



# Material Safety Data Sheet for Natural Gas

Prepared September 2007

## Section 1 – Product Information

**Material Name/Identifier:** Natural Gas

**Supplier:** Enbridge companies:

**Ontario:** Enbridge Gas Distribution Inc.  
500 Consumers Road  
North York, ON M2J 1P8  
**Emergency: 1-866-763-5427**

Enbridge Gas Storage (Tecumseh)  
3595 Tecumseh Rd  
Mooretown, ON N0N 1M0  
**Emergency : 1-800-255-1431**

**Quebec:** Gazifère Inc.  
706, boulevard Gréber  
Gatineau PQ J8V 3P8  
**Emergency: 1-866-771-8321**

**New Brunswick:**  
Enbridge Gas New Brunswick Inc.  
440 Wilsey Rd., Suite 101  
Fredericton, NB E3B 7G5  
**Emergency: 1-800-994-2762**

**Manufacturer:**  
Natural gas is a naturally occurring product.

**Chemical Name:** Methane

**Chemical Family:** Simple hydrocarbons

**Product Use:**  
Primarily a heating fuel for residential, commercial and industrial purposes.

**Trade Name and Synonyms:** Natural Gas

**Regulatory Classification:**

**WHMIS:**

**Class A - Compressed Gas**

**Class B - Division 1 - Flammable Gas**

**TDG:**

Shipping Name - Natural Gas,  
compressed

(with high methane content)

UN/PIN 1971

Class 2.1

## Section 2 – Hazardous Ingredients

**Hazardous Ingredients:**

Primarily methane gas with other fossil fuels such as ethane, propane, butane and pentane.

**Approximate Concentration %:**

95% methane, 3% other fossil fuels,  
2% nitrogen

**C.A.S. Number:** 8006-14-2

**Exposure Limits:**

Natural gas is not toxic, however; if gas escapes in a confined area, it may displace the air and its oxygen from the space. Lack of oxygen will asphyxiate anyone remaining in that gas filled space.

**LD50/LC50 Specify Species and Route:**

Due to oxygen displacement

## Section 3 – Physical Data

**Physical State:** Gas

**Odour and Appearance:**

Natural gas in its pure state is colourless and odourless. An odourant, consisting of Mercaptan is added before natural gas enters a gas utility's distribution system. The odour is quite offensive like rotten eggs.

**Odour Threshold (ppm):**

Less than 10,000 ppm in air

**Specific Gravity:** Not applicable

**Vapour Pressure:** Not applicable

**Vapour Density (Air = 1):** 0.56 to 0.59

**Evaporation Rate:** Not applicable

**Boiling Point (°C):** - 161.5°C (as methane)

**Freezing Point (°C):** - 182.6°C (as methane)

**pH:** Not applicable

**Coefficient of Water/Oil Distribution:**

Not applicable

## Section 4 – Fire and Explosion Hazards

**Flammable - If Yes, under which conditions?**

Yes. Extreme fire hazard when mixed with appropriate concentrations of air or oxygen in the presence of an ignition source.

**Means of Extinction:**

Dry chemical, Carbon Dioxide, Halon

**Caution:** If a natural gas fire is extinguished and the flow of gas is not stopped, a highly explosive natural gas-air mixture can accumulate, creating a potentially dangerous hazard if a new source of ignition is introduced.

**Flash Point (°C) and Method:** Not applicable

**Upper Explosive Limit:**

15% gas in air (approximately)

**Lower Explosive Limit:**

4% gas in air (approximately)

**Ignition Temperature (°C):**

538°C (1,000°F) (approximately)

**Hazardous Combustion Products:**

Carbon Monoxide, Carbon Dioxide, Nitrogen Oxides, Sulfur Dioxide, Aldehydes

**Explosion Data/Sensitivity:** Not applicable

**Sensitivity to Static Discharge:** Yes

## Section 5 – Reactivity Data

**Chemical Stability:** Yes

**Incompatibility with other substances.**

**If so, which ones?**

Yes. Readily forms explosive mixtures with air or oxygen. It will also burn or explode in the presence of chlorine, bromine pentafluoride, oxygen difluoride and nitrogen trifluoride. It will spontaneously ignite in the presence of chlorine dioxide.

