MATERIAL SAFETY DATA SHEET
Prepared to U.S. OSHA, CMA, ANSI and Canadian WHMIS Standards

1. PRODUCT IDENTIFICATION

CHEMICAL NAME; CLASS: NON-FLAMMABLE GAS MIXTURE

Containing the Following Component in a Nitrogen Balance Gas:
Nitric Oxide: 0.0005 - 0.025%

SYNONYMS: Not Applicable

CHEMICAL FAMILY NAME: Not Applicable

FORMULA: Not Applicable

Document Number: 50026 (Replaces ISC MSDS No.1810-2153, 1810-7508, 1810-7722)

Note: The Material Safety Data Sheet is for this gas mixture supplied in cylinders with 33 cubic feet (935 liters) or less gas capacity (DOT - 39 cylinders). This MSDS has been developed for various gas mixtures with the composition of components within the ranges listed in Section 2 (Composition and Information on Ingredients). Refer to the product label for information on the actual composition of the product.

PRODUCT USE:
Calibration of Monitoring and Research Equipment

SUPPLIER/MANUFACTURER'S NAME:
CALGAZ

ADDRESS:
921 Chesapeake Drive
Cambridge, MD 21613

EMERGENCY PHONE:
CHEMTREC: 1-800-424-9300
General MSDS Information: 1-713-868-0440
Fax on Demand: 1-800/231-1386

2. COMPOSITION and INFORMATION ON INGREDIENTS

| CHEMICAL NAME | CAS # | mole % | EXPOSURE LIMITS IN AIR
|---------------|-------|--------|------------------------
| Nitric Oxide  | 10102-43-9 | 0.0005-0.02% | ACGIH-TLV: 25 ppm, OSHA-PEL: 25 ppm, NIOSH IDLH: 100 ppm, OTHER: NIOSH REL: TWA = 25 ppm |
| Nitrogen      | 7727-37-9 | Balance | There are no specific exposure limits for nitrogen. Nitrogen is a simple asphyxiant (SA). Oxygen levels should be maintained above 19.5%. |

Note: NE = Not Established. See Section 16 for Definitions of Terms Used.

NOTE (1): ALL WHMIS required information is included in appropriate sections based on the ANSI Z400.1-1998 format. This gas mixture has been classified in NE = Not Established. See Section 16 for Definitions of Terms Used.

3. HAZARD IDENTIFICATION

EMERGENCY OVERVIEW: This gas mixture is a colorless gas with an irritating odor. Nitric Oxide (Nitrogen Monoxide), a component of this gas mixture, can produce brownish Nitrogen Dioxide after reaction with oxygen. Nitric Oxide can produce adverse health effects in extremely low concentrations (i.e. skin and eye irritation, dry throat); symptoms of over-exposure may not become apparent for up to 72 hours. Releases of this gas mixture may produce oxygen-deficient atmospheres (especially in confined spaces or other poorly-ventilated environments); individuals in such atmospheres may be asphyxiated.

SYMPTOMS OF OVER-EXPOSURE BY ROUTE OF EXPOSURE: The most significant route of over-exposure for this gas mixture is by inhalation.

INHALATION: Due to the small size of an individual cylinder of this gas mixture, no unusual health effects from over-exposure to the product are anticipated under routine circumstances of use. If this gas mixture is released in a small, poorly-ventilated area (i.e. an enclosed or confined space), over-exposure to Nitric Oxide or an oxygen-deficient environment may occur. Exposure to Nitric Oxide gas in low concentrations produces an irritating effect on the mucous membranes of the eyes, nose, throat, and lungs. Acute exposure through inhalation may result in dryness and irritation of the nose and throat, choking, coughing, and bronchospasm. Severe over-exposure may cause death through systemic, delayed pulmonary edema. Health effects observed after over-exposures to Nitric Oxide include the following:

- **CONCENTRATION OF NITRIC OXIDE**: 25 ppm for 8 hours, delayed pulmonary irritation (5 - 72 hours). 100 - 150 ppm, delayed pulmonary edema and for 30 - 60 minutes symptoms of pulmonary dysfunction.
- **OBSERVED EFFECT**: Delayed pulmonary damage may result after a delay of 5-8 hours.

