

**SECTION 1: IDENTIFICATION****1.1 Product Identifier****Product Form:** Substance**Product Name:** Natural Gas**Synonyms:** Methane**1.2 Intended Use of the Product**

Fuel gas - domestic, commercial and industrial

Note: this Safety Data Sheet does not include information related to Liquefied Natural Gas.

**1.3 Supplier Information**

UNION GAS LIMITED

50 Keil Drive North

Chatham, Ontario, N7M 5M1

1-877-969-0999

**1.4 Emergency Telephone Number****Emergency Number** : 1-877-969-0999**SECTION 2: HAZARD IDENTIFICATION****2.1 Classification of the Substance or Mixture**

Simple Asphyxiant	Simple Asphyxiants – Category 1; A gas that is a simple asphyxiant.
Gases Under Pressure	Gases under pressure / Compressed gas
Flam Gas 1	Flammable gases - Category 1
H220	Extremely flammable gas
H280	Contains gas under pressure; may explode if heated

**2.2 Label Elements****Hazard Pictograms****Signal Word**

: Danger

**Hazard Statements**

: H220 - Extremely flammable gas.  
 H280 - Contains gas under pressure; may explode if heated.  
 H380 - May displace oxygen and cause rapid suffocation.

**Precautionary Statements**

: P210 - Keep away from heat, sparks, open flames, hot surfaces. No smoking.  
 P377 - Leaking gas fire: Do not extinguish, unless leak can be stopped safely.  
 P381 - Eliminate all ignition sources if safe to do so.  
 P403 - Store in a well-ventilated place.  
 P410+P403 - Protect from sunlight. Store in a well-ventilated place.

**2.3 Other Hazards**

Exposure may aggravate those with pre-existing eye, skin, or respiratory conditions. Asphyxiant gas, can be fatal. May cause damage to the blood, central nervous system, and cardiovascular system. High concentrations of gas can cause unconsciousness and death. Mercaptan is added (rotten egg odour) to the gas, however this smell should not be relied on as a good indicator of the presence of gas as olfactory fatigue (loss of smell) occurs rapidly. Being under the influence of alcohol may enhance the effects of this product.

**SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**

Name	Product Identifier	% (w/w)	GHS / WHMIS Classification
Natural gas (predominantly methane)	(CAS No) 8006-14-2	100	Simple Asphyxiant Flam. Gas 1, H220 Compressed gas, H280

**SECTION 4: FIRST AID MEASURES****4.1 Description of First Aid Measures**

**General:** Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

**Inhalation:** Ensure own safety before attempting rescue. Remove to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER/doctor/physician if symptoms persist. Evacuate and ventilate affected area.

**Skin Contact:** Contact with rapidly expanding gas may cause irritation or frostbite. If abrasions are present, clean with soap and water, then bandage. Obtain medical attention if irritation persists. If frostbite or freezing occurs, immediately flush with plenty of lukewarm water to GENTLY warm the affected area. Do not use hot water. Do not rub affected area. Get immediate medical attention.

**Eye Contact:** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention if irritation persists.

**Ingestion:** Unlikely route of exposure. Rinse mouth. Do NOT induce vomiting. Get immediate medical attention.

**4.2 Most Important Symptoms and Effects - Acute and Delayed**

**General:** Natural Gas can act as a simple asphyxiant by displacing oxygen. Simple asphyxiant toxicity is based on availability of oxygen. The minimal oxygen content in air should be 19.5% under normal atmospheric conditions (equivalent partial pressure of 148 mm of Hg)

**Symptoms/Injuries After Inhalation:** Natural Gas can be toxic as a simple asphyxiant by displacing oxygen from the air. Symptoms of asphyxiation include headaches, rapid respiration, nausea, CNS depression, disorientation, unconsciousness, coma and death. Symptoms of respiratory irritation include cough, sneezing, headache, hoarseness and nose/throat pain.

**Symptoms/Injuries After Skin Contact:** Contact with the pressurized gas may cause irritation or frostbite. Symptoms of irritation include localized redness, swelling and/or itching. Symptoms of frostbite include prickling, numbness, change of skin colour (white, gray, yellow, blue) and potentially blisters after rewarming.

**Symptoms/Injuries After Eye Contact:** This gas is non-irritating; but direct pressurized gas contact may produce severe and possibly permanent eye damage. Symptoms include redness, pain, tearing and/or blurred vision.

