

## Natural Gas (Sweet)

### SECTION 1. IDENTIFICATION

<b>Product Identifier</b>	Natural Gas (Sweet)
<b>Other Means of Identification</b>	Fuel Gas, Sweet Gas, Methane Gas, Sales Gas, Raw Gas, Process Gas, Compressed Natural Gas, Residue Gas
<b>Product Family</b>	Natural Gas (Sweet)
<b>Recommended Use</b>	Fuel gas, heating gas.
<b>Restrictions on Use</b>	None known.
<b>Manufacturer/Supplier Identifier</b>	Devon Canada Corporation 2000, 400 - 3rd Avenue SW Calgary, Alberta T2P 4H2 (403) 232-7100
<b>Emergency Phone No.</b>	CANUTEC, 1-888-CAN-UTEC (226-8832), (24 hr)

### SECTION 2. HAZARD IDENTIFICATION

#### Classification

Flammable gas - Category 1; Gas under pressure - Compressed gas; Simple asphyxiant - Category 1

#### Label Elements



Signal Word:  
Danger

#### Hazard Statement(s):

H220 Extremely flammable gas.  
H280 Contains gas under pressure; may explode if heated.  
H281 Contains refrigerated gas; may cause cryogenic burns or injury.  
May displace oxygen and cause rapid suffocation.

#### Precautionary Statement(s):

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P241 Use explosion-proof electrical, ventilating, and lighting equipment.  
P242 Use only non-sparking tools.  
P261 Avoid breathing gas, vapours.  
P280 Wear protective gloves/protective clothing.  
P284 In case of inadequate ventilation wear respiratory protection (NIOSH approved self-contained breathing apparatus (SCBA) or supplied air respirator).

#### Other Hazards

EMERGENCY OVERVIEW :

FLAMMABLE GAS. Extremely flammable. May form flammable/explosive gas-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.

### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	%	Other Identifiers
Natural gas	8006-14-2	100	Fuel gas
Carbon Dioxide	124-38-9	0.75 - 1.00	Carbonic acid gas
Methane	74-82-8	92.00 - 98.00	Methyl hydride
Ethane	74-84-0	0.75 - 1.00	Ethyl hydride
Propane	74-98-6	0.01 - 0.05	Propyl hydride
Isobutane	75-28-5	Trace	2-methylpropane
n-Butane	106-97-8	Trace	Butyl hydride
Isopentane	78-78-4	Trace	2-methylbutane
n-Pentane	109-66-0	Trace	Pentyl hydride
Hexanes	110-54-3	Trace	Not available
Heptanes+	142-82-5	Trace	Not available
Benzene	71-43-2	< 0.01	Benzol
Toluene	108-88-3	< 0.01	Methylbenzene
Ethylbenzene	100-41-4	< 0.01	Phenylethane
Xylene (mixed isomers)	1330-20-7	< 0.01	1,2/1,3/1,40-dimethylbenzene

#### 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.

##### Ingestion

Not a likely route of exposure.

#### 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 pressurized gas release can chill or freeze the skin (frostbite). Symptoms of more severe frostbite include a burning sensation and stiffness. The skin may become waxy white or yellow. Blistering, tissue death

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and infection may develop in severe cases.

### Immediate Medical Attention and Special Treatment

#### Special Instructions

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

## SECTION 5. FIRE-FIGHTING MEASURES

### Extinguishing Media

#### Suitable Extinguishing Media

Small fire: 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 Product

Flammable gas. Can easily ignite. Can readily form explosive mixtures 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.

### Environmental Precautions

It is good practice to prevent releases into the environment.

### Methods and Materials for Containment and Cleaning Up

Ventilate the area to prevent the gas from accumulating, especially in confined spaces.

### 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 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					

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	established				
Ethane	Not established				
Propane	1000 ppm				
Isobutane		1000 ppm			
n-Butane		1000 ppm	800 ppm		
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			

### 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.

#### Respiratory Protection

Not normally required if product is used as directed.

For non-routine or emergency situations: if the oxygen content of the air is below acceptable limits, wear a NIOSH approved self-contained breathing apparatus (SCBA) or supplied air respirator.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

### Basic Physical and Chemical Properties

<b>Appearance</b>	Colourless gas.
<b>Odour</b>	Faint hydrocarbon
<b>Odour Threshold</b>	Not available
<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>Flash Point</b>	Not applicable
<b>Evaporation Rate</b>	Not applicable
<b>Flammability (solid, gas)</b>	Extremely flammable gas.
<b>Upper/Lower Flammability or Explosive Limit</b>	<= 15% (upper); >= 5% (lower)
<b>Vapour Pressure</b>	Not applicable
<b>Vapour Density (air = 1)</b>	< 1.0
<b>Relative Density (water = 1)</b>	Not applicable
<b>Solubility</b>	Practically insoluble in water

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<b>Partition Coefficient, n-Octanol/Water (Log Kow)</b>	Not applicable
<b>Auto-ignition Temperature</b>	580 °C (estimated) (Methane)
<b>Decomposition Temperature</b>	Not applicable
<b>Viscosity</b>	Not applicable (kinematic)
<b>Other Information</b>	
<b>Physical State</b>	Gas
<b>Molecular Formula</b>	CH4 (Methane)
<b>Molecular Weight</b>	17.1 (calculated)
<b>Critical Temperature</b>	Not available

## SECTION 10. STABILITY AND REACTIVITY

### Reactivity

Not reactive.

### Chemical Stability

Normally stable.

### Possibility of Hazardous Reactions

None expected under normal conditions of storage and use.

### 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).

### 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	Not applicable
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

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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.

#### **Serious Eye Damage/Irritation**

Not an eye irritant.

#### **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.

##### **Ingestion**

Not an expected route of exposure.

#### **Aspiration Hazard**

Not known to be an aspiration hazard.

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

Not expected to be a hazard.

#### **Respiratory and/or Skin Sensitization**

Not a respiratory sensitizer. Not a skin sensitizer.

#### **Carcinogenicity**

Not expected to be a hazard.

#### **Reproductive Toxicity**

##### **Development of Offspring**

Material in general is not expected to cause harm. The material in general is not expected to produce teratogenic or embryotoxic effects. Not known to harm the unborn child.

##### **Sexual Function and Fertility**

Material in general is not expected to cause harm. The material in general is not expected to have toxic reproductive effects.

##### **Effects on or via Lactation**

No information was located.

#### **Germ Cell Mutagenicity**

Material in general is not expected to cause harm. The material in general is not expected to produce mutagenic effects.

#### **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

### Ecotoxicity

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

If released, this material will move rapidly through and into the environment.

### Other Adverse Effects

There is no information available.

## 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
Canadian TDG	1971	METHANE, COMPRESSED; or NATURAL GAS, COMPRESSED with high methane content	2.1	Not applicable.
US DOT	1971	METHANE, COMPRESSED; or NATURAL GAS, COMPRESSED with high methane content	2.1	Not applicable.

**Environmental Hazards** Not applicable

**Special Precautions** 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

This section is not required by WHMIS.

## 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  
**Date of Last Revision** June 14, 2016  
**Revision Indicators** Document updated from 2015-09-08 original SDS (all sections).  
**Key to Abbreviations** ACGIH® = American Conference of Governmental Industrial Hygienists

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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. Dassault  
Systèmes/BIOVIA ("BIOVIA"). Available from Canadian Centre for Occupational Health and  
Safety (CCOHS).

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SDS representative sample(s) :

Devon Blackfoot 16-06-049-01-W4M Sales Gas