

## Devon Canada Corporation Natural Gas (Sweet)

### SECTION 1. IDENTIFICATION

<b>Product Identifier</b>	Devon Canada Corporation Natural Gas (Sweet)
<b>Other Means of Identification</b>	Produced Gas (Sweet)
<b>Other Identification</b>	Natural Gas, Sweet Gas
<b>Product Family</b>	Natural Gas (Sweet)
<b>Recommended Use</b>	Process feedstock.
<b>Manufacturer / Supplier</b>	Devon Canada Corporation, 2000, 400 - 3rd Avenue SW, Calgary, Alberta, T2P 4H2
<b>Emergency Phone No.</b>	Devon Canada Corporation, 1-403-232-7100, (24 hr) CANUTEC, 1-613-996-6666, (24 hr)

### SECTION 2. HAZARDS IDENTIFICATION

#### GHS Classification

Flammable gas - Category 1; Gas under pressure - Compressed gas; Acute toxicity (Inhalation) - Category 2; Skin corrosion/irritation - Category 2; Serious eye damage/eye irritation - Category 2B  
 OSHA Defined Hazards: Simple asphyxiant

#### GHS Label Elements



Signal Word:  
Danger

#### Hazard Statement(s):

H220 Extremely flammable gas.  
 May displace oxygen and cause rapid suffocation.

#### Precautionary Statement(s):

P210 Keep away from heat, sparks, open flames, and hot surfaces. – No smoking.  
 P260 Do not breathe dust, fume, gas, mist, vapours or spray.  
 P271 Use only outdoors or in a well-ventilated area.  
 P284 In case of inadequate ventilation wear respiratory protection (NIOSH approved self-contained breathing apparatus (SCBA) or supplied air respirator; NIOSH approved air-purifying respirator with an appropriate cartridge).

#### Other Hazards

#### EMERGENCY OVERVIEW :

FLAMMABLE GAS. Extremely flammable. May form flammable/explosive vapour-air mixtures. Electrostatic charges

may be generated during handling. Electrostatic discharges may cause fire.

**General Hygiene Comments :**

Do NOT eat, drink or store food in work areas.

Remove contaminated clothing and protective equipment before entering eating areas or leaving work area.

Wash hands thoroughly after handling this product and before eating, using the washroom or leaving work area.

### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	%	Other Identifiers
Natural gas	8006-14-2	100	
Methane	74-82-8	92.00+	
Carbon Dioxide	124-38-9	0.75 - 1.00	
Benzene	71-43-2	< 0.01	
Toluene	108-88-3	< 0.01	
Ethylbenzene	100-41-4	< 0.01	
Xylene (mixed isomers)	1330-20-7	< 0.01	
Ethane	74-84-0	0.75 - 1.00	
Propane	74-98-6	0.01 - 0.05	
Isobutane	75-28-5	Trace	
n-Butane	106-97-8	Trace	
Isopentane	78-78-4	Trace	
n-Pentane	109-66-0	Trace	
Hexanes	110-54-3	Trace	
Heptanes+	142-82-5	Trace	

**Notes**

Concentrations are expressed in % volume/volume.

### SECTION 4. FIRST-AID MEASURES

**First-aid Measures**

**Inhalation**

In case of oxygen deficiency: take precautions to ensure your own safety before attempting rescue (e.g. wear appropriate protective equipment). Move to fresh air. Keep at rest in a position comfortable for breathing. If breathing is difficult, trained personnel should administer emergency oxygen if advised to do so by Poison Centre or doctor. If breathing has stopped, trained personnel should begin rescue breathing.

**Skin Contact**

If persistent irritation occurs, obtain medical attention.

**Eye Contact**

If persistent irritation occurs, obtain medical attention.

**Most Important Symptoms and Effects, Acute and Delayed**

If inhaled:

A high concentration can displace oxygen in the air. If less oxygen is available to breathe, symptoms such as rapid breathing, rapid heart rate, clumsiness, emotional upsets and fatigue can result. As less oxygen becomes available, nausea and vomiting, collapse, convulsions, coma and death can occur. Symptoms occur more quickly with physical effort. Lack of oxygen can cause permanent damage to organs including the brain and heart.

