



MATERIAL SAFETY DATA SHEET - NATURAL GAS

1. SUPPLIER

ATCO Gas
10035 - 105 Street
Edmonton, Alberta T5J 2V6
1-800-511-3447 (toll-free) for information

Emergency Telephone : (24 -hr)
CANUTEC: 1-613-996-6666 (Call Collect)

2. PRODUCT IDENTIFICATION

Manufacturer	Not applicable (natural gas is a naturally occurring product)
Trade Name	Natural Gas
Chemical Name	Methane
Synonyms	Natural Gas/high Methane content
Chemical Family	Alkanes
Molecular Formula	CH ₄ (Methane)
Product Use	Natural Gas is used primarily for space and water heating and for industrial processing applications
Method of Transport	Pipeline (under pressure) or high pressure cylinders attached to mobile vehicles

Transportation of Dangerous Goods Regulations

UN 1971; Class 2.1 **Shipping Name and Description: METHANE, COMPRESSED**

WHMIS Classification **Compressed Gas (Class A)
Flammable Gas (Class B1)**

3. HAZARDOUS COMPONENTS (See Note, Section 11)

Components	% by Volume	Occupational Exposure Information
Methane	95	Asphyxiant if breathed in place of air (refer to Section 6)
Ethane & Heavier Hydrocarbons	2	Asphyxiant if breathed in place of air (refer to Section 6)
Nitrogen	2	Asphyxiant if breathed in place of air (refer to Section 6)
Carbon Dioxide	1	Asphyxiant if breathed in place of air (refer to Section 6)
Sulphur Compounds	Trace amounts (varies in odourized gas)	

4. PHYSICAL DATA (See Note, Section 11)

Appearance and Odour	Colourless gas at room temperature and pressure Odourless unless odourized with Mercaptan (skunky smell)
Boiling Point (degrees Celsius)	-161.5°C (as Methane)
Vapour Pressure	Gaseous state at normal conditions
Freezing Point	-182.5°C
Percent Volatile (by volume)	100%
Vapour Density in Air (gaseous specific gravity)	0.584 to 0.610
Solubility in Water	0.0022% (as Methane)
Evaporation Rate	N/A

5. FIRE AND EXPLOSION HAZARD DATA (See Note, Section 11)

Flammability	In the presence of oxygen
Flammability Limits (percent in air)	4% - 14%
Fire Extinguishing Media	Dry Chemical (most effective) or carbon dioxide (CO ₂) or Halon
Ignition Temperature	Approximately 630°C (varies with temperature pressure and oxygen concentration)

OR

Auto Ignition Temperature in Air	Range 482°C - 649°C
Special Fire Fighting Procedures	Control release by limiting or shutting off source utilizing pipeline control valves Evacuate area Keep up wind of fire
Unusual Fire and Explosion Hazards	Could be potentially hazardous if uncontrolled in a confined space

NOTE: Natural Gas is lighter than air and will dissipate to atmosphere. Natural Gas **without sufficient** or **with too much** air will not burn or explode. A hazard from re-ignition or explosion exists if the flame is extinguished without stopping the flow of gas and/or cooling surroundings and eliminating ignition sources. Water spray can be used to cool the surroundings.

6. HEALTH HAZARD DATA

Effects of Overexposure	Acts as an asphyxiant by displacing oxygen in the air Displacement of air by the gas may lead to shortness of breath, unconsciousness, and death from hypoxemia. Incomplete combustion may produce carbon monoxide and aldehydes.
Emergency and First Aid Procedures	Do not enter a contaminated area unless properly protected (refer to Section 9) Stop flow of gas Move victim to uncontaminated area Supply fresh air, oxygen Perform artificial respiration if necessary Contact a physician

7. REACTIVITY DATA

Stability	Natural Gas/Methane is stable
Conditions to Avoid	Uncontrolled explosive mixtures Open flame and spark source Strong oxidants
Incompatibility	Natural Gas readily mixes with air when released and creates a combustible atmosphere. Some other strong oxidizing agents with which it can burn or explode in confined areas are: chlorine, bromine pentafluoride, oxygen difluoride and nitrogen trifluoride. It will ignite spontaneously when mixed with chlorine dioxide.
Hazardous Polymerization	May not occur
Hazardous Decomposition Products	CO ₂ , trace amounts of oxides of sulphur and nitrogen (SO ₂ and NO _x) CO if starved of oxygen during combustion

8. SPILL OR LEAK PROCEDURES

Steps to be Taken in Case Gas Leak/Line Break Occurs	Evacuate area Contact office emergency number for repair procedures Shut off source of ignition such as flame or electrical spark Shut off source of gas supply Increase ventilation Minor leaks can be detected with a soap solution applied at suspected leak points NEVER USE AN OPEN FLAME TO DETECT LEAKS
Suggested Disposal Method	Contact office emergency number

9. SPECIAL PROTECTION INFORMATION

Respiratory Protection	Positive pressure, self contained breathing apparatus (SCBA) or supplied air breathing apparatus (SABA) complete with egress unit, for emergency use Adequate ventilation required Adequate venting of possible combustion products required
Other Protective Equipment	CSA/ANSI Safety Equipment must be available and worn as required to protect ears, feet, hands, head, remaining body area

10. SPECIAL PRECAUTIONS

Precautions to be Taken	Avoid personal body contact (skin/eye contact, etc.) with high pressure gas stream
Other Precautions	Avoid all possible sources of accidental ignition (i.e., static electricity or any other explosive source) Test for hazardous concentrations prior to entering meter stations

11. PREPARATION DATE OF MSDS (September 24, 2008)

Prepared by: The Health and Safety Section of ATCO Gas
For further information or MSDS update requests, please contact Health and Safety at (780) 420-7953.

NOTE: The physical and hazard data provided is specific to the typical natural gas composition that has been provided. As a naturally occurring product, natural gas samples may have compositions that vary slightly from the typical composition. If required, the exact gas sample composition can be determined by gas chromatography analysis. For more information, contact ATCO Gas, Gas Specification Management at (403) 245-7591.