**Symptoms/Injuries After Ingestion:** Ingestion is not considered a potential route of exposure.

**Chronic Symptoms/Injuries:** None reported.

**4.3 Indication of Any Immediate Medical Attention and Special Treatment Needed**

If exposed or concerned, seek medical advice/attention.

**SECTION 5: FIRE-FIGHTING MEASURES****5.1 Extinguishing Media**

**Suitable Extinguishing Media:** Dry Chemical, Carbon Dioxide (CO<sub>2</sub>) or Foam.

Note: Do not extinguish burning gas unless the flow can be stopped, otherwise explosive gas-air mixture could be formed creating a far more dangerous environment than the original fire. Extinguish secondary fires with appropriate materials.

**Unsuitable Extinguishing Media:** Do not use a heavy water stream. Use of heavy stream of water may spread fire.

**5.2 Special Hazards Arising From the Substance or Mixture**

**Fire Hazard:** Extremely flammable gas.

**Explosion Hazard:** May form flammable/explosive vapor-air mixture. Heating may cause an explosion. Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries.

**Reactivity:** Hazardous reactions will not occur under normal conditions.

**5.3 Advice for Firefighters**

**Precautionary Measures Fire:** Exercise caution when fighting any chemical fire.

**Firefighting Instructions:** Wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Vapours from liquefied gas are initially heavier than air and spread along ground. Vapours may accumulate in confined areas (basement, tanks, hopper/tank cars, etc.). Vapours may travel to source of ignition and flash back. If possible, stop the flow of gas. Do not extinguish the fire until supply is shut off as otherwise an explosive-ignition may occur. If the fire is extinguished and the flow of gas continues, use increased ventilation to prevent build-up of explosive atmosphere. Ventilation fans must be explosion proof. Use non-sparking tools to close container valves. Isolate spill or leak area for at least 100 meters (330 feet) in all directions.

**Protection During Firefighting:** Do not enter fire area without proper protective equipment, including respiratory protection.

**Hazardous Combustion Products:** Carbon oxides (CO<sub>x</sub>). Nitrogen oxides (NO<sub>x</sub>). Sulphur oxides (SO<sub>x</sub>).

### Reference to Other Sections

Refer to section 9 for flammability properties.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

### 6.1 Personal Precautions, Protective Equipment and Emergency Procedures

**General Measures:** Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Isolate spill or leak area for at least 100 meters (330 feet) in all directions. Take precautionary measures against static discharges. Pay attention to flashback. All equipment used when handling the product must be grounded. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).

#### 6.1.1 For Non-emergency Personnel

**Protective Equipment:** Use appropriate personal protection equipment (PPE).

**Emergency Procedures:** Evacuate unnecessary personnel.

#### 6.1.2 For Emergency Responders

**Protective Equipment:** Equip cleanup crew with proper protection.

**Emergency Procedures:** Ventilate area.

### 6.2 Environmental Precautions

Avoid release to the environment. Prevent spreading of vapors through sewers, ventilation systems and confined areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

### 6.3 Methods and Material for Containment and Cleaning Up

**For Containment:** Ventilate area. Use only non-sparking tools. Prevent further leakage or spillage if safe to do so.

**Methods for Cleaning Up:** Isolate area until gas has dispersed. Contact competent authorities after a leak.

### 6.4 Reference to Other Sections

See heading 8, Exposure Controls and Personal Protection.

## SECTION 7: HANDLING AND STORAGE

### 7.1 Precautions for Safe Handling

**Precautions for Safe Handling:** Wear personal protective equipment. Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharges. Use only in an area containing flame proof equipment. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Use only in area provided with appropriate exhaust ventilation. Contents under pressure. Do not breathe gas. "NO SMOKING" signs should be posted in storage and use areas.

### 7.2 Conditions for Safe Storage, Including Any Incompatibilities

**Technical Measures:** Proper grounding procedures to avoid static electricity should be followed. Comply with applicable regulations. Use explosion proof equipment.

**Storage Conditions:** Keep away from open flames, hot surfaces and sources of ignition. Keep containers tightly closed in a cool, well-ventilated place. Store in accordance with local regulations, specifically in Ontario, storage in either pressure vessels or underground well facilities must comply with all Ontario Legislation requirements outlined under the Technical Standards & Safety Act, Boiler Pressure Vessels Act and Petroleum Resources Act.

**Incompatible Products:** Acids. Oxidizers (e.g. air, oxygen). Halogens (chlorine, oxygen fluoride, bromine pentafluoride, etc.)

Note: Natural gas ignites spontaneously when mixed with chlorine dioxides.