NOTE: This gas mixture contains 5-200 ppm Nitric Oxide. Data pertinent to higher concentrations of Nitric Oxide are provided to give complete information on effects observed in humans after over-exposures have occurred.

A typical Nitric Oxide over-exposure incident follows the course described in the next paragraph:

After inhalation of a few breaths of Nitric Oxide, there is no immediate reaction, or only a very slight respiratory discomfort, headache, dizziness, or lassitude. Within 5-8 hours of exposure (frequently after the employee has left the workplace and returned home), it is noticed that the victim's lips and ears have a blue (cyanotic) color. There then follows rapidly increasing symptoms of breathing difficulty, irregular respiration, choking, dizziness, headache, increasing cyanosis, tightness in the chest, nausea, vomiting, lassitude, and palpitations. Left untreated, death frequently occurs. Physical examination immediately following over-exposure reveals an accelerated respiratory rate, decreased vital capacity, generally suppressed breathing sounds, low blood pressure, and a platelet count elevated by 10-100%.
Additionally, when this gas mixture is released in a small, poorly-ventilated area (i.e. an enclosed or confined space, an oxygen-deficient environment may occur. Individuals breathing such an atmosphere may experience symptoms which include headaches, ringing in ears, dizziness, drowsiness, unconsciousness, nausea, vomiting, and depression of all the senses. Under some circumstances of over-exposure, death may occur. 

ACUTE: Over-exposure to Nitric Oxide, a component of this gas mixture, to enter the body via absorption through the skin. The gas may be irritating to the skin, especially in a moist environment, for prolonged periods. Symptoms of skin over-exposure may include scratching, pain, and redness. If Nitric Oxide contaminates the eyes, severe injury and swelling of the eye tissue may occur.

HEALTH EFFECTS OR RISKS FROM EXPOSURE: An Explanation in Lay Terms. Over-exposure to this gas mixture may cause the following health effects:

ACUTE: Due to the small size of the individual cylinder of this gas mixture, no unusual health effects from exposure to the product are anticipated under routine circumstances of use. If this gas mixture is released in a small, poorly-ventilated area (i.e. an enclosed or confined space), over-exposure to Nitric Oxide or an oxygen-deficient environment may occur. Over-exposures to Nitric Oxide, a component of this gas mixture, may result in severe irritation and burns of eyes, skin, mucous membranes, and any other exposed tissue. If Nitric Oxide is Inhaled, delayed pulmonary damage occurs. Breathing difficulty may occur. Medical care is essential, as symptoms will rapidly worsen, possibly leading to death. 

CHRONIC: Prolonged or repeated over-exposures may cause respiratory problems, bronchitis, hacking cough, nasal irritation and discharge, increased fatigue, alteration in the senses of taste and smell. Repeated over-exposures to Nitric Oxide can also result in dental erosion and gum disorders.

RECOMMENDATIONS TO PHYSICIANS: Administer oxygen as soon as possible, following exposure. If possible, have victim breathe as deeply and rapidly as possible to help flush gas from the body. IN THE EVENT OF SEVERE OVER-EXPOSURES TO THIS GAS MIXTURE: Enforce bed rest for 24 - 48 hours, whether or not symptoms have appeared. Start oxygen therapy at the first sign of symptoms. Provide medication to reduce anxiety and dyspepsia, as needed. Keep respiratory tract clear of mucous and exudate. Atropine, ephedrine, expectorants, emetics, most sedatives, and most cardiac glycosides are usually ineffective and possibly harmful. Surgical intervention to assist breathing may be necessary. Respiratory infection should be controlled as soon as it is detected. Prednisone has been reported to be effective during recovery, in amounts of 3-6 x 10-6 kg daily, in divided doses. If Nitric Oxide contaminates the eye, use an optic anesthetic to reduce pain. The victim should be promptly examined by an ophthalmologist.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Acute or chronic respiratory conditions, skin conditions, or eye disorders may be aggravated by over-exposure to Nitric Oxide, a component of this gas mixture.

