

# Safety Data Sheet

<b>Section 1: Identification of the substance or mixture and of the supplier</b>	<b>Rev: 02/2022</b>
--	---------------------

Product Name:	Natural Gas
Synonyms/Other Means of Identification:	Residue Gas Processed Gas Natural Gas, Dry CNG when Compressed
Intended Use:	Fuel
Supplier:	Piedmont Natural Gas Company, Inc. 4720 Piedmont Row Drive Charlotte, NC 28210
Emergency Health and Safety Number:	Chemtrec: 800-424-9300 (24 Hours)
SDS Information Phone:	800.752.7504
URL:	<a href="http://www.piedmontng.com">www.piedmontng.com</a> ; <a href="http://www.duke-energy.com">www.duke-energy.com</a>
CASRN:	68410-63-9

<b>Section 2: Hazard(s) Identification</b>	<b>Rev: 02/2022</b>
--	---------------------

<p><b>EMERGENCY OVERVIEW</b> <b>DANGER!</b> <b>EXTREMELY FLAMMABLE GAS – MAY CAUSE FLASH FIRE OR EXPLOSION!!</b></p> <p>Keep away from heat, sparks, flames or other sources of ignition (e.g., static electricity, pilot lights, mechanical / electrical equipment).</p>	
---	--

GHS Classification

H220 – Flammable gases – Category 1  
H280 – Gases under pressure – Compressed gas

GHS Label Elements



**Signal Word**  
DANGER

**Hazard Statements**

Extremely flammable gas  
Contains gas under pressure; may explode if heated Gas  
may reduce oxygen in confined spaces  
Sudden release of compressed gas may present a frostbite hazard

**Precautionary Statement(s):**

**Prevention:** 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.  
P410, P403 – Protect from sunlight. If containerized, store in a well-ventilated place. 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.

**Storage:** Protect from containerized natural gas from sunlight. Store well in a well-ventilated place. Store locked-up

**WARNING:** This product is a simple asphyxiant and fire hazard. 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, uncoordinated movement, 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. The lower explosive limit is 5 to 15%.

**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.

**WARNING:** Compressed natural gas is typically stored in natural gas cylinders. These cylinders can be subject to 29 CFR 1910.101 – Compressed Gases (general requirements). Compressed gases may be hazardous because they are:

- under high pressure: cylinders can rupture, or a valve break off, turning the cylinder into a rocket;
- flammable: Natural gas is a flammable gas.
- an asphyxiant: Natural gas can displace oxygen for breathing, causing asphyxiation.
- cryogenic: Natural gas can cause frostbite or burns if they contact the skin when the gas escapes rapidly. Special tools may be required to handle compressed natural gas.

<b>Section 3: Composition / Information on Ingredients</b>	<b>Rev: 02/2022</b>
--	---------------------

Components	CAS No.	Mole %	Exposure Limits	
			ACGIH TLV (ppm)	OSHA PEL (ppm)
<b>Base Gas:</b>				
Methane	74-82-8	70-98	None established by OSHA or ACGIH Simple asphyxiant; exposure limited by oxygen and flammability	
<b>Balance Gases:</b>				
Carbon Dioxide	124-38-9	0.1-3	5,000 TWA	5,000 TWA
Ethane	74-84-0	0.5-10	None established by OSHA or ACGIH Simple asphyxiant; exposure limited by oxygen and flammability	
Nitrogen	7727-37-9	1-4	1,000 TWA	---
Propane	74-98-6	0.1-20	2,500 TWA	1,000 TWA

NOTE: No permissible exposure limits (PEL) or threshold limit values (TLV) exist for natural gas. The above listing is a summary of the gases in natural gas which can be found at concentrations greater than 1 mole %. Because natural gas is a natural product, composition can vary greatly. Mercaptan products are added as an odorant for safety detection purposes.

**Eye Contact**

If the eyes are affected, flush them with tepid water for at least 15 minutes. In case of freeze burn cover eyes to protect from light. Seek immediate medical attention.