If on skin:

Direct contact with the liquefied gas can chill or freeze the skin (frostbite).

If in eyes:

Direct contact with the liquefied gas can freeze the eye. Permanent eye damage or blindness can result.

**Immediate Medical Attention and Special Treatment**

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## Special Instructions

Treat symptomatically. CNS asphyxiant. May cause rhinitis, bronchitis, and occasionally pulmonary edema after severe exposure. Consider oxygen therapy. Consult a Poison Control Center for guidance.

## SECTION 5. FIRE-FIGHTING MEASURES

### Extinguishing Media

#### Suitable Extinguishing Media

Carbon dioxide, dry chemical powder, appropriate foam, water spray or fog.

#### Unsuitable Extinguishing Media

Do not use water in a stream or jet.

### Specific Hazards Arising from the Chemical

Flammable gas. Can easily ignite. Can readily form explosive mixture with air at room temperature. May displace oxygen in the air, causing rapid suffocation.

### Special Protective Equipment and Precautions for Fire-fighters

Stop leak/source before attempting to put out the fire. Product could form an explosive mixture and reignite. If the leak/source cannot be stopped, let the fire burn itself out. Wear full protective clothing and self-contained breathing apparatus.

## SECTION 6. ACCIDENTAL RELEASE MEASURES

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

Evacuate the area immediately. Isolate the hazard area. Keep out unnecessary and unprotected personnel. Do not operate electrical equipment. Vent contaminated area thoroughly. Shut off leaks, if possible, without personal risks. Eliminate all ignition sources. Use grounded, explosion-proof equipment. Take precautionary measures against static discharge. Before entry, especially into confined areas, check atmosphere with an appropriate monitor.

### Other Information

Report leaks/spills to local health, safety and environmental authorities, as required.

## SECTION 7. HANDLING AND STORAGE

### Precautions for Safe Handling

Only use where there is adequate ventilation. Prevent uncontrolled release of product. Eliminate heat and ignition sources such as sparks, open flames, hot surfaces and static discharge. Post "No Smoking" signs. Electrically bond and ground equipment. Ground clips must contact bare metal. Check for oxygen deficiency in work area. If used in a confined space, check for oxygen deficiency before worker entry and during work. In the event of a spill or leak, exit the area immediately.

### Conditions for Safe Storage

Store in an area that is: cool, well-ventilated, out of direct sunlight and away from heat and ignition sources.

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control Parameters

Chemical Name	ACGIH TLV®		OSHA PEL		AIHA WEEL	
	TWA	STEL	TWA	Ceiling	8-hr TWA	TWA
Methane	Not established					
Ethane	Not established					
Propane	1000 ppm					
Isobutane		1000 ppm				
n-Butane		1000 ppm	800 ppm			

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Isopentane	600 ppm				
n-Pentane	600 ppm		1000 ppm		
Hexanes	50 ppm Skin		500 ppm		
Heptanes+	400 ppm	500 ppm	500 ppm		
Carbon Dioxide	5000 ppm	30000 ppm			
Benzene	0.5 ppm A1 Skin	2.5 ppm A1 Skin			
Toluene	20 ppm A4		200 ppm		
Ethylbenzene	100 ppm	125 ppm			
Xylene (mixed isomers)	100 ppm A4	150 ppm A4			

D = Simple asphyxiant. Minimal oxygen content required.

### Appropriate Engineering Controls

Do not allow product to accumulate in the air in work or storage areas, or in confined spaces. Use local exhaust and general ventilation, if necessary, to maintain air oxygen levels at a minimum of 18%. Use non-sparking ventilation systems, approved explosion-proof equipment and intrinsically safe electrical systems in areas where this product is used and stored. Control static electricity discharges which includes bonding of equipment to ground.

### Individual Protection Measures

#### Eye/Face Protection

Not required if product is used as directed.