SKIN EXPOSURE: If irritation of the skin develops after exposure to this gas mixture, immediately begin decontamination with running water. Minimum flushing is for 15 minutes. Remove exposed or contaminated clothing, taking care not to contaminate eyes. Victim must seek immediate medical attention.

EYE EXPOSURE: If irritation of the eye develops after exposure to this gas mixture, open victim’s eyes while under gentle running water. Use sufficient force to open eyelids. Have victim “roll” eyes. Minimum flushing is for 15 minutes. Seek medical assistance immediately, preferably an ophthalmologist.

NON-FLAMMABLE GAS MIXTURE MSDS - 50026         EFFECTIVE DATE: JUNE 7, 2010
7. HANDLING and USE (Continued)

SPECIAL PRECAUTIONS FOR HANDLING GAS CYLINDERS: *WARNING* Compressed gases can present significant safety hazards. During cylinder use, use equipment designed for these specific cylinders. Ensure all lines and equipment are rated for proper service pressure.

PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT: Follow practices indicated in Section 6 (Accidental Release Measures). Make certain that application equipment is locked and tagged-out safely. Always use product in areas where adequate ventilation is provided.

VENTILATION AND ENGINEERING CONTROLS: No special ventilation systems or engineering controls are needed under normal circumstances of use. As with all chemicals, use this gas mixture in well-ventilated areas. If this gas mixture is used in a poorly-ventilated area, install automatic monitoring equipment to detect the levels of Nitric Oxide and oxygen.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

RESPIRATORY PROTECTION: No special respiratory protection is required under normal circumstances of use. Use supplied air respiratory protection if oxygen levels are below 19.5% or unknown during emergency response to a release of this gas mixture. If respiratory protection is needed, use only protection authorized in the U.S. Federal OSHA Standard (29 CFR 1910.134), applicable U.S. State regulations, or the Canadian CSA Standard Z195.4-03 and/or applicable standards. Oxygen levels below 19.16-33% are considered IDLV by OSHA. In such atmospheres, use of a full-facepiece pressure/demand SCBA or a full facepiece, supplied air respirator with auxiliary self-contained air supply is required under OSHA’s Respiratory Protection Standard (1910.134-1998). The following NIOSH respiratory protection recommendations for Nitric Oxide concentrations in air are in place.

NITRIC OXIDE

CONCENTRATION: Up to 100 ppm.

RESPIRATORY PROTECTION: Any Supplied-Air Respirator (SAR) operated in a continuous-flow mode or any Chemical Cartridge Respirator with a full facepiece and cartridge(s), providing protection against Nitric Oxide. Only non-oxidizable sorbents are allowed (not charcoal), or any Powered, Air-Purifying Respirator (PAPR) with cartridge(s) providing protection against Nitric Oxide, or a Full-Purifying, Full-Facepiece Respirator (gas mask) with a chin-style, front- or back-mounted canister providing protection against Nitric Oxide, or any SAR, or any Self-Contained Breathing Apparatus (SCBA) with a full facepiece.

Emergency or Planned Entry into Unknown Concentrations or IDLV Conditions: Any SCBA that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode, or any SAR that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-SCBA operated in pressure-demand or other positive-pressure mode.

Escape: Any Air-Purifying, Full-Facepiece Respirator (gas mask) with a chin-style, front- or back-mounted canister providing protection against Nitric Oxide. Only non-oxidizable sorbents are allowed (not charcoal), or any appropriate escape-type, SCBA.

EYE PROTECTION: Safety glasses. If necessary, refer to U.S. OSHA 29 CFR 1910.133 or appropriate Canadian Standards.

HAND PROTECTION: Wear leather gloves when handling cylinders. Chemically resistant gloves should be worn when using this gas mixture. If necessary, refer to U.S. OSHA 29 CFR 1910.133 or applicable Standards of Canada.

BODY PROTECTION: No special protection is needed under normal circumstances of use. If a hazard of injury to the feet exists due to falling objects, rolling objects, where objects may pierce the soles of the feet or where employee's feet may be exposed to electrical hazards, use foot protection, as described in U.S. OSHA 29 CFR 1910.136.