**Skin Contact**

You should obtain medical assistance as soon as possible when cold natural gas contacts your skin. Immediately upon exposure, the frozen skin appears waxy and yellow and the burn usually is not painful. Then, it painfully swells and blisters while the skin defrosts. This is a sign of frostbite (or freeze burns) which requires IMMEDIATE medical attention. Immediately follow these first aid procedures until you get medical assistance.

- Take the victim away from the hazard.
- Any clothing that may interfere with the circulation of blood to the frozen tissues should be removed in a slow, careful manner to prevent salvageable skin from being pulled off.
- Do NOT rub or massage the affected parts of the body. Rubbing may further damage the tissue.
- Immerse the affected area in a warm water bath not to exceed 105 °F or exposure to warm air.
- The re-warming, or thawing, of affected area(s) should be done gradually. It may take up to 60 minutes to thaw the affected area(s) and bring back the natural color of the skin.

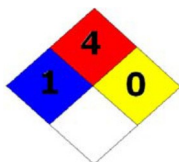
If the body has been exposed to natural gas, the tissues should be restored to normal body temperature by running warm liquid (108° F) over the affected part. Water should never be more than 112° F and the affected part should not be rubbed at any time. This can cause further damage to the area. The victim should get emergency care as quickly as possible to minimize further damage and for damage assessment. First aid is not normally required. However, it is good practice to wash any chemical from the skin.

**Inhalation (Breathing)**

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. Artificial respiration should be applied if breathing has stopped. If the person is having difficulty breathing, oxygen should be supplied. Emergency medical help should be summoned.

**General Fire Hazards:**

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. Container may explode in heat or fire.

**NEPA 704 Hazard Class**

**Health: 1      Flammability: 4      Instability: 0**  
 (0-Minimal, 1-Slight, 2-Moderate, 3-Serious, 4-Severe)

**Unusual Fire & Explosion Hazards:** Extremely flammable. This material can be ignited by heat, sparks, flames, or other sources of ignition (e.g., static electricity, pilot lights, mechanical/electrical equipment, and electronic devices such as cell phones, computers, calculators, and pagers which have not been certified as intrinsically safe). Vapors may travel considerable distances to a source of ignition where they can ignite, flash back, or explode. May create vapor/air explosion hazard indoors, in confined spaces,

outdoors, or in sewers. If container is not properly cooled, it can rupture in the heat of a fire. Contents under pressure.

**Extinguishing Media:** Class B fire extinguishers are preferred but a dry chemical or carbon dioxide extinguisher could be used. If using a carbon dioxide extinguisher in a confined space, use caution because a carbon dioxide can displace oxygen.

**Fire Fighting Instructions:** Fire 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 isolate and extinguish the fire.

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.

**Hazardous Combustion Products:** Combustion may yield smoke, carbon monoxide, and other products of incomplete combustion (smoke). Oxides of nitrogen and sulfur may also be formed.

**See Section 9 for Flammable Properties including Flash Point and Flammable (Explosive) Limits**

<b>Section 6: Accidental Release Measures</b>	<b>Rev: 02/2022</b>
---	---------------------

#### **Recovery and Neutralization**

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

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

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.

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

Extremely flammable. During releases, pipe may become cold and cause frostbite.

#### **Environmental Precautions**

Stop spill/release if it can be done safely. Water spray may be useful in minimizing or dispersing vapors.

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

Notify relevant authorities in accordance with all applicable regulations including reporting quantities to Emergency Response Centers as necessary. Recommended measures are based on the most likely release scenarios for this material; however local conditions and regulations may influence or limit the choice of appropriate actions to be taken.

**Precautions for safe handling**

Keep away from ignition sources such as heat/sparks/open flame – No smoking. Take precautionary measures against static discharge. Use good personal hygiene practices and wear appropriate personal protective equipment (see section 8).

Contents under pressure. Gas can accumulate in confined spaces and limit oxygen available for breathing. Use only with adequate ventilation. The use of explosion-proof electrical equipment is recommended and may be required (see appropriate fire codes).

