Prepared to U.S. OSHA, CMA, ANSI and Canadian WHMIS Standards

1. PRODUCT AND COMPANY INFORMATION

CHEMICAL NAME; CLASS: NON-FLAMMABLE GAS MIXTURE ALIGAL #S: 11, 12, 13, 14, 14.1, 15, 18, 23, 49

Containing Carbon Dioxide (20-80%) and Nitrogen (Balance)

SYNONYMS: Not Applicable

CHEMICAL FAMILY: Not Applicable

FORMULA: Not Applicable

ALIGAL precision food grade gases provide protective atmospheres to preserve the natural flavor, color, freshness, and integrity of fresh, processed and packaged food and beverages by inhibiting spoilage due to oxidation, bacteria and mold, enhancing color and appearance, and preventing mechanical damage like crushing.

ALIGAL gases meet the standards for approved food packaging uses and are formulated in a range of gas blends for specific food applications.

PRODUCT USE:

Document Number: 10005 Food applications.



MANUFACTURED/SUPPLIED FOR:

ADDRESS:

2700 Post Oak Drive Houston, TX 77056-8229

EMERGENCY PHONE: CHEMTREC: 1-800-424-9300

BUSINESS PHONE:

General MSDS Information 1-713/896-2896 Fax on Demand: 1-800/231-1366

2. HAZARD 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). A significant hazard associated with this gas mixture is the potential for Carbon Dioxide overexposures. Inhalation of this gas mixture can cause nausea, dizziness, headache, mental confusion, increased blood pressure and respiratory rate. Severe inhalation exposures may be fatal, due to Carbon dioxide overexposure or asphyxiation. Moisture in the air could lead to the formation of carbonic acid which can be irritating to the eyes. A cylinder rupture hazard exists when this gas mixture, which is under pressure, is subject to heat or flames.

2. HAZARD IDENTIFICATION (Continued)

SYMPTOMS OF OVEREXPOSURE BY ROUTE OF EXPOSURE: The most significant route of overexposure for this gas mixture is by inhalation. The symptoms of overexposure, by route of exposure, are described in the paragraphs below.

INHALATION: One of the most significant health hazards associated with this gas mixture is the potential for overexposure to Carbon Dioxide. Carbon Dioxide is an asphyxiant and a powerful cerebral vasodilator. If the concentration of Carbon Dioxide reaches 10% or more, suffocation can occur rapidly. Inhalation of concentrations between 2 and 10% can cause nausea, dizziness, headache, mental confusion, increased blood pressure and respiratory rate. Carbon Dioxide initially stimulates respiration and then causes respiratory depression. Inhalation of low concentrations (3-5%) have no known permanent harmful effects. Symptoms in humans at various levels of concentration are as follows:

CONCENTRATION SYMPTOMS OF EXPOSURE

1%: Slight increase in breathing rate.

2%: Breathing rate increases to 50% above normal; headache; tiredness.

3%: Breathing increases to twice normal rate, becoming labored; weak narcotic effect;

impaired hearing; headache; increase in blood pressure and pulse rate.

4-5%: Breathing increases to four times normal rate; symptoms of intoxication become evident

and slight choking may be felt.

5-10%: Characteristic sharp odor noticeable. Very labored breathing, headache, visual

impairment and ringing in the ears. Judgment may be impaired, followed by loss of

consciousness.

50-100%: Unconsciousness occurs more rapidly above 10% level. Prolonged exposure to high

concentrations may eventually result in death from asphyxiation.

Releases of this gas mixture may also cause an oxygen-deficient environment. The effects associated with various levels of oxygen include disturbed muscular coordination, abnormal fatigue, disturbed respiration, nausea, vomiting, collapse, or loss of consciousness. Death may occur due to asphyxiation. It is important to note that the asphyxiating properties of Carbon Dioxide will be reached before oxygen-deficiency is a significant factor.

OTHER POTENTIAL HEALTH EFFECTS: Moisture in the air could lead to the formation of carbonic acid, which can be irritating to the eyes. Contact with the eyes can cause damage to the retinal ganglion cells.

