

MATERIAL SAFETY DATA SHEETCarbon Dioxide, Methane,
Nitrogen Mixture

File No.: 1024

Date: 9/14/2011

Version: 1.1

**Carbon Dioxide, Methane, Nitrogen Mixture:
Carbon Dioxide / Methane / Nitrogen****1. Chemical Product and Company Identification****SpecAir Specialty Gases, Chemicals & Technology**
22 Albiston Way
Auburn, ME
04210

TELEPHONE NUMBER: 800-292-6218

FAX NUMBER: 207-777-6215

E-MAIL: Info@SpecAir.com

24-HOUR EMERGENCY NUMBER: 1-800-535-5053

PRODUCT NAME: Carbon Dioxide, Methane, Nitrogen Mixture

CHEMICAL NAME: Carbon Dioxide, Methane, Nitrogen

COMMON NAMES/ SYNONYMS: None

TDG (Canada) CLASSIFICATION: 2.2 ,2.1

WHIMIS CLASSIFICATION: A

2. Composition / Information on Ingredients

	% VOLUME	PEL-OSHA2	TLV-ACGIH3	LD50 OR LC50 Route/Species
Methane Formula: CH4 CAS Number; 74-82-8 RTECS#: PA1490000	1.0% to 75.0%	Simple Asphyxiant	1000 PPM	Not Available
Carbon Dioxide Formula: CO2 CAS #: 00124-38-9 RTECS #: RS2060000	1.0% to 50.0%	None Established	5000 PPM	Not Available
Nitrogen Formula: N2 CAS: 7727-37-9 RTECS#: QW9700000	30.0% to 99.9999%	None Established	None Established Simple Asphyxiant	Not Available

3. HAZARDS IDENTIFICATION**EMERGENCY OVERVIEW**

This gas mixture is a colorless, non-flammable gas which is odorless or which has a sharp odor (due to the presence of Carbon Dioxide). This product does not contain Oxygen and may cause asphyxia if released in a confined area. Maintain oxygen levels above 19.5%. Contents under pressure. Use and store below 125° F (52° C).

ROUTE OF ENTRY:

Skin Contact	Skin Absorption	Eye Contact	Inhalation	Ingestion
No	No	Yes	Yes	No

CARCINOGENICITY:

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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:

None known. Ingestion is unlikely as product is a gas at room temperature.

Inhalation Effects:

Methane and nitrogen are simple asphyxiants. Oxygen levels should be maintained at greater than 18 molar percent at normal atmospheric pressure which is equivalent to a partial pressure of 135 mm Hg. Exposure to high concentrations of this gas mixture may exclude an adequate supply of oxygen.

Effects of oxygen deficiency resulting from simple asphyxiants may include: rapid breathing, diminished mental alertness, impaired muscular coordination, faulty judgment, depression of all sensations, emotional instability, and fatigue. As asphyxiation progresses, nausea, vomiting, prostration, and loss of consciousness may result, eventually leading to convulsions, coma and death.

Oxygen deficiency during pregnancy has produced developmental abnormalities in humans and experimental animals.

NFPA Hazard Codes

Health:	1
Flammability:	0
Reactivity:	0

HMIS Hazard Codes

Health:	1
Flammability:	0
Reactivity:	0

Rating System

0=	No Hazard
1=	Slight Hazard
2=	Moderate Hazard
3=	Serious Hazard
4=	Severe Hazard

4. FIRST AID MEASURES

Eyes:

None required for gas.

Skin:

None required.

Ingestion:

None required.

Inhalation:

PROMPT MEDICAL ATTENTION IS MANDATORY IN ALL CASES OF OVEREXPOSURE TO THIS PRODUCT. RESCUE PERSONNEL SHOULD BE EQUIPPED WITH SELF-CONTAINED BREATHING APPARATUS. Conscious persons should be assisted to an uncontaminated area and be treated with supplemental oxygen. Quick removal from the contaminated area is most important. Unconscious persons should be moved to an uncontaminated area and be given artificial respiration and oxygen at the same time. The administering of the oxygen at an elevated pressure (up to 2 to 2.5 atmospheres) has shown to be beneficial as has treatment in a hyperbaric chamber. The physician should be informed that the patient has inhaled toxic quantities of Methane.

5. FIRE-FIGHTING MEASURES

Fire and Explosion Hazards:

Methane is slightly lighter than air. Gas may accumulate in areas with inadequate ventilation, possibly forming an explosive atmosphere. Methane concentrations > 14.3% in nitrogen or >2.5% in Air are flammable (CGA P-23, 1995). Use adequate ventilation to prevent gas buildup.