Refer to NFPA-70 and/or API RP 2003 for specific bonding/grounding requirements. Electrostatic charge may accumulate and create a hazardous condition when handling or processing this material. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Do not enter confined spaces such as tanks or pits without following proper entry procedures such as ASTM D-4276 and 29 CFR 1910.146. Cold burns may occur during filling operations. Containers and delivery lines may become cold enough to present cold burn hazard.

The use of hydrocarbon fuel in an area without adequate ventilation may result in hazardous levels of incomplete combustion products (e.g., carbon monoxide, oxides of sulfur and nitrogen, benzene and other hydrocarbons) and/or dangerously low oxygen levels.

**Conditions for safe storage**

Keep container(s) tightly closed and properly labeled. Use and store this material in cool, dry, well ventilated areas away from heat, direct sunlight, hot metal surfaces, and all sources of ignition. Store only in approved containers.

Post area "No Smoking or Open Flame." Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage. Outdoor or detached storage is preferred. Indoor storage should meet OSHA standards and appropriate fire codes.

"Empty" containers retain residue and may be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury or death. Avoid exposing any part of a compressed-gas cylinder to temperatures above 125° F(51.6° C). "Empty" gas cylinders should be stored outdoors or in well ventilated storerooms at no lower than ground level and should be quickly removable in an emergency.

**Note:** State, local or other agencies or advisory groups may have established more stringent limits. Consult an industrial hygienist or similar professional, or your local agencies, for further information.

**Engineering controls**

If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure limits, additional engineering controls may be required.

**Eye/Face Protection**

The use of eye/face protection is not normally required; however, good industrial hygiene practice suggests the use of eye protection that meets or exceeds ANSI Z.87.1 whenever working with chemicals.

**Skin/Hand Protection**

The use of skin protection is not normally required; however, good industrial hygiene practice suggests the use of gloves or other appropriate skin protection whenever working with chemicals.

## Respiratory Protection

A NIOSH approved, self-contained breathing apparatus (SCBA) or equivalent operated in a pressure demand or other positive pressure mode should be used in situations of oxygen deficiency (oxygen content less than 19.5 percent), unknown exposure concentrations, or situations that are immediately dangerous to life or health (IDLH).

A respiratory protection program that meets or is equivalent to OSHA 29 CFR 1910.134 and ANSI Z88.2 should be followed whenever workplace conditions warrant a respirator's use.

**Suggestions provided in this section for exposure control and specific types of protective equipment are based on readily available information. Users should consult with the specific manufacturer to confirm the performance of their protective equipment. Specific situations may require consultation with industrial hygiene, safety, or engineering professionals.**

<b>Section 9: Physical and Chemical Properties</b>	<b>Rev: 02/2022</b>
--	---------------------

**Note:** Unless otherwise stated, values are determined at 20° C (68° F) and 760 mm Hg (1 atm). Data represent typical values and are not intended to be specifications.

Appearance:	Colorless gas. Cloud vapor cloud may be white but the lack of visible gas cloud does not indicate absence of gas
Physical Form:	Gas
Odor:	Slight hydrocarbon <sup>1</sup>
Odor Threshold:	No data
pH:	Not applicable
Vapor Density (air=1):	0.5
Initial Boiling Point/Range:	No data
Melting/Freezing Point:	No data
Solubility in Water:	Slight
Partition Coefficient (n-octanol/water) (Kow):	No data
Percent Volatile:	100%
Flammability (solid, gas):	Gas, Extremely Flammable
Evaporation Rate (nBuAc=1):	No data
Flash Point:	-299° F / -184° C
Test Method:	(estimate)
Lower Explosive Limits (vol % in air):	5%
Upper Explosive Limits (vol % in air):	15%
Auto-ignition Temperature:	900° F / 482.2° C

<sup>1</sup>Ethyl Mercaptan (an odorant) is added to natural gas. Mercaptan is typically in the range of 0.5% to 1%.

<b>Section 10: Stability and Reactivity</b>	<b>Rev: 02/2022</b>
---	---------------------

### Chemical Stability

Stable under normal ambient and anticipated conditions of use.