#### Skin Protection

Not required, if used as directed.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

### Basic Physical and Chemical Properties

<b>Appearance</b>	Colourless gas.
<b>Odour</b>	Faint hydrocarbon
<b>pH</b>	Not applicable
<b>Melting Point/Freezing Point</b>	Not applicable (melting); Not applicable (freezing)
<b>Initial Boiling Point/Range</b>	Not applicable
<b>Flammability (solid, gas)</b>	Extremely flammable gas. (Methane)
<b>Upper/Lower Flammability or Explosive Limit</b>	<= 15% (Methane) (upper); >= 5% (Methane) (lower)
<b>Vapour Density (air = 1)</b>	< 1.0
<b>Solubility</b>	Slightly soluble in water
<b>Auto-ignition Temperature</b>	Not available
<b>Decomposition Temperature</b>	Not available
<b>Other Information</b>	
<b>Physical State</b>	Gas
<b>Molecular Formula</b>	CH <sub>4</sub> (Based on Methane)
<b>Molecular Weight</b>	17.1 (Calculated)

## SECTION 10. STABILITY AND REACTIVITY

### Chemical Stability

Normally stable.

### Conditions to Avoid

Open flames, sparks, static discharge, heat and other ignition sources. May form explosive mixture on contact with air.

### Incompatible Materials

Strong oxidizing agents (e.g. perchloric acid).

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## Hazardous Decomposition Products

Hazardous decomposition products are not expected to form during normal storage.

## SECTION 11. TOXICOLOGICAL INFORMATION

### Likely Routes of Exposure

Inhalation; skin contact; eye contact.

### Acute Toxicity

Chemical Name	LC50	LD50 (oral)	LD50 (dermal)
Methane	Not available	Not available	
Ethane	Not available	Not available	Not available
Propane	> 800000 ppm (rat) (30-minute exposure)	Not applicable	Not applicable
Isobutane	368000 mg/kg (male mouse) (4-hour exposure) (vapour)	> 5000 mg/kg	> 5000 mg/kg
n-Butane	658 mg/L (rat) (4-hour exposure)	Not available	Not available
Isopentane	140000 ppm (mouse) (2-hour exposure) (vapour)	> 2000 mg/kg (rat)	Not available
n-Pentane	6106 ppm (rat) (4-hour exposure)	> 2000 mg/kg (rat)	Not available
Hexanes	73680 ppm (rat) (4-hour exposure) (vapour)	32290 mg/kg (male rat)	> 3295 mg/kg (rabbit)
Heptanes+	~ 25000 ppm (rat) (4-hour exposure)	> 15000 mg/kg (rat)	Not available
Carbon Dioxide	Not available	Not available	Not available
Benzene	13700 ppm (rat) (4-hour exposure)	930 mg/kg (rat)	> 8240 mg/kg (rabbit)
Toluene	7585 ppm (rat) (4-hour exposure)	5580 mg/kg (male rat)	12125 mg/kg (rabbit)
Ethylbenzene	~ 4000 ppm (rat) (4-hour exposure)	3500 mg/kg (rat)	15380 mg/kg (rabbit)
Xylene (mixed isomers)	6350 ppm (male rat) (4-hour exposure)	3523 mg/kg (rat)	> 1700 mg/kg (rabbit)

### Skin Corrosion/Irritation

Not a skin irritant.

Direct contact with the liquefied gas can chill or freeze the skin (frostbite).

### Serious Eye Damage/Irritation

Not an eye irritant.

Direct contact with the liquefied gas can freeze the eye. Permanent eye damage or blindness can result.

### STOT (Specific Target Organ Toxicity) - Single Exposure

#### Inhalation

A high concentration can displace oxygen in the air. If less oxygen is available to breathe, symptoms such as rapid breathing, rapid heart rate, clumsiness, emotional upsets and fatigue can result. As less oxygen becomes available, nausea and vomiting, collapse, convulsions, coma and death can occur. Symptoms occur more quickly with physical effort. Lack of oxygen can cause permanent damage to organs including the brain and heart.

At high concentrations: depression of the central nervous system, resulting in dizziness, light-headedness, headache, and nausea.

### STOT (Specific Target Organ Toxicity) - Repeated Exposure

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Not expected to be a hazard.  
None known.

#### Respiratory and/or Skin Sensitization

Not a skin sensitizer.