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

ACUTE: Inhalation of this gas mixture cause nausea, dizziness, visual disturbances, shaking, headache, mental confusion, sweating, increased heartbeat, and elevated blood pressure and respiratory rate. Severe inhalation overexposures may be fatal, due the effects of Carbon Dioxide or asphyxiation. High concentrations of the gas mixture may cause eye irritation.

CHRONIC: Reversible effects on the acid-base balance in the blood, blood pressure, and circulatory system may occur after prolonged exposure to elevated Carbon Dioxide levels. Refer to Section 11 (Toxicological Information) of this MSDS for further information.

TARGET ORGANS: Respiratory system, cardiovascular system, eyes.

3. COMPOSITION and INFORMATION ON INGREDIENTS

CHEMICAL NAME	CAS#	mole %	EXPOSURE LIMITS IN AIR					
			ACGIH		OSHA			
			TLV	STEL	PEL	STEL	IDLH	OTHER
			ppm	ppm	ppm	ppm	ppm	
Carbon Dioxide	124-38-9	20-80%	5000	30,000	5000	30,000	40,000	DFG-MAK: 5000
					10,000 (Vacated 1989 PEL)	(Vacated 1989 PEL)		NIOSH REL TWA: 5000 ST: 30000 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%.					

This material is classified as hazardous under OSHA regulations in the United States and the WHMIS in Canada.

NE = Not Established C = Ceiling Limit See Section 16 for Definitions of Terms Used

NOTE: All WHMIS required information is included. It is located in appropriate sections based on the ANSI Z400.1-2004 format.

4 FIRST-AID MEASURES

RESCUERS SHOULD NOT ATTEMPT TO RETRIEVE VICTIMS OF EXPOSURE TO THIS GAS MIXTURE WITHOUT ADEQUATE PERSONAL PROTECTIVE EQUIPMENT. At a minimum, Self-Contained Breathing Apparatus may be needed.

Remove victim(s) to fresh air as quickly as possible. Only trained personnel should administer supplemental oxygen and/or cardio-pulmonary resuscitation if necessary.

Victim(s) must be taken for medical attention. Rescuers should be taken for medical attention if necessary. Take copy of label and MSDS to physician or other health professional with victim(s).

5. FIRE-FIGHTING MEASURES

FLASH POINT: Not applicable.

AUTOIGNITION TEMPERATURE: Not applicable.

FLAMMABLE LIMITS (in air by volume, %):

Lower (LEL): Not applicable. Upper (UEL): Not applicable.

FIRE EXTINGUISHING MATERIALS: Use extinguishing media appropriate for surrounding fire.

UNUSUAL FIRE AND EXPLOSION HAZARDS: This gas mixture does not burn; however, containers, when involved in fire, may rupture or burst in the heat of the fire.

<u>Explosion Sensitivity to Mechanical Impact</u>: Not sensitive. Explosion Sensitivity to Static Discharge: Not sensitive.

SPECIAL FIRE-FIGHTING PROCEDURES: Structural fire-fighters must wear Self-Contained Breathing Apparatus and full protective equipment. Evacuation may be necessary. Refer to the North American Emergency Response Guidebook (Guide #126) for additional information.

6. ACCIDENTAL RELEASE MEASURES

LEAK RESPONSE: Evacuate immediate area. Uncontrolled releases should be responded to by trained personnel using pre-planned procedures. Proper protective equipment should be used. In case of a gas release, clear the affected area, protect people, and respond with trained personnel.

Minimum Personal Protective Equipment should be **Level B: Self-Contained Breathing Apparatus.** Locate and seal the source of the leaking gas. Allow the gas to dissipate. Monitor the surrounding area for the level of Carbon Dioxide. The levels of Carbon Dioxide must be below those listed in Section 2 (Composition and Information on Ingredients) and the atmosphere must have at least 19.5 percent oxygen before personnel can be allowed in the area without Self-Contained Breathing Apparatus. Attempt to close the main source valve prior to entering the area. If this does not stop the release (or if it is not possible to reach the valve), allow the gas to release in place or remove it to a safe area, away from sources of ignition, and allow the gas to be released there.

