PA = PA Right-To-Know List of Hazardous Substances
TSCA = Toxic Substances Control Act
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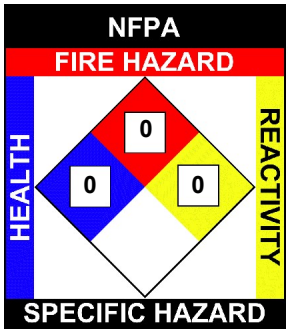
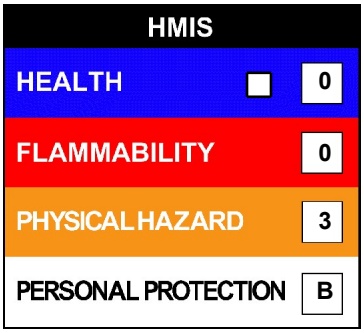
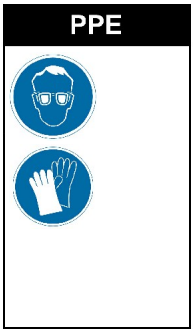
16 OTHER INFORMATION

NFPA: **Health = 0, Fire = 0, Reactivity = 0, Specific Hazard = n/a**
HMIS III: **Health = 0, Fire = 0, Physical Hazard = 3**
HMIS PPE: **B - Safety Glasses, Gloves**







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