9. PHYSICAL and CHEMICAL PROPERTIES

The following information is for Nitrogen, the main component of this gas mixture.

GAS DENSITY @ 32°F [0°C] and 1 atm: 0.072 lbs/ft³ (1.153 kg/m³)

FREEZING/MELTING POINT @ 10 psi: +345.8°F (-210°C)

SPECIFIC GRAVITY (air = 1) @ 70°F [21.1°C]: 0.966

SOLUBILITY IN WATER: volved @ 32°F [0°C] and 1 atm: 0.023

EVAPORATION RATE [nBuAc = 1]: Not applicable.

VAPOR PRESSURE @ 70°F [21.1°C] (psig): Not applicable.

COEFFICIENT WATER/OIL DISTRIBUTION: Not applicable.

The following is information for this gas mixture.

APPEARANCE,ODOR AND COLOR: This gas mixture is a colorless gas with an irritating odor, based on the presence of Nitric Oxide. Nitric Oxide can produce brownish Nitrogen Dioxide after reaction with oxygen.

HOW TO DETECT THIS SUBSTANCE (warning properties): There are no unusual warning properties associated with a release of this gas mixture. In terms of leak detection, fittings and joints can be painted with a soap solution to detect leaks, which will be indicated by a bubble formation.

10. STABILITY and REACTIVITY

STABILITY: Normally stable in gaseous state.

DECOMPOSITION PRODUCTS: Nitric Oxide will react with water or moist air to form nitrogen dioxide and other oxides of nitrogen. Nitric Oxide can produce brownish Nitrogen Dioxide after reaction with oxygen. Nitrogen does not decompose, per se, but can react with other compounds in the heat of a fire.

MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: Titanium will burn in Nitrogen (the main component of this gas mixture). Lithium reacts slowly with Nitrogen at ambient temperatures. Though Nitric Oxide is an oxidizer, the concentration of this component in the product is too low for this to be a significant hazard associated with this gas mixture.

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: Contact with moisture and incompatible materials. Cylinders exposed to high temperatures or direct flame can rupture or burst.

11. TOXICOLOGICAL INFORMATION

TOXICITY DATA: The following toxicity data are available for the components of this gas mixture:

NITROGEN: There are no specific toxicity data for Nitrogen. Nitrogen is a simple asphyxiant, which acts to displace oxygen in the environment.

NITRIC OXIDE: LC50 (Inhalation-Rat) 1069 mg/m³/4 hours

LCl0 (Inhalation-Dog) 320 ppm; Behavioral: convulsions or effect on seizure threshold; Lungs, Thorax, or Respiratory: acute pulmonary edema; Blood: methemoglobinemia-carboxyhemoglobin.

LCL0 (Inhalation-Dog) 5000 ppm/25 minutes: Lungs, Thorax, or Respiratory: acute pulmonary edema; Blood: methemoglobinemia-carboxyhemoglobin.

TCL0 (Inhalation-Rat) 200 ppm/6 hours/7 days-intermittent: Lungs, Thorax, or Respiratory: acute pulmonary edema; Blood: methemoglobinemia-carboxyhemoglobin; TCL0 (Inhalation-Rat) 50 mg/m³/6 hours/7 days-intermittent: Lungs, Thorax, or Respiratory: changes in lung weight; Liver: infiltration in liver weight; Nutritional and Gross Metabolic: weight loss or decreased weight gain

TCL0 (Inhalation-Rat) 3 mg/m³/24 hours/16 days-continuous: Brain and Coverings: recordings from specific areas of CNS; Blood: methemoglobinemia-carboxyhemoglobin; Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: true cholinesterase

SUSPECTED CANCER AGENT: The components of this gas mixture are not found on the following lists: FEDERAL OSHA Z LIST, NTP, CAL/OSHA, IARC, and are not considered to be, nor suspected to be, on breasts causing cancer due to exposure (in the NTP nor NA1C), or any Powered, Air-Purifying, Full-Facepiece Respirator (gas mask) with a chin-style, front- or back-mounted canister providing protection against Nitric Oxide, or any SAR, or any Self-Contained Breathing Apparatus (SCBA) with a full facepiece.

