

Carbon Dioxide 0.0001% to 50.0% in Nitrogen

SDS Number: NLB 2040

Revision Date: 9/9/2015

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PRODUCT AND COMPANY IDENTIFICATION

Manufacturer

NorLab a division of Norco
898 W. Gowen Rd.
Boise, ID 83705

Contact: Quality Dept.
Phone: 208-336-1643
Web: www.norlab-gas.com

Product Name: Carbon Dioxide 0.0001% to 50.0% in Nitrogen
Revision Date: 9/9/2015
Version: 1
SDS Number: NLB 2040
Common Name: Mixture
CAS Number: Not Applicable
EPA Number: Not Available
Chemical Family: Carbon Dioxide 0.0001% to 50.0%, in Nitrogen
Chemical Formula: N/A
Synonyms: CO2 in N2
Product Use: Calibration Gas Mixtures

For Transportation Emergency Contact CHEMTREC: 800-424-9300

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HAZARDS IDENTIFICATION

Classification of the substance or mixture

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.
CGA-HG03 - MAY INCREASE RESPIRATION AND HEART RATE.

GHS Precautionary Statements:

P202 - Do not handle until all safety precautions have been read and understood.
P271 - Use and store only outdoors or in a well-ventilated area.
P304+340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P313 - Get medical advice/attention.
P403 - Store in a well ventilated place.
P410+412 - Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F
CGA-PG05 - Use a back flow preventive device in the piping.
CGA-PG10 - Use only with equipment rated for cylinder pressure.

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CGA-PG06 - Close valve after each use and when empty.
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: Eyes; Inhalation; Skin;
Target Organs: Respiratory system;
Inhalation: Depending on concentration and duration of exposure, carbon dioxide may cause increased respiration, headache, mild narcotic effects, increased blood pressure and pulse, and asphyxiation. Symptoms of overexposure to carbon dioxide become more apparent when atmospheric oxygen is decreased to 15% to 17%. Chronic harmful effects are not known from repeated inhalation of concentrations below the PEL/TLV.

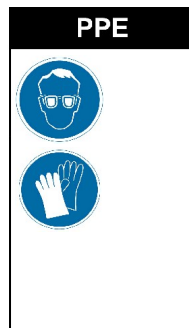
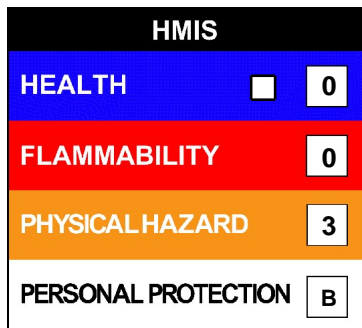
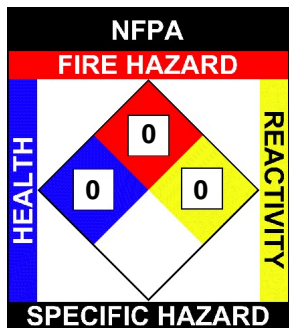
Product is a simple asphyxiant. This product may displace oxygen if released in a confined space. Maintain oxygen levels above 19.5% at sea level to prevent asphyxiation. Effects of oxygen deficiency resulting from simple asphyxiants may include: rapid breathing, diminished mental alertness, impaired 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. None anticipated. Contact with rapidly expanding gas near the point of release may cause frostbite.

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



3 COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients:

Cas#	%	Chemical Name
124-38-9	0.0001-50.0%	Carbon dioxide
7727-37-9	50.0-99.999%	Nitrogen

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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:** None required for gas. For frostbite, immerse skin in lukewarm water. DO NOT USE HOT WATER. Obtain medical attention.
- Eye Contact:** 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 Temp:** None
- LEL:** None
- UEL:** 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:

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**

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.

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 a fire, explosion, asphyxiation or a toxic exposure.

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

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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. Post "NO SMOKING OR OPEN FLAMES" sign in the storage or use area.

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: HMIS PP, B | Safety Glasses, Gloves
Eye/Face Protection: Safety goggles or glasses as appropriate for the job.

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.