### Conditions to Avoid

Avoid all possible sources of ignition. Heat will increase pressure in a storage tank or pipe.

### Materials to Avoid (Incompatible Materials)

Avoid contact with acids, aluminum chloride, chlorine, chlorine dioxide, halogens and oxidizing agents.

### Hazardous Decomposition Products

Not anticipated under normal conditions of use.

## Hazardous Polymerization

Not known to occur.

<b>Section 11: Toxicological Information</b>	<b>Rev: 02/2022</b>
--	---------------------

### Information on Toxicological Effects of Substance/Mixture

Acute Toxicity	Hazard	LC50 / LD50 Data	Additional Information
Methane (74-82-8)	Inhalation	LC50 Mouse 326 g/m <sup>3</sup> 2h	
Ethane (74-84-0)	Inhalation	LC50 Rate 658 mg/L 4h	
Skin absorption	Skin absorption is not anticipated		Not applicable
Ingestion (Swallowing)	Ingestion is not anticipated		Not applicable

### Aspiration Hazard

Not applicable.

### Skin Corrosion/Irritation

Skin exposure is not anticipated.

### Serious Eye Damage/Irritation

Not expected to be irritating.

### Signs and Symptoms

Light hydrocarbon gases are simple asphyxiants and can cause anesthetic effects at high concentrations. Symptoms of overexposure, which are reversible if exposure is stopped, can include shortness of breath, drowsiness, headaches, confusion, decreased coordination, visual disturbances and vomiting. Continued exposure can lead to hypoxia (inadequate oxygen), rapid breathing, cyanosis (bluish discoloration of the skin), numbness of the extremities, unconsciousness and death.

### Skin Sensitization

Skin contact is not anticipated.

### Respiratory Sensitization

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. Not expected to be a respiratory sensitizer.

### Specific Target Organ Toxicity (Single Exposure)

Not expected to cause organ effects from single exposure.

**Specific Target Organ Toxicity (Repeated Exposure)**

Not expected to cause organ effects from repeated exposure.

**Carcinogenicity**

Not expected to cause cancer. This substance is not listed as a carcinogen by IARC, NTP or OSHA.

**Germ Cell Mutagenicity**

Not expected to cause heritable genetic effects.

**Reproductive Toxicity**

Not expected to cause reproductive toxicity.

**Other Comments**

High concentrations may reduce the amount of oxygen available for breathing, especially in confined spaces. Hypoxia (inadequate oxygen) during pregnancy may have adverse effects on the developing fetus.

<b>Section 12: Ecological Information</b>	<b>Rev: 02/2022</b>
---	---------------------

**Toxicity**

Petroleum gases will readily evaporate from the surface and would not be expected to have significant adverse effects in the aquatic environment. Classification: No classified hazards.

**Persistence and Degradability**

The hydrocarbons in this material are expected to be inherently biodegradable. In practice, hydrocarbon gases are not likely to remain in solution long enough for biodegradation to be a significant loss process. Hydrogen sulfide, if present in refinery gas streams, will be rapidly oxidized in water and insoluble sulfides precipitated from water when metallic radicals are present.

**Bioaccumulative Potential**

Not regarded as having the potential to bioaccumulate.

**Mobility in Soil**

Due to the extreme volatility of petroleum gases, air is the only environmental compartment in which they will be found. In air, these hydrocarbons undergo photodegradation by reaction with hydroxyl radicals with half-lives ranging from 3.2 days for n-butane to 7 days for propane.

**Other Adverse Effects:** None anticipated.

<b>Section 13: Disposal Considerations</b>	<b>Rev: 02/2022</b>
--	---------------------

This material is a gas and would not typically be managed as a waste. If stored in containers, dispose of in accordance to local, state and federal laws and regulations.

