

# GAS INNOVATIONS®

## Safety Data Sheet

Material Name: Natural Gas Odorized SDS No. 8010

### US GHS

**Synonyms:** Compressed Natural Gas (CNG); Dry Natural Gas; Methane; Pipeline Spec Gas; Processed Gas; Residue Gas; Sweet Natural Gas; Natural Gas (odorized); Treated Gas

### \*\*\* Section 1 - Product and Company Identification \*\*\*

#### Manufacturer Information

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### \*\*\*Section2-HazardsIdentification\*\*\*

#### GHS Classification:

Flammable Gas - Category 1  
Gases Under Pressure - Liquefied Gas  
Specific Target Organ Systemic Toxicity (STOT) - Single Exposure Category 2

#### GHS LABEL ELEMENTS



#### Symbol(s) Signal Word

Danger

#### Hazard Statements

Extremely flammable gas.  
Contains gas under pressure, may explode if heated.  
May cause damage to the central nervous and respiratory systems.

#### Precautionary Statements

##### Prevention

Keep away from heat/sparks/open flames/hot surfaces.  
No smoking.  
Do not breathe fumes/gas/mist/vapor's/spray.  
Wash thoroughly after handling.  
Do not eat, drink, or smoke when using this product.

##### Response

Leaking gas fire: Do not extinguish unless leak can be stopped safely. Eliminate all ignition sources if safe to do so.  
IF exposed or concerned: Call a POISON CENTER or doctor/physician.

##### Storage

Protect from sunlight. Store in a well-ventilated place. Store locked up.

##### Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations.

### \*\*\*Section3-Composition/InformationonIngredients\*\*\*

CAS #	Component	Percent
68410-63-9	Natural gas, dried	100
74-82-8	Methane	<90
74-84-0	Ethane	<1

A complex mixture of light gases separated from raw natural gas consisting of aliphatic hydrocarbons having carbon numbers in the range of C1 through C4, predominantly methane (C1) and ethane (C2); may contain carbon dioxide (CO2). May be odorized with trace amounts of odorant (see Section 9). This is for natural gas that has been processed and is in commerce.

Natural gas is a complex combination of light gases separated from raw natural gas, which is a naturally occurring product. Natural gas consists primarily of methane and ethane; the table below identifies the components in natural gas that maybe present in concentration of 1 percent or more by volume. For health and safety determination purposes, the natural gas composition listed in the table below represents the widest range of components observed in the natural gas distributed by Gas Innovations.. The following constituents may also be present in natural gas at concentrations less than 1 percent by volume: Propane, Iso-butane, normal butane, pentanes, hexanes and heavier hydrocarbons (C6+), hydrogen sulfide, tertiary butane mercaptan, isopropyl mercaptan, normal propyl mercaptan, and second butyl mercaptan. The mercaptan compounds listed above are added in trace amounts (typically about 2 parts per million) to odorize the natural gas for safety purposes.

### \*\*\*Section4-FirstAidMeasures\*\*\*

#### First Aid: Eyes

In case of freeze burn, cover eyes to protect from light. Seek immediate medical attention.

#### First Aid: Skin

Remove contaminated clothing. In case of blistering, frostbite or freeze burns, seek immediate medical attention.

#### First Aid: Ingestion

Risk of ingestion is extremely low. However, if oral exposure occurs, seek immediate medical assistance.

#### First Aid: Inhalation

Remove person to fresh air. If person is not breathing, provide artificial respiration. If necessary, provide additional oxygen once breathing is restored if trained to do so. Seek medical attention immediately.

### \*\*\*Section5-FireFightingMeasures\*\*\*

#### General Fire Hazards

See Section 9 for Flammability Properties.

Dangerous fire and explosion hazard when exposed to heat, sparks, or flame. Natural gas is lighter than air and may travel long distances to a point of ignition and flash back. Containers may explode in heat or fire. Liquefied Natural Gas (LNG) releases flammable gas at well below ambient temperatures and readily forms a flammable mixture with air.

