

**MATERIAL SAFETY DATA SHEET, NO. 005200**  
**NY-TROUS +**  
NITROUS OXIDE AND SULFUR DIOXIDE MIXTURE

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**SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**

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Issue Date: Revised February, 2003  
Manufacturer's Name: Puritan Medical Products, Inc.  
Address: 9101 Bond Street, Overland Park, Kansas 66214  
Emergency Phone No: 1-800-949-7937  
All other inquiries: 913-495-3600  
Chemical Name and Synonyms: Nitrous oxide and sulfur dioxide mixture  
Trade Name and Synonyms: NY-TROUS+  
Chemical Family: Oxide of nitrogen, oxide of sulfur  
Formula: N<sub>2</sub>O, SO<sub>2</sub>

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**SECTION 2 - COMPOSITION / INFORMATION ON INGREDIENTS**

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<u>Material</u>	<u>Volume %</u>	<u>CAS No.</u>	<u>OSHA PEL</u>	<u>ACGIH TLV / STEL</u>
Sulfur Dioxide	50-100 ppm	7446-09-5	5 ppm	2 ppm/5 ppm
Nitrous Oxide	Balance	10024-97-2	Simple Asphyxiant	50 ppm / -

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**SECTION 3 - HAZARDS IDENTIFICATION**

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**EMERGENCY OVERVIEW**

**CAUTION!**

High pressure oxidizing gas.  
Do not breathe gas.  
Vigorously supports combustion.

Effects of Overexposure:  
(inhalation)

Asphyxiation can occur by displacement of air. Can induce hysteria, dizziness, unconsciousness and death. Sulfur dioxide at 8-12 ppm can cause throat irritation, coughing, constriction of the chest and eye irritation.

Carcinogenicity:

Not listed in NTP or IARC; not regulated as a carcinogen by OSHA

Chronic Effects:

Some epidemiologic studies suggest that long term exposure to nitrous oxide may have certain health hazards including neurological and reproductive effects.

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**SECTION 4 - FIRST AID MEASURES**

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Emergency and First Aid Procedures: Remove to fresh air. If breathing is difficult, administer oxygen. If breathing has stopped, administer artificial respiration. Obtain prompt medical attention.

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## SECTION 5 - FIRE FIGHTING MEASURES

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Flash Point:	N/A
Flammable Limit:	N/A
Autoignition:	N/A
Extinguishing Media:	Non-flammable, vigorously supports combustion.
Special Fire Fighting Procedures:	Keep containers cool with water spray. Remove source of nitrous oxide which accelerates combustion; stop gas flow.
Unusual Fire and Explosion Hazards:	Excessive pressure can build up due to heat. Containers may explode if pressure relief devices should fail to relieve pressure.

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## SECTION 6 - ACCIDENTAL RELEASE MEASURES

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Steps to be taken in case material is released or spilled:	Provide adequate ventilation to maintain oxygen concentration above 19.5% by volume. Emergency personnel will require self-contained breathing apparatus if oxygen concentration is below 19.5% by volume. Evacuate the area affected. Use appropriate protective equipment. Remove ignition sources.
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## SECTION 7 - HANDLING AND STORAGE

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Precautions to be taken in handling and storage:	Cylinders should not be dropped. Keep properly secured or protected to prevent cylinders from being knocked over. Material can be stored outside. Temperature should be kept below 125°F.
Other Precautions:	Cylinders should be stored upright with valve cap in place. Cylinders must not be recharged unless by or with the consent of the Puritan Medical Products, Inc.

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## SECTION 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

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Eye Protection:	Safety goggles or glasses
Protective Gloves:	PVC or rubber
Local Exhaust:	Recommended exhaust to prevent accumulation above the TWA.
Ventilation:	See Section 6; use hood with forced ventilation.
Respiratory Protection:	See Section 6; positive pressure airline with mask or self-contained breathing apparatus.
Other Protective Equipment:	Safety shoes when handling cylinders.

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## SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

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Molecular Weight:	N/A
Boiling Point:	N/A
Vapor Pressure:	N/A
Specific Gravity (Air = 1.0):	N/A
Solubility in Water:	Slight
Percent Volatile by Volume:	100%
Evaporation Rate:	Gas
Appearance, odor and state:	Colorless gas with pungent irritating odor.

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## SECTION 10 - STABILITY AND REACTIVITY

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Stability:	Stable
Conditions to Avoid:	Excess heat. Can decompose at high temperatures.
Materials to Avoid:	Hydrocarbons and other flammable materials.
Hazardous Decomposition Products:	Primarily decomposes to nitrogen and oxygen, some nitric oxide or nitrogen dioxide may be produced.
Hazardous Polymerization:	Will not occur

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### SECTION 11 - TOXICOLOGICAL INFORMATION

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Reproductive Effects	Exposure to nitrous oxide may cause adverse reproductive effects.
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### SECTION 12 - ECOLOGICAL INFORMATION

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No adverse ecological effects are expected.

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### SECTION 13 - DISPOSAL CONSIDERATIONS

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Waste Disposal Method:	The cylinder should be returned to the supplier for disposal. The cylinder may be emptied by a person knowledgeable in the hazards of high pressure cylinders as follows: Move the cylinder to an exhaust hood or an open outdoor area. Attach a regulator to the cylinder and vent the remaining gas.
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### SECTION 14 - TRANSPORT INFORMATION

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DOT / IMO Shipping Name:	Compressed Gas, oxidizing, n.o.s., (Nitrous oxide, sulfur dioxide)
Hazard Class:	2.2 (Nonflammable Gas)
Identification number:	UN 3156
Product RQ	None
Shipping Label(s)	Nonflammable gas and oxidizer
Placard (when required)	Nonflammable gas
Special Shipping Information	Cylinders should be transported in a secure position, in a well ventilated vehicle. The transportation of compressed gas cylinders in automobiles or in closed-body vehicles can present serious safety hazards and should be discouraged.

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### SECTION 15 - REGULATORY INFORMATION

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The following information concerns selected regulatory requirements potentially applicable to this product. Not all requirements are identified. Users of this product are responsible for their own regulatory compliance on a federal, state and local level.

U.S. Federal Regulations:

CERCLA:	Reportable Quantity: None
SARA	Extremely Hazardous Substances: None
	Threshold Planning Quantity: None
SARA HAZARD CLASS:	Immediate: No
	Delayed: No
	Pressure: Yes
	Reactivity: No
	Fire: No
SARA ANNUAL REPORT 40 CFR PART 68:	Not required
	Mixture not listed

TSCA  
OSHA  
FDA

Nitrous oxide and sulfur dioxide are listed on the TSCA inventory.  
Components of this mixture are not listed in Appendix A.  
N/A

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### SECTION 16 - OTHER INFORMATION

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NFPA Ratings:

Health = 3  
Flammability=0  
Reactivity=0  
Special=OX

Standard Valve Connection:

Threaded: CGA 660  
Use the proper CGA connections  
Do not use adapters.

Additional Information:

Please refer to CGA Bulletin SB-2 "Oxygen Deficient Atmospheres", P-1 "Safe Handling of Compressed Gases in Containers", SB-4, P-14 "Accident Prevention in Oxygen-Rich and Oxygen-Deficient Atmospheres", SB-6 "Nitrous Oxide Security and Control", and CGA Pamphlets P-12 "Safe Handling of Cryogenic Liquids", G-8.2 "Commodity Specifications for Nitrous Oxide", G-4.1 "Cleaning Equipment for Oxygen Service".

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