



Date Prepared: July 1, 1992

Date Reviewed: March 22, 2006

MATERIAL SAFETY DATA SHEET

Product Name: Nitrous oxide

March 22, 2006

1. Chemical Product and Company Identification

Linweld, Inc
9911 Deer Park Road
Waverly, NE 68462

Telephone Number
Information: (402) 786-3330
Emergency: (402) 786-5277

Product Name: Nitrous oxide
Chemical Name: Nitrous Oxide
Common Names: Dinitrogen monoxide; Laughing gas; Fictitious Air; Hyponitrous acid anhydride, Nitrous oxide USP

2. Hazard Ingredients and Identity Information

Component	% VOLUME	OSHA-PEL	ACGIH-TLV	CAS NUMBER
Nitrous oxide	> 99.0	N/A	50 ppm TWA	010024-97-2

3. Physical and Chemical Characteristics

Boiling Point:	-127.4° F	Vapor Density:	1.53	pH:	N/A
Melting Point:	-131.6° F	Evaporation Rate:	N/A	Physical State:	Gas
Vapor Pressure:	N/A	Solubility (H2O):	Slightly		

Appearance and Odor:

Colorless gas, with slightly sweet taste and odor.

How to Detect This Substance:

N/A

Other Physical and Chemical Data:

Liquid density at boiling point, 76.8 lb/ft³ (1230 kg/m³)
Gas density at 70° F 1 atm, 0.1146 lb/ft³ (1.836 kg.m³)

4. Fire and Explosion Hazard Data

Flammability Classification:	Nonflammable	Flash Point (F):	N/A	LEL (%):	N/A
Ignition Temperature:	N/A	Method:	N/A	UEL (%):	N/A

Extinguishing Media:

Copious amounts of water for fires with nitrous oxide as the oxidizer.

Fire Fighting Procedures:

If possible, stop the flow of nitrous oxide, which is supporting the fire. If cylinders are involved in a fire, safely relocate or keep cool with water spray.

Fire & Explosion Hazard:

Nitrous oxide may decompose violently at temperatures above 1112° F.

5. Reactivity Data

Stability:	Stable	Hazardous Polymerization:	Will not occur
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Incompatibility:

All flammable materials.

Conditions to Avoid:

N/A

5. Reactivity Data (Continued)**Hazardous Decomposition or Byproducts:**

At elevated temperatures, nitrous oxide decomposes into nitrogen and oxygen, the rate of decomposition being appreciable at about 1112° F. Nitrous oxide exposed to fire or other intense heat sources may decompose violently.

Other Reactivity Data:

Nitrous oxide will serve as the oxidant for most flammable materials. Some flammables will have a lower flammable limit in nitrous oxide than in pure oxygen. Powerful reducing agents will react violently.

6. Health Hazard Data

Route(s) of Entry:	Eye contact Yes	Skin Contact Yes	Skin Absorption No
	Inhalation Yes	Ingestion Yes	

Health Hazards:**Acute**

High concentrations of nitrous oxide may cause deep breathing, dizziness, nausea and eventual unconsciousness due to inadequate oxygen supply. Anesthetic effects may occur when mixed with oxygen at a ratio of 80% NO₂ to 20% O₂. Laughter effects seem to occur after incipient asphyxia accompanied by the sudden return of oxygen as in air. Nitrous oxide is a slight narcotic, but lacks substantial toxicity. Asphyxia will occur due to oxygen exclusion. Maintain oxygen levels above 19.5%.

Chronic

N/A

Carcinogenicity:

NTP No	IARC Monographs No	OSHA No
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Signs and Symptoms of Exposure and Emergency First Aid Procedures:**Eye Contact**

No adverse effects anticipated.

If pain is present, seek attention of an ophthalmologist for further treatment.

Skin Contact

No adverse effects anticipated.

Inhalation

High concentrations of nitrous oxide may cause deep breathing, dizziness, nausea and eventual unconsciousness due to inadequate oxygen supply. Laughter effects seem to occur after incipient asphyxia accompanied by the sudden return of oxygen as in air. Nitrous oxide is a slight narcotic, but lacks substantial toxicity. Asphyxia will occur due to oxygen exclusion.

Conscious victim should be assisted to an uncontaminated area and allowed to inhale fresh air. Unconscious victim should be moved to an uncontaminated area and given assisted respiration and supplemental oxygen.

Ingestion

Ingestion is unlikely.

Medical Conditions Aggravated by Exposure:

Persons of ill health that may be aggravated by exposure to nitrous oxide should not be allowed to work with this product.

7. Precautions for Safe Handling and Use**Actions if Released or Spilled:**

Evacuate all personnel from affected area. Use appropriate personal protective equipment. If leak is in the user's equipment, be certain to purge piping with inert gas prior to attempting repairs. If leak is in cylinder or cylinder valve, contact the nearest distributor.

Waste Disposal Method:

Do not attempt to dispose of waste or unused quantities. Return in properly labeled shipping container, with any valve outlet plugs or caps secured and valve protection caps in place.

7. Precautions for Safe Handling and Use (Continued)

Handling and Storage Precautions:

Use only in well-ventilated areas. Valve protection caps must remain in place unless container 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-reducing regulator when connecting cylinder to lower pressure piping or systems. Use check valve or trap in discharge line to prevent hazardous backflow into the system.

Protect cylinders from physical damage. Store in cool, dry, well ventilated area away from heavy traffic areas and emergency exits. Do not allow temperature of storage area to exceed 125° F. Cylinders should be stored upright and firmly secured to prevent falling or being knocked over. Full and empty cylinders should be segregated.

Other

Precautions:

Nitrous oxide is noncorrosive and may be used with common structural materials.

Compressed gas cylinders should only be refilled by qualified personnel. Shipment of compressed gas cylinders that have been filled without the consent of the cylinder owner is a violation of federal law (49 CFR).

Always secure cylinders in an upright position during transportation. Never transport cylinders in enclosed space such as a vehicle truck or van.

For additional recommendations, see CGA Pamphlets P-1, P-2, P-14, SB-2, SB-6.

Transportation Information:

Shipping Name	Nitrous oxide
Hazard Class	2.2
ID Number	UN1070
Shipping Label - 1	Nonflammable Gas
- 2	Oxidizer

NFPA Rating:

Health: 2 Flammability: 0 Reactivity: 0

8. Control Measures

Eye Protection:

Safety glasses or goggles as appropriate

Protective Gloves:

Protective gloves of any suitable material

Respiratory Protection:

Positive pressure airline with full mask or self-contained breathing apparatus should be available for emergency use.

Ventilation:

Local exhaust to prevent nitrous oxide accumulation sufficient to reduce oxygen concentration below 19.5% and nitrous oxide concentration below the exposure limit.

Other Protective Clothing or Equipment:

Safety shoes as appropriate.

9. Regulatory Information

SARA TITLE III NOTIFICATIONS AND INFORMATION

SARA Title III – Section 313 Supplier Notification:

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

SARA Title III – Hazard Classes:

Acute Health Hazard
Fire Hazard
Sudden Release of Pressure Hazard
Chronic Health Hazard

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