0.0001% to 1.0% Nitrous Oxide in Nitrogen

1 PRODUCT AND COMPANY IDENTIFICATION

Product Identifier:	**0.0001% to 1.0% Nitrous Oxide in Nitrogen**
Synonyms:	**None**
Common Name:	**Nitrous Oxide in Nitrogen**
SDS Number:	**NLB 3225**
Revision Date:	**7/7/2016**
Version:	**1**
CAS Number:	**Not Available**
EPA Number:	**Not Available**
Chemical Family:	**Gas Mixture**
Chemical Formula:	**N2O + 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**
Fax:	**208-433-6160**
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.
P251 - Pressurized container: Do not pierce or burn, even after use.
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray.
P304+340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P403+233 - Store in a well ventilated place. Keep container tightly closed.
CGA-PG02 - Protect from sunlight when ambient temperature exceeds 52 °C (125 °F).
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.

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

Route of Entry:	**Inhalation;**
Target Organs:	**Respiratory system;**
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.

High concentrations of Nitrous Oxide may act as an anesthetic, may cause repiratory irritation and cns depression.

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
10024-97-2	0.0001-1.0%	Nitrous oxide
7727-37-9	99.0-99.9999 %	Nitrogen

4 FIRST AID MEASURES

Inhalation: **Not considered dangerous.**

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.**

0.0001% to 1.0% Nitrous Oxide in Nitrogen

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

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 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:

All ventilation should be designed in accordance with OSHA standard (29 CFR 1910.94). Use local exhaust at filling zones and where leakage and dust formation is probable. Use mechanical (general) ventilation for storage areas. Use appropriate ventilation as required to keep Exposure limits in Air below TLV & PEL limits. Maintain atmospheric Oxygen content at or above 19.5%

Personal Protective Equipment:

Nitrous oxide (10024-97-2) [0.0001-1.0%]
Nitrogen (7727-37-9) [99.0-99.9999%]

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.

Nitrous oxide (10024-97-2) [0.0001-1.0%]

Components with workplace control parameters
TWA 50 ppm USA. ACGIH Threshold Limit Values (TLV)
Central Nervous System impairment Hematologic effects Embryo/fetal damage Not classifiable as a human carcinogen

TWA 25 ppm USA. NIOSH Recommended Exposure Limits
46 mg/m3
REL for exposure to waste anesthetic gas TWA over the time exposed

Nitrogen (7727-37-9) [99.0-99.9999%] : no data available

0.0001% to 1.0% Nitrous Oxide in Nitrogen

9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	**Colorless Gas**		
Physical State:	**Gas**	**Odor:**	**Odorless**
Odor Threshold:	**Not Applicable**	**Molecular Formula:**	**N2O + 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**	**Heat Value:**	**Not Determined**
Flammability:	**Not Flammable**	**Freezing or Melting Point:**	**Not Determined**
		Flash Point:	**Not Determined**
		Upper Flammability Limit and Lower Flammability Limit:	**N/A**

10 STABILITY AND REACTIVITY

Chemical Stability:	**Stable**
Conditions to Avoldentification:	**Avoid open flames and high temperatures.**
Materials to Avoldentification:	**All flammable, inorganic, and combustible materials. Avoid heat, starks, flames, and other ignitions sources**
Hazardous Decomposition:	**Under normal conditions of storage and use, hazardous decomposition products should not be produced.**
Hazardous Polymerization:	**Will not occur.**

11 TOXICOLOGICAL INFORMATION

Nitrous oxide (10024-97-2) [0.0001-1.0%]

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:
This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.
IARC: 3 - Group 3: Not classifiable as to its carcinogenicity to humans (Dinitrogen oxide)
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: Overexposure may cause reproductive disorder(s) based on tests with laboratory animals.
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: anesthetic effects
Synergistic effects: no data available
Additional Information:RTECS: QX1350000

Nitrogen (7727-37-9) [99.0-99.9999%]

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

Nitrous oxide (10024-97-2) [0.0001-1.0%]

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 (7727-37-9) [99.0-99.9999%]

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

Proper Shipping Name US:
UN1956, Compressed Gas, N.O.S., (Nitrous Oxide, Nitrogen), 2.2

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

15 REGULATORY INFORMATION

COMPONENT / (CAS/PERC) / CODES
---
*Nitrous oxide (10024972 0.0001-1.0%)PA, TSCA, TXAIR

*Nitrogen (7727379 99.0-99.9999%), MASS, PA, TSCA

WARNING

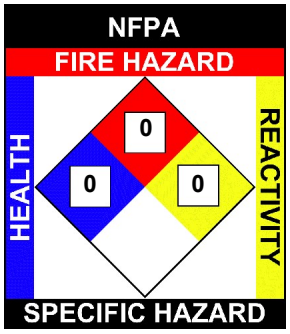
This product can expose you to chemicals including Nitrous oxide [Basis for listing changed effective November 8, 2013], which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

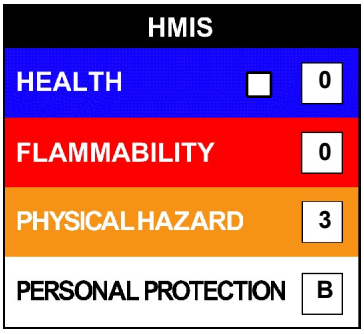
REGULATORY KEY DESCRIPTIONS

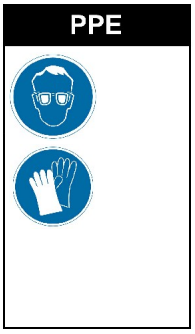
PA = PA Right-To-Know List of Hazardous Substances
TSCA = Toxic Substances Control Act
TXAIR = TX Air Contaminants with Health Effects Screening Level
MASS = MA Massachusetts Hazardous Substances List

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**







Disclaimer:
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).

Revision Date: 7/7/2016