If gas is leaking incidentally from the cylinder or its valve, contact your supplier.

7. HANDLING AND STORAGE

WORK PRACTICES AND HYGIENE PRACTICES: Be aware of any signs of overexposure (see Section 3, Hazard Identification); exposures this gas mixture could occur without any significant warning symptoms (due to Carbon Dioxide overexposures or oxygen-deficiency).

STORAGE AND HANDLING PRACTICES: Cylinders should be stored upright (with valve-protection cap in place) and firmly secured to prevent falling or being knocked over. Cylinders can be stored in the open, but in such cases, should be protected against extremes of weather and from the dampness of the ground to prevent rusting. Cylinders should be stored in dry, well-ventilated areas away from sources of heat, ignition, and direct sunlight. Keep storage area clear of materials that can burn.

Do not allow area where cylinders are stored to exceed 52°C (125°F). Store containers away from heavily trafficked areas and emergency exits. Store away from process and gas production areas, elevators, building and room exits, or main aisles leading to exits. Protect cylinders against physical damage. Keep the smallest amount on-site as is necessary. Full and empty cylinders should be segregated. Use a first-in, first-out inventory system to prevent full containers from being stored for long periods of time. Use a check valve in the discharge line to prevent hazardous backflow. Never tamper with pressure relief devices in valves and cylinders.

SPECIAL PRECAUTIONS FOR HANDLING GAS CYLINDERS: Compressed gases can present significant safety hazards. The following rules are applicable to work situations in which cylinders are being used:

Before Use: Move cylinders with a suitable hand-truck. Do not drag, slide or roll cylinders. Do not drop cylinders or permit them to strike each other. Secure cylinders firmly. Leave the valve protection cap (where provided) in place until cylinder is ready for use.

During Use: Use designated CGA fittings and other support equipment. Do not use adapters. Use piping and equipment adequately designed to withstand pressures to be encountered. Do not heat cylinder by any means to increase the discharge rate of the gas mixture from the cylinder. Do not use oils or grease on gas-handling fittings or equipment. Leak check system with leak detection solution, never with flame. Immediately contact the supplier if there are any difficulties associated with operating cylinder valve. Never insert an object (e.g., wrench, screwdriver, pry bar, etc.) into valve cap openings. Doing so may damage the valve, causing a leak to occur. Use an adjustable strap wrench to remove overly tight or rusted caps. Never strike an arc on a compressed gas cylinder or make a cylinder part of an electric circuit.

After Use: Close main cylinder valve. Valves should be closed tightly. Replace valve protection cap. Mark empty cylinders "EMPTY".

NOTE: Use only DOT or ASME code cylinders designed for compressed gas storage. Close valve after each use and when empty. Cylinders must not be recharged except by or with the consent of owner.

PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT: Follow practices indicated in Section 6 (Accidental Release Measures). Make certain application equipment is locked and tagged-out safely. Purge gas handling equipment with inert gas before attempting repairs. Always use this gas mixture in areas where adequate ventilation is provided.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

VENTILATION AND ENGINEERING CONTROLS: Use with adequate ventilation. Local exhaust ventilation is preferred, because it prevents chemical dispersion into the work place by eliminating it at its source. If appropriate, install automatic monitoring equipment to detect the levels of Carbon Dioxide.

RESPIRATORY PROTECTION: Maintain Carbon Dioxide levels below exposure levels listed in Section 2 (Composition and Information on Ingredients) in the workplace. Use supplied air respiratory protection during emergency response to a release of this gas mixture. If respiratory protection is required, follow the requirements of the U.S. Federal OSHA Respiratory Protection Standard (29 CFR 1910.134), equivalent U.S. State standards, or the applicable regulations of Canada and its Provinces. The following NIOSH recommendations for Carbon Dioxide concentrations in air are provided for additional guidance in respirator selection:

CONCENTRATION RESPIRATORY EQUIPMENT

UP TO 40,000 ppm: Supplied Air Respirator (SAR); or full-facepiece Self-Contained Breathing Apparatus

(SCBA).