#### Carcinogenicity

Chemical Name	IARC	ACGIH®	NTP	OSHA
Benzene	Group 1	A1	Known carcinogen	Carcinogen

Not expected to be a hazard.  
Not a carcinogen.

#### Reproductive Toxicity

##### Development of Offspring

Not expected to be a hazard.  
Does not harm the unborn child.

##### Sexual Function and Fertility

Not expected to be a hazard.  
Not known to be a reproductive hazard.

#### Germ Cell Mutagenicity

Not expected to be a hazard.  
Not known to be a mutagen.

#### Interactive Effects

Not expected to be a hazard.

#### Other Information

High gas concentrations will displace available oxygen from the air; unconsciousness and death may occur suddenly from lack of oxygen.

## SECTION 12. ECOLOGICAL INFORMATION

#### Toxicity

Not harmful to aquatic organisms.

#### Persistence and Degradability

No ingredient of this product or its degradation products is known to be highly persistent.

#### Bioaccumulative Potential

This product and its degradation products are not known to bioaccumulate.

#### Mobility in Soil

This product rapidly moves through and into the environment.

## SECTION 13. DISPOSAL CONSIDERATIONS

#### Disposal Methods

Material Disposal:

Do not discharge into areas where there is a risk of forming an explosive mixture with air.

Local Legislation:

Disposal should be in accordance with applicable regional, national, and local laws and regulations. Local regulations may be more stringent than regional or national requirements and must be complied with.

## SECTION 14. TRANSPORT INFORMATION

Regulation	UN No.	Proper Shipping Name	Transport Hazard Class(es)	Packing Group
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Canadian TDG	1971	METHANE, COMPRESSED; or NATURAL GAS, COMPRESSED with high methane content (METHANE, COMPRESSED; or NATURAL GAS, COMPRESSED with high methane content)	2.1	
US DOT	1971	METHANE, COMPRESSED; or NATURAL GAS, COMPRESSED with high methane content (METHANE, COMPRESSED; or NATURAL GAS, COMPRESSED with high methane content)	2.1	

**Special Precautions for User** Not applicable

**Transport in Bulk According to Annex II of MARPOL 73/78 and the IBC Code**

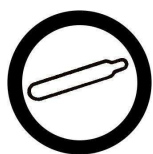
Not applicable

## SECTION 15. REGULATORY INFORMATION

### Safety, Health and Environmental Regulations

#### Canada

##### WHMIS Classification



Class A



Class B1

A - Compressed Gas; B1 - Flammable Gas

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contains all of the information required by the Controlled Products Regulations.

## SECTION 16. OTHER INFORMATION

**NFPA Rating** Health - 1 Flammability - 4 Instability - 0

**SDS Prepared By** Maxxam Analytics

**Phone No.** 1-800-386-7247

**Date of Preparation** September 08, 2015

**Key to Abbreviations** ACGIH® = American Conference of Governmental Industrial Hygienists  
OSHA = US Occupational Safety and Health Administration  
RTECS® = Registry of Toxic Effects of Chemical Substances

**References** CHEMINFO database. Canadian Centre for Occupational Health and Safety (CCOHS).  
Registry of Toxic Effects of Chemical Substances (RTECS®) database. Accelrys, Inc.  
Available from Canadian Centre for Occupational Health and Safety (CCOHS).

**Disclaimer** This SDS provides safety information and was developed for employees, customers and agents of Devon Canada Corporation from data obtained from the sample(s) submitted for analysis. The information may not be valid or complete if the product or material is used in combination with other products or materials, or in any process. This information is intended for reasonable normal usage and recommended practices, and to underscore the potential hazards that may be inherent to the nature of the product or material. Although every effort is made to ensure accuracy and completeness of the contained information, it is understood that Maxxam Analytics makes no warranty as to the accuracy or completeness of information and assumes no liability for any damage or loss suffered as result of any inaccuracy or incompleteness therein. This information is considered to be as accurate as possible, as of the date of preparation. The reader is invited to contact Devon Canada Corporation at the address shown to insure the information is up to date or to obtain further information related to an unusual or other use.

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(M)SDS related sample(s) :  
Devon Blackfoot 16-06-049-01-W4M Sales Gas