### 7.3 Specific End Use(s)

Fuel

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 Control Parameters

For substances listed in section 3 that are not listed here, there are no established Exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: AIHA (WEEL), NIOSH (REL), OSHA (PEL), Canadian provincial governments, or the Mexican government.

Natural gas (8006-14-2)		
ACGIH	Simple asphyxiant	Consider oxygen levels
Ontario	OEL TWA (ppm)	1000 ppm
British Columbia	OEL TWA (ppm)	1000 ppm

Northwest Territories	OEL STEL (ppm)	1250 ppm
Northwest Territories	OEL TWA (ppm)	1000 ppm
Saskatchewan	OEL STEL (ppm)	1250 ppm
Saskatchewan	OEL TWA (ppm)	1000 ppm

## 8.2 Exposure Controls

**Appropriate Engineering Controls:** Adequate ventilation and adequate venting of possible combustion products. Eyewash Stations. Spark proof or intrinsically safe equipment when dealing with potentially explosive atmosphere.

**Personal Protective Equipment:** Protective goggles. Protective clothing. Respiratory protection of the dependent type. Insulated gloves.



**Materials for Protective Clothing:** Non-sparking, flame/fire retardant when in areas where flash fires may occur.

**Hand Protection:** Insulated gloves.

**Eye Protection:** Wear safety glasses. Chemical goggles or face shield if close to gas release.

**Respiratory Protection:** Lack of oxygen is the primary concern, therefore supplied air respirators are required whenever exposure may exceed established Occupational Exposure Limits or concentration may reduce oxygen levels below 19.5%.

**Thermal Hazard Protection:** Wear suitable protective clothing.

**Other Information:** Appropriate hearing protection, goggles and clothing should be utilized when potential for direct contact with high pressure gas release exists. When using, do not eat, drink or smoke.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on Basic Physical and Chemical Properties

Physical State	: Gas
Appearance	: Colorless
Odor	: Odorless to slight, sweet
Odor Threshold	: Mercaptan odorant - 1 ppb
pH	: Not available
Evaporation Rate	: Not available
Melting Point	: Not available
Freezing Point	: -182.6 °C (as methane)
Boiling Point	: -161.4 °C (as methane)
Flash Point	: Not available
Auto-ignition Temperature	: Not available
Decomposition Temperature	: Not available
Flammability (solid, gas)	: Extremely flammable gas
Lower Flammable Limit	: Not available
Upper Flammable Limit	: Not available
Vapor Pressure	: 613 atm @ 24 °C (as methane)
Relative Vapor Density at 20 °C	: 0.53 - 0.7 (as methane)
Relative Density	: 0.554@ 24 °C (as methane)
Specific Gravity	: Not available
Solubility	: Not available
Partition Coefficient: N-Octanol/Water	: Not available
Viscosity	: Not available
Explosion Data – Sensitivity to Mechanical Impact	: Mechanical impact may act as an ignition source.
Explosion Data – Sensitivity to Static Discharge	: Static discharge may act as an ignition source.

## SECTION 10: STABILITY AND REACTIVITY

- 10.1 Reactivity:** Hazardous reactions will not occur under normal conditions.
- 10.2 Chemical Stability:** Extremely flammable gas. Stable under recommended handling and storage conditions (see section 7).
- 10.3 Possibility of Hazardous Reactions:** Hazardous polymerization will not occur.
- 10.4 Conditions to Avoid:** Direct sunlight, extremely high or low temperatures, ignition sources, combustible materials, incompatible materials.
- 10.5 Incompatible Materials:** Acids. Oxidizers. Halogens. Chlorine. Aluminum chloride.
- 10.6 Hazardous Decomposition Products:** Carbon oxides (CO, CO<sub>2</sub>). Hydrocarbons. Trace amounts of sulphur and nitrogen (SO<sub>2</sub> and NO<sub>x</sub>).

## SECTION 11: TOXICOLOGICAL INFORMATION

### 11.1 Information on Toxicological Effects – Product

Gas flammability hazard should be considered the primary risk factor since the lower explosive limit (LEL) would typically need to be exceeded before gas toxicity would become significant.

**Symptoms/Injuries After Inhalation:** Gas can be toxic as a simple asphyxiant by displacing oxygen from the air. Asphyxia by lack of oxygen: risk of death. May cause drowsiness or dizziness.

**Symptoms/Injuries After Skin Contact:** Contact with the pressurized gas may cause cold burns/frostbite.

**Symptoms/Injuries After Eye Contact:** This gas is non-irritating; but direct pressurized gas contact may produce severe and possibly permanent eye damage.

