



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

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

Nitrous Oxide, 0.0001% to 1.0% in Air

MATERIAL SAFETY DATA SHEET

Identification

Product Name: Nitrous Oxide 0.0001% to 1.0% in Air
CAS Number: Not Available
Chemical Family: Gas Mixture
Chemical Formula: N₂O in Air
Synonyms: N/A
MSDS Identification Code/Number: NLB 3220
Prepared By: Quality Dept.

Revision Date: 09/09/13
Last Review Date: 09/09/13

Composition, Information on Ingredients

Exposure Limits¹:

INGREDIENT	% VOLUME	PEL-OSHA ²	TLV-ACGIH ³	LD ₅₀ or LC ₅₀ Route/Species
Nitrous Oxide Formula: N ₂ O CAS Number: 10024-97-2 RTECS#: QX1350000	0.0001% to 1.0%	Not Available, Simple Asphixiant	50 PPM TWA	Not Available
Air Formula: Not Applicable CAS #: Not Applicable RTECS#: Not Applicable	99.0% to 99.9999%	None Established	None Established	Not Available

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

² As stated in 29 CFR 1910, Subpart Z (revised July 1, 1993).

³ As stated in the ACGIH 2007 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:

Colorless, odorless, high pressure gas. This mixture contains sufficient oxygen to support life. This product contains traces of Nitrous Oxide which may cause incoordination and narcosis, and clinical anesthesia. Avoid heat and flames. Protect containers from physical damage. Use and store below 125°F (52°C).

Route of Entry:

Skin Contact No	Skin Absorption No	Eye Contact No	Inhalation Yes	Ingestion No
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Health Effects:

Exposure Limits Yes	Irritant No	Sensitization No
Teratogen No	Reproductive Hazard Yes	Mutagen Yes
Synergistic Effects None reported.		

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:

Ingestion is unlikely. Product is a gas at room temperature.

Inhalation Effects:

This product contains traces of Nitrous Oxide which may cause incoordination and narcosis, and clinical anesthesia. Exposure to Nitrous Oxide has produced embryo fetal toxicity in laboratory animals. Exposure to Nitrous Oxide may be associated with an increased incidence of abortion in humans.

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

Hazard ratings were assigned in accordance with Compressed Gas Association (CGA) guidelines as published in CGA Pamphlet P-19-2009, *CGA Recommended Hazard Ratings for Compressed Gases, 3rd Edition*.

First Aid Measures

Eye:

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 anticipated, product is a gas at normal conditions.

Inhalation:

PROMPT REMOVAL FROM THE CONTAMINATED AREA AND IMMEDIATE 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 assisted (artificial) respiration and supplemental oxygen. Further treatment should be symptomatic and supportive.

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 Fighting Measures Continued

Fire and Explosion Hazards:

Nonflammable. Cylinders may rupture violently from pressure if involved in a fire situation.

Extinguishing Media:

None, 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-facepiece 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 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 or container 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

Gas mixture is non-corrosive and may be used with any common structural material.

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

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 form 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:

Local exhaust ventilation used in combination with general ventilation as necessary to control air contaminants at or below acceptable exposure guidelines.

Eye/Face Protection:

Safety goggles or glasses as appropriate for the job.

Skin Protection:

Protective gloves of material appropriate for the job.

Respiratory Protection:

Local exhaust ventilation used in combination with general ventilation as necessary to control air contaminants at or below acceptable exposure guidelines.

Other/General Protection:

Safety shoes

Physical and Chemical Properties

PARAMETER	VALUE	UNITS
Physical state (gas, liquid, solid)	: Gas	
Vapor pressure	: Not Available	
Vapor density (Air = 1)	: ~ 1	
Evaporation point	: Not Available	
Boiling point	: Not Available	°F
	: Not Available	°C
Freezing point	: Not Available	°F
	: Not Available	°C
pH	: Not Available	
Specific gravity	: Not Available	
Oil/water partition coefficient	: Not Available	
Solubility (H ₂ O)	: Not Available	
Odor threshold	: Not Applicable	
Odor and appearance	: Colorless, odorless gas.	

Stability and Reactivity

Stability:

Stable

Incompatible Materials:

Boron, Hydrazine, Lithium Hydride, Phosphine, Sodium

Hazardous Decomposition Products:

None

Hazardous Polymerization:

Will not occur

Toxicological Information

Inhalation:

This product contains traces of Nitrous Oxide which may cause incoordination and narcosis, and clinical anesthesia

Reproductive:

Exposure to Nitrous Oxide has produced embryo fetal toxicity in laboratory animals. Exposure to Nitrous Oxide may be associated with an increased incidence of abortion in humans.

Ecological Information

Product does not contain Class I or Class II ozone depleting substances. Not toxic. Not expected to be toxic to fish and wildlife. Will not bioconcentrate.

Disposal Considerations

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.

Transportation Information

Parameter	United States DOT	Canada TDG
Proper Shipping Name:	Compressed Gas, N.O.S. (Nitrous Oxide, Air)	Compressed Gas, N.O.S.
Hazard Class:	2.2	2.2
Identification Number:	UN 1956	UN 1956
Shipping Label:	Nonflammable Gas	Nonflammable Gas

Regulatory Information

SARA Title III Notifications and Information:**SARA Title III – Hazard Classes:**

Sudden Release of Pressure
Chronic Health

SARA Title III- Section 313 Supplier Notification:

This product does not contain toxic chemicals subject to reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act (EPCRA) of 1986 and of 40 CFR 372.

California Proposition 65:

This product contains an ingredient (Nitrous Oxide) known to the State of California to cause birth defects or other reproductive harm.

Other Information

Compressed gas cylinders must 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:

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