Carbon Dioxide
 OSHA PEL: 5000 PPM
 ACGIH PEL: 5000 PPM STEL: 30,000 PPM
 LC₅₀ : 123,390 PPM / inhalation rat 4 hrs
 RTECS#: FF640000
 IDLH: 40,000 PPM

Nitrogen
 OSHA PEL: None Established
 ACGIH PEL: Simple Asphyxiant
 LC₅₀ or LD₅₀: Not Available
 RTECS#: QW9700000
 IDLH: None Established

9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Colorless Gas	Odor:	Odorless
Physical State:	Gas	Molecular Formula:	Mixture
Odor Threshold:	Not Applicable	Solubility:	Slightly Soluble
Particle Size:	Not Applicable	Softening Point:	Not Applicable
Spec Grav./Density:	Not Available	Percent Volatile:	100%
Viscosity:	Not Applicable	Freezing/Melting Pt.:	Not Available
Sat. Vap. Conc.:	Not Applicable	Flash Point:	Not Applicable
Boiling Point:	Not Available	Vapor Density:	Not Available
Flammability:	Not Applicable		
Molecular weight:	Mixture		

10 STABILITY AND REACTIVITY

Chemical Stability: Product is stable under normal conditions.

Conditions to Avoid: Carbonic acid is formed in the presence of moisture.

Materials to Avoid: Ammonia, Certain reactive metals, hydrides, moist cesium monoxide, or lithium acetylene carbide diammino may ignite. Passing carbon dioxide over a mixture of sodium peroxide and aluminum or magnesium may explode.

Hazardous Decomposition: Carbon Oxides and Carbonic Acid (in the presence of water or moisture).

Hazardous Polymerization: Will not occur.

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11 TOXICOLOGICAL INFORMATION

Acidosis, adrenal cortical exhaustion, and other metabolic stresses have resulted from prolonged continuous exposure to 1 - 2% carbon dioxide (10,000 PPM - 20,000 PPM). The ACGIH TLV of 5,000 ppm is expected to provide a good margin of safety from asphyxiation and undue metabolic stress, provided sufficient oxygen levels are maintained in the air. Increased physical activity, duration of exposure, and decreased oxygen content can affect systemic and respiratory effects resulting from exposure to carbon dioxide. SIGNS/SYMPTOM: Two percent Carbon dioxide in inhaled air increases pulmonary ventilation 50%; 5% carbon Dioxide, 100% and 7.2% of Carbon Dioxide 200%. Dizziness, headache, confusion and dyspnea occur at 5% Carbon Dioxide; 8 to 10% causes severe headache, sweating, dimness of vision and tremor, and consciousness is lost after 5 to 10 minutes.

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

Exposure of female rats to 60,000 PPM carbon dioxide for 24 hours has produced toxic effects to the embryo and fetus in pregnant rats. Toxic effects to the reproductive system have been observed in other mammalian species at similar concentrations.

Chronic, harmful effects are not known from repeated inhalation of low (3 to 5 molar %) concentrations.

12 ECOLOGICAL INFORMATION

Product does not contain Class I or Class II ozone depleting substances. Not toxic. Will not bioconcentrate.

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

DOT Class: Non-Flammable Gas (2.2) #2.2

Proper Shipping Name US:

UN 1956, Compressed Gas N.O.S., (Carbon Dioxide, Nitrogen), 2.2

Proper Shipping Name Canada:

UN1956, Compressed Gas, N.O.S., (Carbon Dioxide, Nitrogen), 2.2

**15 REGULATORY INFORMATION**

Component (CAS#) [%] - CODES

Carbon dioxide (124-38-9) [0.0001-50.0%] MASS, OSHAWAC, PA, TSCA, TXAIR

Nitrogen (7727-37-9) [50.0-99.999%] MASS, PA, TSCA

Regulatory CODE Descriptions

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MASS = MA Massachusetts Hazardous Substances List
OSHA = OSHA Workplace Air Contaminants
PA = PA Right-To-Know List of Hazardous Substances
TSCA = Toxic Substances Control Act
TXAIR = TX Air Contaminants with Health Effects Screening Level

16	OTHER INFORMATION
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