IRRITANT OF PRODUCT: Due to the presence of Nitric Oxide this gas mixture is irritating to the eyes, and may be irritating to the skin.

SENSITIZATION OF PRODUCT: One study involving guinea pigs exposed to 4.3 ppm Nitric Oxide, 8 hours/day for 5 days enhanced an allergic reaction to ovalbumin (a known allergen).

REPRODUCTIVE TOXICITY INFORMATION: Listed below is information concerning the effects of this gas mixture and its components on the human reproductive system.

Mutagenicity: No mutagenicity effects have been described for this gas mixture. Nitric Oxide, a component of this gas mixture, has been shown to cause genetic damage in bacterial studies.

Embryotoxicity: No embryotoxic effects have been described for this gas mixture.

Teratogenicity: No teratogenicity effects have been described for this gas mixture.
11. TOXICOLOGICAL INFORMATION (Continued)

Reproductive Toxicity: No reproductive toxicity effects have been described for gas mixture. Nitric Oxide, a component of this gas mixture, has been shown to cause and fetal toxicity in animal studies.

A mutagen is a chemical which causes permanent changes to genetic material (DNA) such that the changes will propagate through generation lines. A teratogen is a chemical which causes damage to a developing fetus, but the damage does not propagate across generational lines. A reproductive toxin is any substance which interferes in any way with the reproductive process.

BIological Exposure Indices (BEIs): Currently, Biological Exposure Indices (BEIs) are not applicable for the components of this gas mixture.

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL STABILITY: The gas will be dissipated rapidly in well-ventilated areas. Complex reactions of Nitric Oxide, a component of this gas mixture, occur in the atmosphere, which contribute to air pollution. The following environmental data are applicable to the components of this gas mixture.

NITRIC OXIDE: Nitric Oxide is converted spontaneously in air to nitrogen dioxide, hence some of latter gas is invariably present whenever Nitric Oxide is found in air. At concentrations below 50 ppm, this reaction is slow. At higher concentrations this reaction may occur when only quantities of nitrogen dioxide are present. Photochemical air pollution arises from a series of atmospheric reactions. The main components are ozone, oxides of nitrogen (such as Nitric Oxide), aldehydes, peroxyacetyl nitrates, and hydrocarbons. Nitric Oxide can enter into the chemical reactions that lead to formation of photochemical smog.

NITROGEN: Water Solubility = 2.4 volumes Nitrogen/100 volumes water at 0°C. 1.6 volumes Nitrogen/100 volumes water at 20°C. Nitric Oxide is converted spontaneously in air to nitrogen dioxide, hence some of latter gas is invariably present whenever Nitric Oxide is found in air.

13. DISPOSAL CONSIDERATIONS

PREPARING WASTES FOR DISPOSAL: Waste disposal must be in accordance with appropriate Federal, State, and local regulations. Cylinders with undesired residual product may be safely vented outdoors with the proper regulator. For further information, refer to Section 16 (Other Information).

14. TRANSPORTATION INFORMATION

THIS GAS MIXTURE IS HAZARDOUS AS DEFINED BY 49 CFR 172.101 BY THE U.S. DEPARTMENT OF TRANSPORTATION.

PROPER SHIPPING NAME: Compressed gases, n.o.s. (Nitric Oxide, Nitrogen)

HAZARD CLASS NUMBER and DESCRIPTION: 2.2 (Non-Flammable Gas)

UN IDENTIFICATION NUMBER: UN 1956

PACKING GROUP: Not applicable.

DOT LABEL(S) REQUIRED: Non-Flammable Gas

NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK NUMBER (2000): 126

MARINE POLLUTANT: The components of this gas mixture are not classified by the DOT as Marine Pollutants (as defined by 49 CFR 172.101, Appendix B).

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. If transporting these cylinders in vehicles, ensure these cylinders are not exposed to extremely high temperatures (as may occur in an enclosed vehicle on a hot day). Additionally, the vehicle should be well-ventilated during transportation.