#### Hazardous Combustion Products

Carbon monoxide, carbon dioxide and non-combusted hydrocarbons (smoke).

#### Extinguishing Media

Any extinguisher suitable for Class B fires, dry chemical, firefighting foam, CO<sub>2</sub>, and other gaseous agents. However, fire should not be extinguished unless flow of gas can be immediately stopped.

## **Unsuitable Extinguishing Media**

None

## **Fire Fighting Equipment/Instructions**

Gas fires should not be extinguished unless flow of gas can be immediately stopped. Shut off gas source and allow gas to burn out. If spill or leak has not ignited, determine if water spray may assist in dispersing gas or vapor to protect personnel attempting to stop leak. Use water to cool equipment, surfaces and containers exposed to fire and excessive heat. For large fire the use of unmanned hose holders or monitor nozzles may be advantageous to further minimize personnel exposure. Isolate area particularly around ends of storage vessels. Let vessel, tank car or container burn unless leak can be stopped. Withdraw immediately in the event of a rising sound from a venting safety device. Large fires typically require specially trained personnel and equipment to Firefighting activities that may result in potential exposure to high heat, smoke, or toxic by-products of combustion should require NIOSH- approved pressure-demand self-contained breathing apparatus with full facepiece and full protective clothing.

## **\*\*\*Section6-AccidentalReleaseMeasures\*\*\***

### **Recovery and Neutralization**

Stop the source of the release, if safe to do so.

### **Materials and Methods for Clean-Up**

Do not flush down sewer or drainage systems. Do not touch spilled liquid (frostbite/freeze burn hazard!). Consider the use of water spray to disperse vapors. Isolate the area until gas has dispersed. Ventilate and gas test area before entering.

### **Emergency Measures**

Evacuate nonessential personnel and secure all ignition sources. No road flares, smoking, or flames in hazard area. Consider wind direction, stay upwind and uphill, if possible. Evaluate the direction of product travel. Vapor cloud may be white, but color will dissipate as cloud disperses - fire and explosion hazard is still present!

### **Personal Precautions and Protective Equipment**

Do not touch spilled liquid (frostbite/freeze burn hazard!).

### **Environmental Precautions**

Do not flush down sewer or drainage systems.

### **Prevention of Secondary Hazards**

None

## **\*\*\*Section7-HandlingandStorage\*\*\***

### **Handling Procedures**

Keep away from flame, sparks, and excessive temperatures. Bond and ground containers. Use only in well-ventilated areas.

### **Storage Procedures**

Store only in approved containers. Bond and ground containers. Keep away from flame, sparks, excessive temperatures, and open flame. Keep containers closed and clearly labeled. Empty product

containers or vessels may contain explosive vapors. Do not pressurize, cut, heat, weld or expose such containers to sources of ignition.

### Incompatibilities

Keep away from strong oxidizers, ignition sources and heat.

## \*\*\*Section 8-Exposure Controls/Personal Protection\*\*\*

### Component Exposure Limits

#### Methane (74-82-8)

ACGIH: 1000 ppm TWA (listed under Aliphatic hydrocarbon gases: Alkane C1-4)

#### Ethane (74-84-0)

ACGIH: 1000 ppm TWA (listed under Aliphatic hydrocarbon gases: Alkane C1-4)

### Engineering Measures

Use adequate ventilation to keep gas and vapor concentrations of this product below occupational exposure and flammability limits, particularly in confined spaces. Use explosion-proof equipment and lighting.

### Personal Protective Equipment: Respiratory

Use a NIOSH approved positive-pressure, supplied air respirator with escape bottle or self-contained breathing apparatus (SCBA) for gas concentrations above occupational exposure limits, for potential for uncontrolled release, if exposure levels are not known, or in an oxygen-deficient atmosphere. CAUTION: Flammability limits (i.e., explosion hazard) should be considered when assessing the need to expose personnel to concentrations requiring respiratory protection.