EMERGENCY OR PLANNED ENTRY INTO UNKNOWN CONCENTRATIONS OR IDLH CONDITIONS: Positive

pressure, full-facepiece SCBA; or positive pressure, full-facepiece SAR with an auxiliary

positive pressure SCBA.

ESCAPE: Escape-type SCBA.

NOTE: The IDLH concentration for Carbon Dioxide is 40,000 ppm.

NON-FLAMMABLE GAS MIXTURE (10005) MSDS

8. EXPOSURE CONTROLS - PERSONAL PROTECTION (Continued)

EYE PROTECTION: Safety glasses.

HAND PROTECTION: Wear gloves when handling cylinders of this gas mixture. Otherwise, wear glove protection appropriate to the specific operation for which this gas mixture is used.

BODY PROTECTION: Use body protection appropriate for task. Safety shoes are recommended when handling cylinders.

9. PHYSICAL and CHEMICAL PROPERTIES

The following information is for Carbon Dioxide, a main component of this gas mixture.

GAS DENSITY @ 21.1°C (70°F) and 1 atm: 0.1144 lb/ft³ (1.833 kg/m³) FREEZING/MELTING POINT: (sublimation temperature) -78.5°C (-109.3°F)

LIQUID DENSITY @ 21.1°C (70°F) and 838 psig (5778 kPa): 47.35 lb/ft³ (761.3 kg/m³)

TRIPLE POINT: -55.6°C (-69.9°F) @ 60.4 psig (416 kPa)

SPECIFIC GRAVITY (air = 1) @ 21.1°C (70°F): 1.522

ODOR THRESHOLD: Not available.

EVAPORATION RATE (nBuAc = 1): Not applicable.

SPECIFIC VOLUME (ft³/lb): 8.76

VAPOR PRESSURE @ 21.1°C (70°F) psig: 838 psig (5778 kPa) SOLUBILITY IN WATER vol/vol 20°C (68°F) and 1 atm: 0.90 COEFFICIENT WATER/OIL DISTRIBUTION: Not applicable.

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

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

BOILING POINT: -195.8°C (-320.4°F)

FREEZING/MELTING POINT (@ 10 psig) -210°C (-345.8°F)

SPECIFIC GRAVITY (air = 1) @ 21.1°C (70°F): 0.906 pH: Not applicable.

SOLUBILITY IN WATER vol/vol at °0 C (32°F) and 1 atm: 0.023 MOLECULAR WEIGHT: 28.01

EVAPORATION RATE (nBuAc = 1): Not applicable. **EXPANSION RATIO**: Not applicable. **ODOR THRESHOLD**: Not applicable. Odorless. **EXPANSION RATIO**: Not applicable. **SPECIFIC VOLUME (ft³/lb)**: 13.8

VAPOR PRESSURE @ 21.1°C (70°F) psig: Not applicable. COEFFICIENT WATER/OIL DISTRIBUTION: Not applicable.

The following information is for this gas mixture.

APPEARANCE AND COLOR: Colorless gas mixture, which may have a sharp odor or be odorless (depending on concentration of Carbon Dioxide.

HOW TO DETECT THIS SUBSTANCE (warning properties): The odor may be a distinct warning property associated with this gas mixture. Additionally, 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.

DECOMPOSITION PRODUCTS: Carbon Dioxide will produce Carbon Monoxide and Oxygen when heated to temperatures above 3000°F (1648°C).

MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: 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. Nitrogen is relatively inert, reacting with only a few substances (e.g. titanium, lithium) under extreme conditions.

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: Cylinders exposed to high temperatures or direct flame can rupture or burst.

NON-FLAMMABLE GAS MIXTURE (10005) MSDS EFFECTIVE DATE: AUGUST 31, 2005

11. TOXICOLOGICAL INFORMATION

TOXICITY DATA: The following toxicology data are available for the components of this gas mixture present in concentrations greater than or equal to 1 mole %.

CARBON DIOXIDE:

LCLo (inhalation, human) = 9 pph/5 minutes.

LCLo (inhalation, mammal) = 90000 ppm/5 minutes.

TCLo (inhalation, rat) = 6 pph/24 hours; reproductive and teratogenic effects.