<b>Section 14: Transport Information</b>	<b>Rev: 02/2022</b>
--	---------------------

**U.S. Department of Transportation (DOT)****Shipping Description:**

UN1971, Natural gas, compressed, 2.1

**Non-Bulk Package Marking:**

Natural gas, compressed, UN1971

**Non-Bulk Package Labeling:**

Flammable gas

**Bulk Package/Placard Marking:**

Flammable gas / 1971



**Packaging - References:** 49 CFR 173.306; 173.302; 173.302  
(Exceptions; Non-bulk; Bulk)  
**Hazardous Substance:** None  
**Emergency Response Guide:** 115  
**Note:** Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not applicable

<b>Section 15: Regulatory Information</b>	<b>Rev: 02/2022</b>
---	---------------------

**CERCLA/SARA - Section 302 Extremely Hazardous Substances and TPQs (in pounds):**

This material does not contain any chemicals subject to the reporting requirements of SARA 302 and 40 CFR 372.

**CERCLA/SARA - Section 311/312 (Title III Hazard Categories)**

Acute Health:	Yes
Chronic Health:	No
Fire Hazard:	Yes
Pressure Hazard:	Yes
Reactive Hazard:	No

**CERCLA/SARA - Section 313 and 40 CFR 372:**

This material does not contain any chemicals subject to the reporting requirements of SARA 313 and 40 CFR 372.

**EPA (CERCLA) Reportable Quantity (in pounds):**

EPA's Petroleum Exclusion applies to this material - (CERCLA 101(14)).

<b>Section 16: Other Information</b>	<b>Rev: 02/2022</b>
--------------------------------------	---------------------

<b>Date of Issue:</b>	February 14, 2022
<b>Status:</b>	FINAL
<b>Previous Issue Date:</b>	September 2016
<b>Revised Sections or Basis for Revision:</b>	Periodic Review

CASRN = Chemical Abstracts Service Registry Number;  
 CEILING = Ceiling Limit (15 minutes);  
 CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act;  
 EPA = Environmental Protection Agency;  
 GHS = Globally Harmonized System;  
 IARC = International Agency for Research on Cancer;  
 INSHT = National Institute for Health and Safety at Work;  
 IOPC = International Oil Pollution Compensation;  
 LEL = Lower Explosive Limit;  
 NE = Not Established;  
 NFPA = National Fire Protection Association;  
 NTP = National Toxicology Program;  
 OSHA = Occupational Safety and Health Administration;  
 PEL = Permissible Exposure Limit (OSHA);  
 SARA = Superfund Amendments and Reauthorization Act;  
 STEL = Short Term Exposure Limit (15 minutes);  
 TLV = Threshold Limit Value (ACGIH);  
 TWA = Time Weighted Average (8 hours);  
 UEL = Upper Explosive Limit;

**Disclaimer:**

The information presented in this Safety Data Sheet is based on data believed to be accurate and reliable as of the date this Safety Data Sheet was prepared. HOWEVER, NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY OR REPRESENTATION WHATSOEVER IS EXPRESSED OR IS TO BE IMPLIED REGARDING THE ACCURACY, RELIABILITY OR COMPLETENESS OF THE INFORMATION PROVIDED ABOVE, THE RESULTS TO BE OBTAINED FROM THE USE OF THIS INFORMATION OR THE PRODUCT, THE SAFETY OF THIS PRODUCT, OR THE HAZARDS RELATED TO ITS USE OR NON-USE. No responsibility is assumed for any loss, damage or injury resulting from abnormal use or from any failure to adhere to recommended practices. The information provided above, and the product, are furnished on the condition that the person(s) receiving them shall be responsible for making their own determination as to the suitability of the product for their particular purpose and on the condition that they assume the risk of their use. Information presented herein has been compiled from sources considered to be dependable and is accurate and reliable to the best of the Company's knowledge and belief but is not guaranteed to be so. Since conditions or methods of use, handling and storage are beyond the Company's control, the Company does not assume responsibility and expressly disclaims any liability for loss, damage, expense or injury to persons arising out of or in any way connected with such use, handling and/or storage. The Company assumes no responsibility and expressly disclaims any liability for loss, damage, expense or injury to persons caused by the abnormal use of the material, even if reasonable safety procedures are followed. Furthermore, user assumes the risk in their use of the material.