PRODUCT INFORMATION

PRODUCT: Methane, Oxygen in Nitrogen

TRADE NAME: None

CHEMICAL NAME: Methane, Oxygen in Nitrogen

SYNONYMS: None

FORMULA: CH$_4$, O$_2$ in N$_2$

CHEMICAL FAMILY: Gas Mixture

SUPPLIER'S NAME: MEGS Inc.

SUPPLIER'S ADDRESS: 2675 De Miniac
Ville St-Laurent, Qc, H4S 1E5

EMERGENCY PHONE NUMBER: (514) 956-7503

MOLECULAR WEIGHT: 27.42 - 28.92

PRODUCT USE: Various

PRODUCT IDENTIFICATION NUMBER: UN 1956, Compressed gases, n.o.s.

HAZARDOUS INGREDIENTS

<table>
<thead>
<tr>
<th>CHEMICAL ID</th>
<th>CONCENTRATION</th>
<th>CAS #</th>
<th>LD(50)</th>
<th>LC(50)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methane</td>
<td>0 - 4.9%</td>
<td>74-82-8</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Oxygen</td>
<td>0 - 22.9% Bal</td>
<td>7782-44-7</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Nitrogen</td>
<td>Bal</td>
<td>7727-37-9</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

PHYSICAL DATA

PHYSICAL STATE: Gas

APPEARANCE: Colorless

ODOR: Odorless

ODOR THRESHOLD: Not applicable

SPECIFIC GRAVITY (H$_2$O = 1): See Vapor Density (air = 1)

VAPOR PRESSURE: Not applicable (gas)
VAPOR DENSITY (air = 1): 0.946 - 1.00

EVAPORATION RATE: Not applicable (gas)

BOILING POINT: Gas mixture

FREEZING POINT: Gas mixture

pH: Not applicable (gas)

GAS DENSITY: 1.16 - 1.22 kg/m³ @ 15 °C, 101.3 kPa

COEFFICIENT OF WATER/OIL @ 15 °C, Bunsen Coefficient, DISTRIBUTION: CH₄ = 0.037, O₂ = 0.0342, N₂ = 0.0170

FIRE OR EXPLOSION HAZARD

CONDITIONS OF FLAMMABILITY: Nonflammable mixture

MEANS OF EXTINCTION: The presence of oxygen in this mixture may accelerate the combustion of flammable material, noting, however, that the level is within the range and poses no greater risk than atmospheric oxygen. Copious quantities of water for fires with oxygen as the oxidizer.

FLASHPOINT AND METHOD OF DETERMINATION: Nonflammable mixture

UPPER EXPLOSION LIMIT (% BY VOL): Nonflammable mixture

LOWER EXPLOSION LIMIT (% BY VOL): Nonflammable mixture

AUTO-IGNITION TEMPERATURE: Nonflammable mixture

FLAMMABILITY CLASSIFICATION: Nonflammable mixture

HAZARDOUS COMBUSTION PRODUCTS: Nonflammable mixture

EXPLOSION DATA: Nonflammable mixture

SENSITIVITY TO STATIC DISCHARGE: None

REACTIVITY DATA

CHEMICAL STABILITY: Stable as to reactivity and decomposition

INCOMPATIBLE MATERIALS: As a precaution, all flammable materials, grease and oils.

CONDITIONS OF REACTIVITY: Oxygen is reactive under various conditions, temperature and pressure. All elements, with the
exception of the inert gases react directly with oxygen to form oxides. Nitrogen is chemically inactive at low and ambient temperatures.

HAZARDOUS DECOMPOSITION: None

PRODUCTS:

TOXICOLOGICAL PROPERTIES

ROUTES OF ENTRY:

SKIN CONTACT: None

SKIN ABSORPTION: None

EYE: None

INHALATION: High concentrations of a mixture containing less than 18% oxygen by volume, so as to exclude an adequate supply of oxygen to the lungs cause dizziness, labored breathing and eventual unconsciousness, and death.

INGESTION: None

ACUTE OVEREXPOSURE EFFECTS: Permutations of this mixture is nontoxic but the liberation of a large amount in a confined area could displace the amount of oxygen in air necessary to support life.

CHRONIC OVEREXPOSURE EFFECTS: None

EXPOSURE LIMITS: 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 (ACGIH 1995 - 1996).

IRRITANCY OF PRODUCT: None

SENSITIZATION TO MATERIAL: None

CARCINOGENICITY, REPRODUCTIVE EFFECTS: None

TERATOGENICITY, MUTAGENICITY: None

TOXICOLOGICALLY SYNERGISTIC PRODUCTS: None

NOTE: NITROGEN AND METHANE HAVE NO IRRITATING OR TOXIC AFFECTS.
PREVENTIVE MEASURES

PERSONAL PROTECTIVE EQUIPMENT: Safety goggles or glasses. Safety shoes. Gloves of any material.

SPECIFIC ENGINEERING CONTROLS: This mixture is noncorrosive and may be used with any common structural material.

Special Note: It should be recognized that the ignition temperature of metals and nonmetals in pure oxygen service decreases with increasing oxygen pressure. For additional information refer to Liquid Air's Gas Encyclopedia.

LEAK AND SPILL PROCEDURES: EVACUATE ALL PERSONNEL FROM AFFECTED AREA.
Use appropriate protective equipment. If leak is in user's equipment, be certain to purge piping with an inert gas prior to attempting repairs. If leak is on container or container valve, contact the closest MEGS location.

WASTE DISPOSAL: Do not attempt to dispose of waste or unused quantities. Return in the shipping container properly labeled, with any valve outlet plugs or caps secured and valve protection cap in place to MEGS for proper disposal. For emergency disposal, contact the closest MEGS location.

HANDLING PROCEDURES AND EQUIPMENT: USE ONLY IN WELL-VENTILATED AREAS.
Valve protection caps must remain in place unless container is secured with valve outlet piped to the point of use. Do not drag, slide or roll cylinders. Use a suitable hand truck for cylinder movement. Use a pressure reducing regulator when connecting to lower pressure 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. Close valve after each use and when empty.

STORAGE REQUIREMENTS: 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 52°C. Cylinders must 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 being stored for excessive periods of time.

TDG CLASSIFICATION: 2.2

WHMIS CLASSIFICATION: A
**SPECIAL SHIPPING INFORMATION:** Always secure cylinders in an upright position before transporting them. NEVER transport cylinders in trunks of vehicles, enclosed vans, truck cabs or in passenger compartments. Transport cylinders secured in open flatbed or in open pick-up type vehicles.

**FIRST AID MEASURES**

**SPECIFIC FIRST AID PROCEDURES:** PROMPT MEDICAL ATTENTION IS MANDATORY IN ALL CASES OF OVEREXPOSURE TO THIS MIXTURE. RESCUE PERSONNEL SHOULD BE EQUIPPED WITH SELF-CONTAINED BREATHING APPARATUS.

**INHALATION:** Conscious persons should be assisted to an uncontaminated area and inhale fresh air. Quick removal from the contaminated area is most important. Unconscious persons should be moved to an uncontaminated area, given assisted resuscitation and supplemental oxygen. Further treatment should be symptomatic and supportive.

**EYE CONTACT:** Not applicable

**SKIN CONTACT:** Not applicable

**PREPARATION INFORMATION**

**PREPARED BY:** Safety Department

**DATE PREPARED:** 12/19/1999

**LAST REVISION DATE:** 05/21/2002

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