NITROGEN: In this gas mixture, Nitrogen is a simple asphyxiant (SA), which acts to displace oxygen in the environment.

SUSPECTED CANCER AGENT: The components of this gas mixture are not found on the following lists: U.S. FEDERAL OSHA Z LIST, NTP, CAL/OSHA, and IARC and therefore are neither considered to be nor suspected to be cancer-causing agents by these agencies.

IRRITANCY OF PRODUCT: Due to the formation of carbonic acid, this gas mixture can be slightly irritating to contaminated eyes. Contact with rapidly expanding gases may cause frostbite to exposed tissue.

SENSITIZATION OF PRODUCT: The components of this gas mixture are not known to cause sensitization in humans.

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

Mutagenicity: This gas mixture is not expected to cause mutagenic effects in humans.

Embryotoxicity: This gas mixture is not expected to cause embryotoxic effects in humans.

<u>Teratogenicity</u>: This gas mixture is not expected to cause teratogenic effects in humans. Clinical studies involving test animals exposed to high concentrations of Carbon Dioxide indicate teratogenic effects (e.g., cardiac and skeletal malformations, stillbirths).

REPRODUCTIVE TOXICITY INFORMATION (continued):

<u>Reproductive Toxicity</u>: This gas mixture is not expected to cause adverse reproductive effects in humans. Studies involving test animals exposed to high concentrations of Carbon Dioxide show effects (e.g. changes in testes).

A <u>mutagen</u> is a chemical which causes permanent changes to genetic material (DNA) such that the changes will propagate through generational lines. An <u>embryotoxin</u> is a chemical which causes damage to a developing embryo (i.e. within the first eight weeks of pregnancy in humans), but the damage does not propagate across generational lines. A <u>teratogen</u> is a chemical which causes damage to a developing fetus, but the damage does not propagate across generational lines. A <u>reproductive toxin</u> is any substance which interferes in any way with the reproductive process.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Pre-existing respiratory conditions and disorders involving the "Target Organs" (see Section 3, Hazard Identification) and cardio-vascular conditions may be aggravated by overexposure to this product.

RECOMMENDATIONS TO PHYSICIANS: Administer oxygen if necessary. Treat symptoms.

ACGIH BIOLOGICAL EXPOSURE INDICES (BEIs): ACGIH Biological Exposure Indices (BEIs) are not applicable to the components of this gas mixture.

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL STABILITY: The gas will be dissipated rapidly in well-ventilated areas. The following environmental data are applicable to the components of this gas mixture.

CARBON DIOXIDE: Food chain concentration potential: None. Biological Oxygen Demand: None

NITROGEN: Water Solubility = 2.4 volumes Nitrogen/100 volumes water at 0°C and 1.6 volumes Nitrogen/100 volumes water at 20°C.

EFFECT OF MATERIAL ON PLANTS or ANIMALS: No evidence is currently available on this gas mixture's effects on plant and animal life.

EFFECT OF CHEMICAL ON AQUATIC LIFE: No evidence is currently available on the effects of this gas mixture on aquatic life. The following aquatic toxicity data are available for the components of this product.

CARBON DIOXIDE:

Aquatic toxicity: 100-200 mg/l/no time specified/various organisms/fresh water.

Waterfowl toxicity: Inhalation 5-8%, no effect.

13. DISPOSAL CONSIDERATIONS

PREPARING WASTES FOR DISPOSAL: Waste disposal must be in accordance with appropriate U.S. Federal, State, and local regulations, or those of Canada and its Provinces. Return cylinders with any residual gas mixture to Air Liquide. Do not dispose of locally.

For emergency disposal, secure the cylinder and slowly discharge the gas to the atmosphere in a well-ventilated area or outdoors.

NON-FLAMMABLE GAS MIXTURE (10005) MSDS EFFECTIVE DATE: AUGUST 31, 2005

14. TRANSPORTATION INFORMATION

THIS MATERIAL IS HAZARDOUS, PER 49 CFR 172.101 (THE U.S. DEPARTMENT OF TRANSPORTATION).