Note: DOT 39 Cylinders ship in a strong outer carton (overpack). Permitting shipping information goes on the outside of the overpack. DOT 39 Cylinders do not have transportation information on the cylinder itself.

TRANSPORT CANADA TRANSPORTATION OF DANGEROUS GOODS REGULATIONS: This gas is considered as Dangerous Goods, per regulations of Transport Canada.

PROPER SHIPPING NAME: Compressed gases, n.o.s. (Nitric Oxide, Nitrogen)

HAZARD CLASS NUMBER and DESCRIPTION: 2.2 (Non-Flammable Gas)

UN IDENTIFICATION NUMBER: UN 1956

PACKING GROUP: Not Applicable

Hazard Label: Class 2.2 (Non-Flammable Gas)

special provisions: None

EXPLOSIVE LIMIT and LIMITED QUANTITY INDEX: 0.12

ERAP INDEX: None

PASSenger Carrying ship INDEX: None

Passenger Carrying Road Vehicle or Passenger Carrying Railway Vehicle INDEX: 75

NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK NUMBER (2000): 121

Note: Shipment of compressed gas cylinders via Public Passenger Road Vehicle is a violation of Canadian law (Transport Canada Transportation of Dangerous Goods Act, 1992).

15. REGULATORY INFORMATION

ADDITIONAL U.S. REGULATIONS: U.S. SARA REPORTING REQUIREMENTS: This gas mixture is subject to the reporting requirements of Sections 302, 304, and 313 of Title III of the Superfund Amendments and Reauthorization Act, as follows:

<table>
<thead>
<tr>
<th>CHEMICAL NAME</th>
<th>SARA 302 (40 CFR 355, Appendix A)</th>
<th>SARA 304 (40 CFR Table 302.4)</th>
<th>SARA 313 (40 CFR 372.65)</th>
</tr>
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<tbody>
<tr>
<td>Nitric Oxide</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
</tbody>
</table>

U.S. SARA SECTION 302 EXTREMELY HAZARDOUS SUBSTANCE THRESHOLD PLANNING QUANTITY: Nitric Oxide = 100 lb (45.4 kg).

U.S. SARA SECTION 303 EXTREMELY HAZARDOUS SUBSTANCE REPORTABLE QUANTITY: Nitric Oxide = 10 lb (4.54 kg).

U.S. TSCA INVENTORY STATUS: The components of this gas mixture are listed on the TSCA Inventory.

U.S. CERCLA REPORTABLE QUANTITY (RQ): Nitric Oxide: 10 lb (4.54 kg).

OTHER U.S. FEDERAL REGULATIONS: Nitric Oxide is subject to the reporting requirements of CFR 29 1910.100. Nitric Oxide is listed on Table 2.1.

- Depending on specific operations involving the use of this gas mixture, the regulations of the Process Safety Management of Highly Hazardous Chemicals may be applicable (29 CFR 1910.119). Under this regulation Nitric Oxide is listed in Appendix A. The threshold quantity for Nitric Oxide under this regulation is 250 lbs.

- Nitric Oxide is subject to the reporting requirements of Section 112(r) of the Clean Air Act. The Threshold Quantity for this gas is 10,000 lb (4545 kg).

- This gas mixture does not contain any Class I or Class II ozone depleting chemicals (40 CFR part 82).

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15. REGULATORY INFORMATION (Continued)

- Nitrogen is not listed as a Regulated Substance, per 40 CFR, Part 68, of the Risk Management for Chemical Releases. Nitric Oxide is listed under this regulation in Table 1 as a Regulated Substance (Toxic Substance) in quantities of 250 lbs or greater. The basis for listing is that it is an extremely hazardous substance, with a vapor pressure of 10 mmHg or greater.