### Personal Protective Equipment: Hands

Use cold-impervious, insulating gloves where contact with pressurized gas may occur.

### Personal Protective Equipment: Eyes

Where there is a possibility of pressurized gas contact, wear splash-proof safety goggles and faceshield.

### Personal Protective Equipment: Skin and Body

Where contact with pressurized gas may occur, wear apron and faceshield.

## \*\*\*Section 9-Physical & Chemical Properties\*\*\*

<b>Appearance:</b>	Colorless	<b>Odor:</b>	Distinctive "natural gas"
<b>Physical State:</b>	Gas	<b>pH:</b>	ND
<b>Vapor Pressure:</b>	40 atm @ -187 °F (-86 °C)	<b>Vapor Density:</b>	0.6
<b>Boiling Point:</b>	-259°F (-162°C)	<b>Melting Point:</b>	ND
<b>Solubility (H2O):</b>	3.5%	<b>Specific Gravity:</b>	0.4 @ -263 °F (-64°C)
<b>Evaporation Rate:</b>	ND	<b>VOC:</b>	ND
<b>Octanol/H2O Coeff.:</b>	ND	<b>Flash Point:</b>	Flammable Gas
<b>Flash Point Method:</b>	NA	<b>Upper Flammability Limit (UFL):</b>	13-17
<b>Lower Flammability Limit (LFL):</b>	3.8-6.5	<b>Burning Rate:</b>	ND
<b>Auto Ignition:</b>	900-1170°F (482-632°C)		

## \*\*\*Section 10-Chemical Stability & Reactivity Information\*\*\*

### Chemical Stability

This is a stable material.

### Hazardous Reaction Potential

Will not occur.

### Conditions to Avoid

Keep away from strong oxidizers, ignition sources and heat.

### Incompatible Products

Strong oxidizers

### Hazardous Decomposition Products

Carbon monoxide, carbon dioxide and non-combusted hydrocarbons (smoke)

## \*\*\*Section 11-Toxicological Information\*\*\*

### Acute Toxicity

#### A: General Product Information

Methane and ethane, the main components of natural gas, are considered practically inert in terms of physiological effects. At high concentrations these materials act as simple asphyxiants and may cause death due to lack of oxygen.

#### B: Component Analysis - LD50/LC50

##### Methane (74-82-8)

Inhalation LC50 Mouse 326 g/m<sup>3</sup> 2 h

##### Ethane (74-84-0)

Inhalation LC50 Rat 658 mg/L 4 h

### Potential Health Effects: Skin Corrosion Property/Stimulativeness

Vapors are not irritating. Direct contact to skin or mucous membranes with pressurized vapor may cause freeze burns and frostbite. Signs of frostbite include a change in the color of the skin to gray or white, possibly followed by blistering. Skin may become inflamed and painful.

### Potential Health Effects: Eye Critical Damage/ Stimulativeness

Vapors are not irritating. However, contact with liquid or cold vapor may cause frostbite, freeze burns, and permanent eye damage.

### Potential Health Effects: Ingestion

Risk of ingestion is extremely unlikely.

### Potential Health Effects: Inhalation

This product is considered to be non-toxic by inhalation. Inhalation of high concentrations may cause central nervous system depression such as dizziness, drowsiness, headache, and similar narcotic symptoms, but no long-term effects. Numbness, a "chilly" feeling, and vomiting have been reported from accidental exposures to high concentrations. This product is a simple asphyxiant. In high concentrations it will displace oxygen from the breathing atmosphere, particularly in confined spaces. Signs of asphyxiation will be noticed when oxygen is reduced to below 16% and may occur in several stages. Symptoms may include rapid breathing and pulse rate, headache, dizziness, visual disturbances, mental confusion, incoordination, mood changes, muscular weakness, tremors, cyanosis, narcosis, and numbness of the extremities. Unconsciousness leading to central nervous

system injury and possibly death will occur when the atmospheric oxygen concentration is reduced to about 6% to 8% or less.

