



## Material Safety Data Sheet (Canada) Liquefied Natural Gas

### Section 1 – Material Identification and Use

**Material Name:** LIQUEFIED NATURAL GAS (CRYOGENIC LIQUID)  
**Use:** Vehicle Fuel Gas  
**WHMIS Classification:** Class A; Class B, Div. 1  
**TDG:** UN: 1972 **Class:** 2.1 **Packing Group:** N.Av.  
**Shipping Name:** LIQUEFIED NATURAL GAS (CRYOGENIC LIQUID)  
**Manufacturer/Supplier:** ENCANNA CORPORATION  
500 Centre Street SE  
CALGARY, ALBERTA, T2P 2S5  
**Emergency Telephone:** CANUTEC: 1-613-996-6666  
**Chemical Family:** Liquefied aliphatic paraffinic hydrocarbon

### Section 2 – Hazardous Ingredients of Materials

| Hazardous Ingredients | Approximate Concentrations % | C.A.S. Nos. | LD50/LC50 Specify Species & Route | Exposure Limits    |
|-----------------------|------------------------------|-------------|-----------------------------------|--------------------|
| Methane               | >97%                         | 74-82-8     | N.Av.                             | 1000 ppm (BC)      |
| Ethane                | 2-3%                         | 74-84-0     | N.Av.                             | 1000 ppm (AB & BC) |

All exposure levels are 8-hour time-weighted exposure limits unless otherwise indicated.

### Section 3 – Physical Data for Material

**Physical State:** Liquefied Gas  
**Specific Gravity:** 0.422 to 0.546  
**Vapour Density (air=1):** 0.55 to 1.1  
**Percent Volatiles, by volume:** 100  
**pH:** N.App.  
**Coefficient of Water/Oil Distribution:** <0.1  
(N.AV. = not available N.App. = not applicable)  
**Vapour Pressure (mmHg):** N.App.  
**Odour Threshold (ppm):** N.Av.  
**Evaporation Rate:** N.Av.  
**Boiling Pt. (deg.C):** -88.15  
**Freezing Pt. (deg.C):** -172.15  
**Odour & Appearance:** colourless, odourless or mercaptan odour

### Section 4 – Fire and Explosion

**Flammability:** Yes **Conditions:** Material may ignite at normal temperatures.  
**Means of Extinction:** Foam, CO<sub>2</sub>, dry chemical. Explosive accumulations can build up in areas of poor ventilation.  
**Special Procedures:** Use water spray to cool fire-exposed containers, and to disperse gas if leak has not ignited. Do not direct water at spill or source of leak. If safe to do so, cut off fuel and allow flame to burn out. If flames are accidentally extinguished, explosive re-ignition may occur.  
**Flash Point (deg.C):** -187.78 to -135.15  
**Upper Explosive Limit (% by vol.):** 15.0  
**Lower Explosive Limit (% by vol.):** 3.0  
**Auto-Ignition Temp. (deg.C):** 530  
**Hazardous Combustion Products:** Carbon monoxide and carbon dioxide.  
**Sensitivity to Impact:** No  
**Sensitivity to Static Discharge:** Yes, may ignite  
**TDG Flammability Classification:** 2.1

### Section 5 – Reactivity Data

**Chemical Stability:** Yes **Conditions:** N.App.  
**Incompatibility:** Yes **Substances:** Chlorine and other strong oxidizing agents.  
**Reactivity:** Yes **Conditions:** Heat, strong sunlight  
**Hazardous Decomposition Products:** Carbon dioxide and carbon monoxide



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### Section 6 – Toxicological Properties of Product

**Routes of Entry:**

**Skin Absorption:** Yes

**Skin Contact:** Yes (liquid)

**Eye Contact:** Yes

**Inhalation: Acute:** Yes

**Chronic:** No

**Ingestion:** No

**Effects of Acute Exposure:** Inhalation can cause headache, disorientation, dizziness, drowsiness and possibly unconsciousness at concentrations that cause oxygen deficiency and asphyxiation. Rapidly expanding gas or vaporized liquid may cause frostbite to skin and eyes.

**Effects of Chronic Exposure:** N.Av.

**Sensitization to Product:** No

**Irritancy:** N.Av.

**Synergistic Materials:** None reported

**Carcinogenicity:** N.Av.

**Reproductive Effects:** N.Av.

**Teratogenicity:** N.Av.

**Mutagenicity:** N.Av.

### Section 7 – Preventative Measures

**Personal Protective Equipment:** Use a NIOSH approved positive pressure self-contained breathing apparatus or supplied air breathing apparatus when concentrations may exceed exposure limits. Use approved gas detectors.

**Gloves:** Insulated gloves (e.g.: cryogenic)

**Eye:** Splash goggles and face shield or equivalent.

**Footwear:** Covered footwear such as steel-toed boots.

**Clothing:** Fire retardant garments that meet NFPA 2112. For situations or activities involving elevated risk of fluid contact, wear an insulated apron or smock.

**Respiratory Protection:** SCBA or SABA

**Engineering Controls:** Use only in well ventilated areas. Mechanical ventilation recommended in confined areas. Equipment must be explosion proof.

**Leaks & Spills:** If safe to do so, stop liquid flow. Remove all ignition sources. Provide explosion-proof clearing ventilation if possible. Prevent from entering confined spaces. Use personal protective equipment.

**Waste Disposal:** Controlled burning or venting in accordance with regulatory requirements.

**Handling Procedures & Equipment:** Avoid contact with liquid or liquid cooled equipment. Avoid inhalation. Bond and ground all transfers. Avoid sparking conditions.

**Storage Requirements:** Store in a cool, dry, well ventilated area away from heat, strong sunlight, and ignition sources.

**Special Shipping Information:** N.Av.

### Section 8 – First aid Measures

**Skin:** If freeze burn occurs, gently bathe affected area in warm water (38 – 43 deg. C). Do not rub. Get medical attention. Seek immediate medical attention if blistering, tissue freezing or frost bite has occurred.

**Eye:** Immediately flush with large amounts of luke warm water for 15 minutes, lifting upper and lower lids at intervals. Seek medical attention if irritation persists.

**Inhalation:** Remove to fresh air. Give oxygen, artificial respiration, or CPR if needed. Seek medical attention.

**Ingestion:** Ingestion of liquid causes freeze burns to mouth, throat, esophagus and lungs. Get immediate medical attention.

### Section 9 – Preparation Date of MSDS

Prepared By: Encana Environment, Health and Safety (EH&S)

Phone Number: (403) 645-2000 Preparation Date: July 1, 2014

Expiry Date: July1, 2017