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Extinguishing Media:

None required. Use media appropriate for surrounding materials.

Fire Fighting Instructions:

If possible, stop the flow of gas supply. Use water spray to cool adjacent cylinders and areas well after flames are extinguished. Firefighters should wear respiratory protection (SCBA) and full turnout or Bunker gear.

6. ACCIDENTAL RELEASE MEASURES

Evacuate all personnel from affected area. Use appropriate protective equipment. If leak is in user's equipment, be certain to purge piping with inert gas prior to attempting repairs. If leak is in container or valve, contact the appropriate emergency telephone number listed in section 1 or calls your closest Maine Oxy / SpecAir location.

7. HANDLING AND STORAGE

Earth ground and bond all lines and equipment associated with flammable gas mixtures. All equipment should be non-sparking or explosion proof. Post —NO SMOKING OR OPEN FLAMES "signs in the storage or use area. Outside or detached storage preferred.

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 back flow into the cylinder.

Protect cylinders from physical damage. Store in cool, dry, well-ventilated area of non-combustible construction away from heavily trafficked areas and emergency exits. Do not allow the temperature where cylinders are stored to exceed 130°F (54°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" signs in the storage or use area.

For additional recommendations, consult Compressed Gas Association's Pamphlet P-1, P-14 and Safety Bulletin SB-2.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls:

Use local exhaust to prevent accumulation above the exposure limit. Use general mechanical ventilation in accordance with electrical codes.

Eye/Face Protection:

Safety goggles or glasses as appropriate for the job.

Skin Protection:

Protective gloves made of suitable material (i.e. butyl rubber) appropriate for the job.

Respiratory Protection:

Positive pressure air line with full-face mask and escape bottle or self-contained breathing apparatus should be available for emergency use.

Other/General Protection:

Safety shoes

9. PHYSICAL AND CHEMICAL PROPERTIES

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

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10. STABILITY AND REACTIVITY

Stability:

Stable

Incompatible Materials:

Due to the presence of Carbon Dioxide, this gas mixture may be incompatible with a variety of metals, alloys, and metal acetylides (e.g., aluminum, chromium, and zirconium). Carbon Dioxide will react with alkaline materials to form carbonates and bicarbonates. The Methane component of this gas mixture is incompatible with strong oxidizers (i.e. chlorine, bromine pentafluoride, oxygen difluoride, and nitrogen trifluoride). The Nitrogen component of this gas mixture is inert.

Hazardous Decomposition Products:

The Carbon Dioxide component will produce Carbon Monoxide and Oxygen when heated to temperatures above 3000°F (1648°C). The Methane component of this gas mixture will decompose into carbon dioxide and carbon monoxide at extremely high temperatures. The Nitrogen component of this gas mixture does not decompose, per se, but may react with other compounds in the heat of a fire.

Hazardous Polymerization:

Will not occur.

11. TOXICOLOGICAL INFORMATION

Inhalation:

N/A

Skin and Eye:

Does not cause skin or eye irritation.

Other:

Oxygen deficiency during pregnancy has produced developmental abnormalities in humans and experimental animals.

12. ECOLOGICAL INFORMATION

Product does not contain Class I or Class II ozone depleting substances. Not highly toxic. Will not bioconcentrate.

13. DISPOSAL INFORMATION

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 Maine Oxy / SpecAir for proper disposal. Non-refillable containers should be vented in a well-ventilated area then disposed of in accordance with local regulations, or returned to Maine Oxy / SpecAir.

14. TRANSPORT INFORMATION

	<u>United States DOT</u>	<u>United States DOT</u>	<u>Canada TDG</u>	<u>Canada TDG</u>
Proper Shipping Name:	Compressed Gas N.O.S. (Methane, Carbon Dioxide, Nitrogen)	Compressed Gas N.O.S. (Methane, Carbon Dioxide, Nitrogen)	Compressed Gas N.O.S. (Methane, Carbon Dioxide, Nitrogen)	Compressed Gas N.O.S. (Methane, Carbon Dioxide, Nitrogen)
Hazard Class:	2.2	2.1	2.2	2.1
Identification Number:	UN1956	UN1954	UN1956	UN1954
Shipping Label:	Non-Flammable Gas	Flammable Gas	Non-Flammable Gas	Flammable Gas

15. REGULATORY INFORMATION

Methane is listed under the accident prevention provisions of section 112(r) of the Clean Air Act (CAA) with a threshold quantity (TQ) of 10,000 pounds

SARA Title III Notification and Information:

SARA Title III – Hazard Classes:

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Acute Health hazard Sudden Release of Pressure Hazard

SARA Title II - 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.

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 SpecAir Specialty Gases 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.