WARNING: The burning of any hydrocarbon as a fuel in an area without adequate ventilation may result in hazardous levels of combustion products, including carbon monoxide, and inadequate oxygen levels, which may cause unconsciousness, suffocation, and death.

### **Respiratory Organs Sensitization/Skin Sensitization**

This product is not reported to have any skin sensitization effects.

### **Generative Cell Mutagenicity**

This product is not reported to have any mutagenic effects.

### **Carcinogenicity**

#### **A: General Product Information**

This product is not reported to have any carcinogenic effects.

#### **B: Component Carcinogenicity**

None of this product's components are listed by ACGIH, IARC, OSHA, NIOSH, or NTP.

### **Reproductive Toxicity**

This product is not reported to have any reproductive toxicity effects.

### **Specified Target Organ General Toxicity: Single Exposure**

This product may cause damage to heart.

### **Specified Target Organ General Toxicity: Repeated Exposure**

This product is not reported to have any specific target organ repeat effects.

### **Aspiration Respiratory Organs Hazard**

This product is not reported to have any aspiration hazard effects.

## **\*\*\*Section12-EcologicalInformation\*\*\***

### **Ecotoxicity**

#### **A: General Product Information**

Keep out of sewers, drainage areas, and waterways. Report spills and releases, as applicable, under Federal and State regulations.

#### **B: Component Analysis - Ecotoxicity - Aquatic Toxicity**

No ecotoxicity data are available for this product's components.

### **Persistence/Degradability**

No information available.

### **Bioaccumulation**

No information available.

## **\*\*\*Section13-DisposalConsiderations\*\*\***

### **Mobility in Soil**

No information available.

## Waste Disposal Instructions

See Section 7 for Handling Procedures. See Section 8 for Personal Protective Equipment recommendations.

## Disposal of Contaminated Containers or Packaging

Dispose of contents/container in accordance with local/regional/national/international regulations.

### \*\*\*Section14-TransportationInformation\*\*\*

## DOT Information

**Shipping Name:** Natural Gas, Compressed

**UN #:** 1971 **Hazard Class:** 2.1

**Placard:**



### \*\*\*Section15-RegulatoryInformation\*\*\*

## Regulatory Information

### Component Analysis

None of these products components are listed under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), or CERCLA (40 CFR 302.4).

### SARA Section 311/312 – Hazard Classes

Acute Health; Chronic Health; Fire; Sudden Release of Pressure; Reactive

### SARA SECTION 313 - SUPPLIER NOTIFICATION

This product does not contain any chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act (EPCRA) of 1986 and of 40 CFR 372:

### Component Analysis - State

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	CA	MA	MN	NJ	PA	RI
Methane	74-82-8	No	Yes	Yes	Yes	Yes	No
Ethane	74-84-0	No	Yes	Yes	Yes	Yes	No

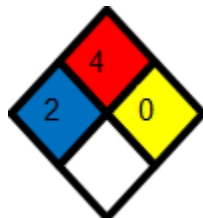
### Component Analysis - WHMIS IDL

No components are listed in the WHMIS IDL.

Component	CAS#	TSCA	CAN	EEC
Naturalgas,dried	68410-63-9	Yes	DSL	EINECS
Methane	74-82-8	Yes	DSL	EINECS
Ethane	74-84-0	Yes	DSL	EINECS

### Additional Regulatory Information

\*\*\* Section 16 - Other Information \*\*\*



**NFPA® Hazard Rating**

Health	2
Fire	4
Reactivity	0

**HMIS® Hazard Rating**

Health	2	Moderate
Fire	4	Severe
Physical	0	Minimal * Chronic

### Key/Legend

EPA = Environmental Protection Agency; TSCA = Toxic Substance Control Act; ACGIH = American Conference of Governmental Industrial Hygienists; IARC = International Agency for Research on Cancer; NIOSH = National Institute for Occupational Safety and Health; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration., NJTSR = New Jersey Trade Secret Registry.

### Literature References

None

### Other Information

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