



## MATERIAL SAFETY DATA SHEET - CALIBRATION CHECK GAS

**PRODUCT NAME: CARBON DIOXIDE (0.005- 50%), NITROGEN (0.005- 15%), BALANCE METHANE**

MSDS NO: 399

Version: 1

Date: July, 2010

### 1. Chemical Product and Company Identification

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24-HOUR EMERGENCY NUMBER: 1-800-424-9300

PRODUCT NAME: N/A  
CHEMICAL NAME: N/A  
COMMON NAMES/ SYNONYMS: N/A  
TDG (Canada) CLASSIFICATION: 2.1  
WHIMIS CLASSIFICATION: A, B1

### 2. COMPOSITION/ INFORMATION ON INGREDIENTS

INGREDIENT	%VOLUME	PEL-OSHA	TLV-ACGIH	LD <sub>50</sub> or LC <sub>50</sub> Route/Species
Nitrogen FORMULA: N <sub>2</sub>	0.005-15%	Simple Asphyxiate	Simple Asphyxiate	Not Available
Carbon Dioxide FORMULA: CO <sub>2</sub>	0.005-50%	5000 ppm 10,000 ppm (Vacated 1989 PEL)	5000 ppm	NIOSH RELs: TWA = 5000 STEL = 30,000
Methane FORMULA: CH <sub>4</sub>	Balance	Simple Asphyxiate	Simple Asphyxiate	Not Available

### 3. HAZARDS IDENTIFICATION

#### EMERGENCY OVERVIEW

This product is a colorless, odorless, flammable gas. A significant health hazard associated with releases of this product is the potential for over-exposure to Carbon Dioxide component of this gas mixture. Inhalation of high concentrations of Carbon Dioxide can increase respiration and heart rate, possibly resulting in circulatory insufficiency (which may lead to coma and death), nausea, dizziness, headache, and mental confusion. If the concentration of Carbon Dioxide reaches 10% or more, suffocation can occur within minutes. Additionally, releases of this product may produce oxygen-deficient atmospheres (especially in confined spaces or other poorly-ventilated environments); individuals in such atmospheres may be asphyxiated. The gas poses a serious fire hazard when accidentally released. Flame or high temperature impinging on a localized area of the cylinder of this product can cause the cylinder to burst or rupture without activating the cylinder's relief devices. The gas may spread long distances; distant ignition and flashback are possible. Provide adequate fire protection during emergency response situations.

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

**INHALATION:** Due to the small size of an individual cylinder of this product, no unusual health effects from over-exposure to the product are anticipated under routine circumstances of use. It should be noted that before adverse health effects or suffocation could occur, the lower flammability limit of Methane in air may be exceeded; possibly causing an explosive atmosphere as well as an oxygen-deficient environment. A significant hazard associated with releases of this product is the potential for over-exposure to Carbon Dioxide, a component of this gas mixture. If this product is released in a small, poorly ventilated area (i.e. an enclosed or confined space), and if the concentration of Carbon Dioxide reaches 10% or more, suffocation can occur within minutes.



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**CONTACT WITH SKIN or EYES:** Due to the presence of Carbon Dioxide, exposure to high concentrations of this gas mixture may cause eye irritation with symptoms such as pain, redness, and tearing. Prolonged contact of high concentrations of Carbon Dioxide with the eyes can cause damage to the retinal ganglion cells.

**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 product, no unusual health effects from exposure to the product are anticipated under routine circumstances of use. Inhalation of high concentrations of Carbon Dioxide (a component of this gas mixture) can cause nausea, dizziness, headache, mental confusion, increased blood pressure and respiratory rate. High concentrations of this gas mixture, due to the presence of Carbon Dioxide, may cause eye irritation, and potentially eye damage. Another significant hazard associated with this gas mixture when it contains less than 19.5% oxygen is the potential for exposure to oxygen-deficient atmospheres. Symptoms of oxygen deficiency include respiratory difficulty, ringing in ears, headaches, shortness of breath, wheezing, headache, dizziness, indigestion, nausea, unconsciousness, and death. The skin of a victim of over-exposure may have a blue color.

**CHRONIC:** Chronic exposure to oxygen-deficient atmospheres (below 18% oxygen in air) may effect the heart and nervous system.

**TARGET ORGANS:** ACUTE: Respiratory system, eyes. CHRONIC: Heart, cardiovascular system, central nervous system, reproductive system.

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#### 4. FIRST AID MEASURES

**EYES:**

N/A

**SKIN:**

N/A

**INGESTION:**

Not required.

**INHALATION:**

PROMPT MEDICAL ATTENTION IS MANDATORY IN ALL CASES OF OVEREXPOSURE. RESCUE PERSONNEL SHOULD BE EQUIPPED THE SELF-CONTAINED BREATHING APPARATUS. Victims should be assisted to an uncontaminated area and inhale fresh air. Quick removal from the contaminated area is most important. If breathing has stopped administer artificial resuscitation and supplemental oxygen. Further treatment should be symptomatic and supportive.

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#### 5. FIRE-FIGHTING MEASURES

The following information is for Methane, the flammable component of this gas mixture.