**Reactivity and under what conditions?**

When natural gas mixes with appropriate amounts of oxidizing agents, including air and oxygen, in the presence of an ignition source, an uncontrolled explosive reaction can occur.

**Hazardous Decomposition Products:**

Combustion releases carbon dioxide, trace amounts of sulfur oxides, and nitrogen oxides.

A lack of oxygen during combustion can produce carbon monoxide and other toxic and flammable products.

**Hazardous Polymerization:** No

## Section 6 – Toxicological Properties

**Route of Entry:** Inhalation

**Effects of Acute Exposure to Product:**

Acts as a simple asphyxiant by displacing oxygen in the air. Symptoms of over exposure include rapid respiration, nausea, disorientation, and loss of consciousness.

**Irritancy:** None reported

**Exposure Limits:** Based on oxygen displacement

**Sensitization:** None reported

**Synergistic Materials:** Other Asphyxiants

**Effects of Chronic Exposure to Product:**

None reported

**Other Effects:**

None reported with respect to mutagenicity, carcinogenicity, reproductive toxicity, teratogenicity.

## Section 7 – Preventive Measures

**Personal Protective Equipment:**

CSA/ASA Safety Equipment must be available/worn as required to protect ears, eyes, feet, hands, head, remaining body area. Work around/with natural gas must be performed by individuals qualified to work with natural gas.

**Gloves (Specify):** Not normally required.

**Respiratory (Specify):**

Only required for oxygen depletion concerns. Positive pressure, self-contained breathing apparatus for emergency use when ventilation is inadequate.

**Eye (Specify):**

Safety goggles not normally required.

**Footwear (Specify):**

Refer to **Personal Protective Equipment**

**Clothing (Specify):**

Non-sparking, flame-retardant when in areas where potential flash fires may occur.

**Other (Specify):**

Appropriate hearing protection, goggles and clothing should be utilized when potential for direct contact with a high pressure gas release exists.

**Engineering Controls (Specify):**

Use spark-proof or intrinsically safe equipment when dealing with a potentially explosive atmosphere. Adequate ventilation and adequate venting of possible combustion products are required.

**Leak and Spill Procedures:**

Immediately contact your local Enbridge Gas Distribution office. Evacuate as necessary.

Do not activate any source of ignition such as electrical switches, vehicles, telephones, cellular phones, two-way radios or door bells. Eliminate ignition sources such as open flame or sparks. Ventilate buildings and structures containing natural gas.

**Waste Disposal:**

Not normally required.

**Handling Procedures and Equipment:**

All equipment piping and handling must conform to all applicable legislation requirements.

**Storage Requirements:**

Store in either pressure vessels or under ground well facilities. Storage must comply with all applicable legislation requirements.

**Special Shipping Information:**

Natural gas, when transported by a pipeline that is governed by the law of a province, is exempt from the Transportation of Dangerous Goods Act.

## Section 8 – First Aid Measures

**First Aid Procedures:**

Remove victim from contaminated area to fresh air. Perform artificial respiration if necessary, and seek medical assistance.

## Section 9 – Preparation of M.S.D.S.

**Additional Information and Comments:**

The gas flammability hazard should be considered the primary risk factor. Avoid all possible sources of accidental ignition.

**Prepared By:**

Engineering Materials  
Evaluation Centre  
Enbridge Gas Distribution Inc.  
(416) 495-5636

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**For more information see:**

[www.enbridge.com/gas](http://www.enbridge.com/gas)  
under **About Natural Gas > Safety**  
For additional copies, contact our  
Environment, Health and Safety Dept.  
(416) 495-5514

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