**Symptoms/Injuries After Ingestion:** Ingestion is not considered a potential route of exposure.

**Acute Toxicity:** Not classified

**Skin Corrosion/Irritation:** Not classified

**Serious Eye Damage/Irritation:** Not classified

**Respiratory or Skin Sensitization:** Not classified

**Germ Cell Mutagenicity:** Not classified

**Teratogenicity:** Not available

**Carcinogenicity:** Not classified

**Specific Target Organ Toxicity (Repeated Exposure):** Not classified

**Reproductive Toxicity:** Not classified

**Specific Target Organ Toxicity (Single Exposure):** Not classified

**Aspiration Hazard:** Not classified

### 11.2 Information on Toxicological Effects LD50 and LC50 Data:

Natural gas (8006-14-2)	
LC50 Inhalation Rat	658 mg/l/4h

## SECTION 12: ECOLOGICAL INFORMATION

### 12.1 Ecotoxicity

No additional information available

### 12.2 Persistence and Degradability

Natural Gas	
Persistence and Degradability	Product is biodegradable.

### 12.3 Bioaccumulative Potential

Natural Gas	
Bioaccumulative Potential	Not expected to bioaccumulate.

Natural gas (8006-14-2)	
Log Pow	<= 2.8

**12.4 Mobility in Soil** Not available

### 12.5 Other Adverse Effects

**Other Information:** Avoid release to the environment.

## SECTION 13: DISPOSAL CONSIDERATIONS

### 13.1 Waste treatment methods

**Waste Disposal Recommendations:** Dispose of waste material in accordance with all local, regional, national, provincial, territorial and international regulations.

**Additional Information:** Handle empty containers with care because residual vapors are flammable. Empty gas cylinders should be returned to the vendor for recycling or refilling.

## SECTION 14: TRANSPORT INFORMATION

### 14.1 In Accordance with TDG (Canada)

Proper Shipping Name : NATURAL GAS, COMPRESSED  
 Hazard Class : 2.1  
 Identification Number : UN1971  
 Label Codes : 2.1  
 Description : UN1971, Natural gas, compressed, 2.1



### 14.2 In Accordance with DOT (United States)

Proper Shipping Name : NATURAL GAS, COMPRESSED  
 Hazard Class : 2.1  
 Identification Number : UN1971  
 Label Codes : 2.1  
 ERG Number : 115



### 14.3 In Accordance with IMDG (International Maritime)

Proper Shipping Name : NATURAL GAS, COMPRESSED  
 Hazard Class : 2  
 Division : 2.1  
 Identification Number : UN1971  
 Label Codes : 2.1  
 EmS-No. (Fire) : F-D  
 EmS-No. (Spillage) : S-U







### 14.4 In Accordance with IATA (International Air)

Proper Shipping Name : NATURAL GAS, COMPRESSED  
 Identification Number : UN1971  
 Hazard Class : 2  
 Label Codes : 2.1  
 Division : 2.1  
 ERG Code (IATA) : 10L



## SECTION 15: REGULATORY INFORMATION

### 15.1 Canadian Regulations

<b>Natural Gas (8006-14-2)</b>		
Listed on the Canadian DSL (Domestic Substances List)		
WHMIS 1988 Classification	Class B Division 1 - Flammable Gas Class A - Compressed Gas	 
WHMIS 2015 Classification	Simple Asphyxiant Flammable Gas – Category 1 Gas Under Pressure	 

### 15.2 US Federal Regulations

<b>Natural Gas (8006-14-2)</b>	
SARA Section 311/312 Hazard Classes	Fire hazard Immediate (acute) health hazard Sudden release of pressure hazard

**Natural gas (8006-14-2)**

Listed on the United States TSCA (Toxic Substances Control Act) inventory

**15.3 US State Regulations****Natural gas (8006-14-2)**

RTK - U.S. - Massachusetts - Right To Know List

RTK - U.S. - Pennsylvania - RTK (Right to Know) List

**SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION****Revision Date:** 09/2015**Other Information:** This document has been prepared in accordance with the SDS requirements of the WHMIS 2015 Hazardous Products Act and Regulations and OSHA Hazard Communication Standard 29 CFR 1910.1200.**SDS Prepared By:**

UNION GAS LIMITED in consultation with msdsonline

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*CAUTION: Natural Gas is a complex mixture such that composition may vary. This SDS is based on the information available at the date of preparation but no warranty, expressed or implied, is made. Further, the information 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 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.*