**FLASH POINT:** -306°F (-187.7°C)

**AUTOIGNITION TEMPERATURE:** 1202°F (650°C)

**FLAMMABLE LIMITS (in air by volume, %):**

Lower (LEL): 5%

Upper (UEL): 15%

The following information is for the gas mixture.

**FIRE EXTINGUISHING MATERIALS:** Extinguish fires of this gas mixture by shutting-off the source of the gas. Use water spray to cool fire exposed containers, structures, and equipment.

**UNUSUAL FIRE AND EXPLOSION HAZARDS:** When involved in a fire, Methane (the flammable component of this gas mixture) will ignite and decompose to produce toxic gases including carbon monoxide and carbon dioxide.

**DANGER!** Fires impinging (direct flame) on the outside surface of unprotected cylinders of this product can be very dangerous. Exposure to fire could cause a catastrophic failure of the cylinder releasing the contents into a fireball and explosion of released gas. The resulting fire and explosion can result in severe equipment damage and personnel injury or death over a large area around the cylinder. For massive fires in large areas, use unmanned hose holder or monitor nozzles; if this is not possible, withdraw from area and allow fire to burn.

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#### 6. ACCIDENTAL RELEASE MEASURES

In terms of weight, these containers hold very little contents, such that any accidental release by puncturing etc. will be of no practical concern.

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### 7. HANDLING AND STORAGE

Suck back of water into the container must be prevented. Do not allow backfeed into the container. Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Use only in well-ventilated areas. Do not heat cylinder by any means to increase rate of product from the cylinder. Do not allow the temperature where cylinders are stored to exceed 130°F (54°C).

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### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Use adequate ventilation for extended use of gas.

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### 9. PHYSICAL AND CHEMICAL PROPERTIES

PARAMETER:	VALUE:
Physical state	: Gas
Evaporation point	: N/A
pH	: N/A
Odor and appearance	: Colorless, odorless

### 10. STABILITY AND REACTIVITY

Stable under normal conditions. Expected shelf life 48 months.

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### 11. TOXICOLOGICAL INFORMATION

No toxicological damage caused by this product.

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### 12. ECOLOGICAL INFORMATION

No ecological damage caused by this product.

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### 13. DISPOSAL INFORMATION

Do not discharge into any place where its accumulation could be dangerous. Used containers are acceptable for disposal in the normal waste stream as long as the cylinder is empty and valve removed or cylinder wall is punctured; but GASCO encourages the consumer to return cylinders.

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### 14. TRANSPORT INFORMATION

PROPER SHIPPING NAME:	Compressed gases, Flammable, n.o.s. (Methane, Carbon Dioxide, Nitrogen)		
HAZARD CLASS:	2.1		
IDENTIFICATION NUMBER:	UN1954		
SHIPPING LABEL:	FLAMMABLE GAS		FLAMMABLE GAS

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### 15. REGULATORY INFORMATION

#### ADDITIONAL U.S. REGULATIONS:

**U.S. SARA REPORTING REQUIREMENTS:** The components of this gas mixture are not subject to the reporting requirements of Sections 302,

304 and 313 of Title III of the Superfund Amendments and Reauthorization Act. This product is subject to the reporting requirements of Sections

311 and 312 of Title III of the Superfund Amendments and Reauthorization Act (40 CFR 370.21)

**U.S. SARA THRESHOLD PLANNING QUANTITY:** There are no specific Threshold Planning Quantities for the components of this gas mixture. The default Federal MSDS submission and inventory requirement filing threshold of 10,000 lb (4,540 kg) may apply, per 40 CFR 370.20.

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

**U.S. CERCLA REPORTABLE QUANTITIES (RQ):** Not applicable.

#### OTHER U.S. FEDERAL REGULATIONS:

o Methane is subject to the reporting requirements of Section 112(r) of the Clean Air Act. The Threshold Quantity for this gas is 10,000 pounds. Due to the small size of the cylinder for this mixture, this regulation should not apply.

o Depending on specific operations involving the use of this product, the regulations of the Process Safety Management of Highly Hazardous Chemicals may be applicable (29 CFR 1910.119). Under this regulation The components of this gas mixture are not listed in Appendix A, however, any process that involves a flammable gas on-site, in one location, in quantities of 10,000 lbs (4,553 kg) or greater is covered under this regulation unless it is used as a fuel. Due to the small size of the cylinder for this mixture, this regulation should not apply.

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

o Nitrogen and Carbon Dioxide are not listed as Regulated Substances, per 40 CFR, Part 68, of the Risk Management for Chemical Releases. Methane is listed under this regulation in Table 3, as a Regulated Substance (Flammable Substance), in quantities of 10,000 lbs (4,553 kg) or greater. Due to the small size of the cylinder for this mixture, this regulation should not apply.

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### 16. OTHER INFORMATION

This MSDS has been prepared in accordance with the Chemicals (Hazard Information and Packaging for Supply (Amendment) Regulation 1996. The information is based on the best knowledge of GASCO, and its advisors and is given in good faith, but we cannot guarantee its accuracy, reliability or completeness and therefore disclaim any liability for loss or damage arising out of use of this data. Since conditions of use are outside the control of the Company and its advisors we disclaim any liability for loss or damage when the product is used for other purposes than it is intended.



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**MSDS/S010/399/July, 2010**