PROPER SHIPPING NAME: Compressed gases, n.o.s. (Nitrogen, Carbon Dioxide)

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

UN IDENTIFICATION NUMBER: UN 1956 PACKING GROUP: Not applicable. Non-Flammable Gas DOT LABEL(S) REQUIRED:

NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK NUMBER (1996): 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).

TRANSPORT CANADA TRANSPORTATION OF DANGEROUS GOODS REGULATIONS: THIS GAS MIXTURE IS CONSIDERED AS DANGEROUS GOODS. Use the above information for the preparation of Canadian Shipments.

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.

U.S. SARA THRESHOLD PLANNING QUANTITY: Not applicable.

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

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

OTHER U.S. FEDERAL REGULATIONS:

- Carbon Dioxide is subject to the reporting requirements of CFR 29 1910.1000.
- This gas mixture does not contain any Class I or Class II ozone depleting chemicals (40 CFR part 82).
- No component of this gas mixture is subject to the reporting requirements of Section 112(r) of the Clean Air Act.
- Carbon Dioxide and Nitrogen are not listed as Regulated Substances, per 40 CFR, Part 68, of the Risk Management for Chemical Releases.
- The regulations of the Process Safety Management of Highly Hazardous Chemicals (29 CFR 1910.119) are not applicable to this gas mixture.

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65): components of this product are not on the Proposition 65 lists.

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: Carbon Dioxide.

California - Permissible Exposure Limits for Chemical Contaminants: Carbon Dioxide, Nitrogen.

Florida - Substance List: Carbon Dioxide. Illinois - Toxic Substance List: Carbon Dioxide

Kansas - Section 302/313 List: No. Massachusetts - Substance List: Carbon Michigan - Critical Material Register: No. Minnesota - List of Hazardous Substances: Carbon Dioxide.

Missouri - Employer Information/Toxic Substance List: Carbon Dioxide.

New Jersey - Right to Know Hazardous Substance List: Carbon Dioxide, Nitrogen. North Dakota - List of Hazardous Chemicals, Reportable Quantities: No.

Pennsylvania - Hazardous Substance List: Carbon Dioxide, Nitrogen.

Rhode Island - Hazardous Substance List: Carbon Dioxide, Nitrogen.

Texas - Hazardous Substance List: No. West Virginia - Hazardous Substance List: Carbon Dioxide.

Wisconsin - Toxic and Hazardous Substances: Carbon Dioxide.

EFFECTIVE DATE: AUGUST 31, 2005

ADDITIONAL CANADIAN REGULATIONS:

CANADIAN DSL/NDSL INVENTORY STATUS: The components of this mixture are listed on the Canadian DSL Inventory.

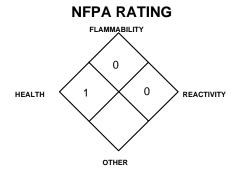
OTHER CANADIAN REGULATIONS: Not applicable.

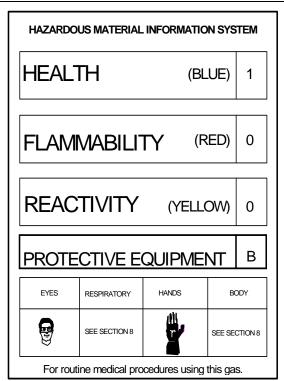
CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) PRIORITIES SUBSTANCES LISTS: The components of this product are not on the CEPA Priorities Substances Lists.

CANADIAN WHMIS SYMBOLS: This gas mixture is categorized as a Controlled Product, Hazard Class A.

NON-FLAMMABLE GAS MIXTURE (10005) MSDS

16. OTHER INFORMATION





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 gas mixtures can be found in the following pamphlets published by: Compressed Gas Association Inc. (CGA), 4221 Walney Road 5th floor, Chantilly, VA 20151-2923. Telephone: (703) 788-2700.

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. 9163 Chesapeake Drive, San Diego, CA 92123-1002 619/565-0302

Fax on Demand: 1-800/231-1366



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 product. To the best of Air Liquide's 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 product 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.

NON-FLAMMABLE GAS MIXTURE (10005) MSDS

EFFECTIVE DATE: AUGUST 31, 2005