U.S. STATE REGULATORY INFORMATION: The components of this gas mixture are covered under the following specific State regulations:

Alaska - Designated Toxic and Hazardous Substances: Nitric Oxide.
California - Permissible Exposure Limits for Chemical Contaminants: Nitrogen, Nitric Oxide.
Florida - Substance List: Nitric Oxide.
Illinois - Toxic Substance List: Nitric Oxide.
Kansas - Section 202/313 List: Nitric Oxide.
Massachusetts - Substance List: Nitric Oxide.
Minnesota - List of Hazardous Substances: Nitric Oxide.
Michigan - Critical Materials Register: No.
Missouri - Employer Information/Toxic Substance List: Nitric Oxide.
New Jersey - Right to Know Hazardous Substance List: Nitrogen, Nitric Oxide.
North Dakota - List of Hazardous Chemicals, Reportable Quantities: Nitric Oxide.
Rhode Island - Hazardous Substance List: Nitrogen, Nitric Oxide.
Texas - Hazardous Substance List: Nitric Oxide.
West Virginia - Hazardous Substance List: Nitric Oxide.
Wisconsin - Toxic and Hazardous Substances: Nitric Oxide.

ADDITIONAL U.S. REGULATIONS (continued):

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65): No component of this gas mixture is on the California Proposition 65 lists.

ADDITIONAL CANADIAN REGULATIONS:

CANADIAN DSDL/NDSDL INVENTORY STATUS: The components of this gas mixture are listed on the DSL Inventory.
CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) PRIORITIES SUBSTANCES LISTS: The components of this gas mixture are not on the CEPA Priorities Substances Lists.
CANADIAN WHMIS CLASSIFICATION: This gas mixture is categorized as a Controlled Product, Hazard Classes A and D2B, as per the Controlled Product Regulations.

16. OTHER INFORMATION

INFORMATION ABOUT DOT-39 NRC (Non-Refillable Cylinder) PRODUCTS

DOT 39 cylinders ship as hazardous materials when full. Once the cylinders are relieved of pressure (empty) they are not considered hazardous material or waste. Residual gas in this type of cylinder is not an issue because toxic gas mixtures are prohibited. Calibration gas mixtures typically packaged in these cylinders are Nonflammable n.o.s., UN 1956. A small percentage of calibration gases packaged in DOT 39 cylinders are flammable or oxidizing gas mixtures.

For disposal of used DOT-39 cylinders, it is acceptable to place them in a landfill if local laws permit. Their disposal is no different than that employed with other DOT containers such as spray paint cans, household aerosols, or disposable cylinders of propane (for camping, torch etc.). When feasible, we recommend recycling for scrap metal content. CALGAZ will do this for any customer that wishes to return their DOT 39 cylinders to us prepaid. All that is required is a phone call to make arrangements so we may anticipate arrival. Scraping cylinders involves some preparation before the metal dealer may accept them. We perform this operation as a service to valued customers who want to participate.

MIXTURES: When two or more gases or liquefied gases are mixed, their hazardous properties may combine to create additional, unexpected hazards. Obtain and evaluate the safety information for each component before you produce the mixture. Consult an Industrial Hygienist or other trained person when you make your safety evaluation of the end product. Remember, gases and liquids have properties which can cause serious injury or death.

Further information about the handling of compressed gases can be found in the following pamphlets published by: Compressed Gas Association Inc. (CGA), 1725 Jefferson Davis Highway, Suite 1004, Arlington, VA 22202-4102. Telephone: (703) 412-0900.

P-1 “Safe Handling of Compressed Gases in Containers”
AV-1 “Safe Handling and Storage of Compressed Gases”
“Handbook of Compressed Gases”

PREPARED BY: CHEMICAL SAFETY ASSOCIATES, Inc.
PO Box 3519, La Mesa, CA 91944-3519
619/670-0609

Fax on Demand: 1-800/231-1386

This Material Safety Data Sheet is offered pursuant to OSHA’s Hazard Communication Standard, 29 CFR, 1910.1200. Other government regulations must be reviewed for applicability to this gas mixture. To the best of CALGAZ knowledge, the information contained herein is reliable and accurate as of this date; however, accuracy, suitability or completeness are not guaranteed and no warranties of any type, either express or implied, are provided. The information contained herein relates only to this specific product. If this gas mixture is combined with other materials, all component properties must be considered. Data may be changed from time to time. Be sure to consult the latest edition.