

### Section 1 – Material Identification and Use

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**Material Name/Identifier:**

Natural Gas (odourized)

**Trade Name and Synonyms:**

Natural Gas

**Supplier:**

AltaGas Utilities Inc.  
5509 - 45 Street  
Leduc, Alberta T9E 6T6

**Emergency Telephone Numbers:**

If local, call 780-986-5215  
For toll free, dial 1-866-222-2068

**Chemical Name:**

Methane

**Chemical Family:**

Simple hydrocarbons

**Material Use:**

Primarily a heating fuel for domestic and industrial purposes.

**Regulatory Classification:**

**WHMIS: Class A** - Compressed Gas

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

**TDG:** NATURAL GAS, COMPRESSED, (with high Methane content), 2.1 UN1971

### Section 2 – Hazardous Ingredients

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**Hazardous Ingredients:**

Ingredient	CAS No	Concentration: %	Exposure Limits (ACGIH)	LD50data	LC50 data
Methane	74-82-8	95-99	1000 ppm TLV-TWA	Not applicable	Asphyxiant
Nitrogen	7727-37-9	0-2	Not applicable Asphyxiant	Not applicable	Asphyxiant
Ethane	74-84-0	0-3	1000 ppm TLV-TWA	Not applicable	Asphyxiant
Propane	74-98-6	0-3	1000 ppm TLV-TWA	Not available	Asphyxiant
Butane	106-97-8	0-3	1000 ppm TLV-TWA	Not available	202,000 ppm/mouse/4hrs
Pentane	109-66-0	0-3	600 ppm TLV-TWA	446 mg/kg Mouse (ivn)	117000 ppm/rat/4Hrs

Natural Gas is considered a complex mixture with the CAS Number 8006-14-2. Natural gas is a naturally occurring product. The concentration ranges listed are regarded as typical for pipeline quality natural gas.

### Section 3 – Physical Data

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**Physical State:**

Gas

**Odour and Appearance:**

Natural gas in its pure state is colourless and odourless. An odourant, based on Mercaptan, is added before natural gas enters a gas utility's distribution system. The odour is quite offensive, similar to rotten eggs or sulphur.

**Odour Threshold (ppm):**

10,000

**Specific Gravity:**

Not applicable

**Vapour Pressure:**

Not applicable - gas

**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**

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**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. Will be easily ignited by heat, sparks or flames.

**Means of Extinction:**

Dry chemical, Carbon Dioxide, Halon

**Caution: Do not extinguish a leaking gas fire unless the leak can be stopped.** 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 (gas)

**Lower Explosive Limit:**

4.5% gas in air (approximately)

**Upper Explosive Limit:**

14.5% 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**

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**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**

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**Route of Entry:**

Inhalation

**Effects of Acute Exposure to Product:**

Acts as a simple asphyxiant by displacing oxygen from the breathing atmosphere primarily in enclosed spaces and result in hypoxia effects include decreased night vision, increased respiration, decreased alertness, fatigue, tunnel vision and headache. Other effects include CNS depression, cardiac sensitization, dizziness and drowsiness.

**Irritancy:**

None reported

**Exposure Limits:**

Listed in Section 2. Exposure concerns are minimal compared to oxygen deficiency and flammability.

**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**

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**Personal Protective Equipment:**

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

**Gloves (Specify):**

Chemical resistant gloves are not required but work gloves are considered a good practice.

**Respiratory (Specify):**

Only required for oxygen depletion concerns. Positive pressure, self-contained breathing apparatus for emergency use when ventilation is inadequate. If oxygen depletion occurs the likelihood of a flammable atmosphere is high.

**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 high pressure gas release exists.

**Engineering Controls (Specify):**

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

**Leak and Spill Procedures:**

Immediately contact local AltaGas Utilities district office. Evacuate as necessary but for a large spill at least a distance of 800 metres. 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 legislative requirements of the Energy Act and its Regulations.

**Storage Requirements:**

Storage in either pressure vessels or underground well facilities must comply with all Alberta Legislation requirements outlined under the Energy Act, Boiler Pressure Vessels Act and Petroleum Resources Act.

**Special Shipping Information:**

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

**Section 8 – First Aid Measures**

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**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.**

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**Additional Information and Comments:**

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

**Prepared by:**

Environment, Occupational Health & Safety Department - Telephone (780) 986-5215

**Preparation Date:**

February 22, 2010

**Caution:** Natural gas is a complex mixture such that constituent composition may vary. The information contained herein is based on the information available at the indicated date of preparation but no warranty, expressed or implied is made. Further, the information contained herein relates only to this product or material and may not be valid when used in combination with any other product or material in any process. If the product is not to be used for a purpose or under conditions which are normal or reasonably foreseeable, this information cannot be relied upon as complete or applicable. For greater certainty of information, specific uses of the product must be reviewed with the supplier.