

## Safety Data Sheet

### Section 1: Identification

**Product Name:** Natural Gas

**Recommended Use:** Fuel

**Manufacturer:** Validus Energy II  
1530 16th St Mall,  
Denver, CO 80202  
(833) 907-1848 (general)  
1-877-615-7787 (emergency)

**Emergency Telephone Number:** ChemTrec: (800) 424-9300 (North America)

### Section 2: Hazard Identification

**Classification:**

- Flammable Liquids 1
- Gases under pressure

**Label Elements:**

**DANGER**



**Hazard Statements:**

- Extremely flammable gas.
- Contains gas under pressure. May explode if heated.
- Gas may reduce oxygen in confined spaces.

**Precautionary Statements:**

**Prevention**

- Keep away from heat, sparks, open flames and/or hot surfaces - No smoking.

**Response**

- Leaking gas fire: Do not extinguish, unless leak can be stopped safely.

**Storage/Disposal**

- Store in a well-ventilated place. Protect from extreme heat.
- Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

**Other information:**



**NFPA 704 Hazard Class**

Health: 1  
Flammability: 4  
Instability: 0

(0-Minimum, 1-Slight, 2-Moderate, 3-Serious, 4-Severe)

**HMIS Hazard Rating**

Health	1
Flammability	4
Physical Hazard	0

(0-Minimum, 1-Slight, 2-Moderate, 3-Serious, 4-Severe)

**Section 3: Composition/Information on Ingredients**

Component	CAS Number	Concentration
Natural Gas	8006-14-2	100%
Ethyl Mercaptan	75-08-1	trace

All concentrations are percent by weight unless ingredient is gas. Gas concentrations are in percent by volume.

Crude oil, natural gas and natural gas condensate can contain minor amounts of sulfur, nitrogen and oxygen containing organic compounds as well as trace amounts of heavy metals like mercury, arsenic, nickel, and vanadium. Composition can vary depending on the source of crude.

**Synonyms:** Residue Gas

**Section 4: First-Aid Measures**

- Inhalation:** Move victim to fresh air. Administer oxygen if breathing is difficult. Give artificial respiration if victim is not breathing. If signs/symptoms continue, get medical attention.
- Skin:** Liquefied gases may cause cryogenic burns or injury. Treat burned or frostbitten skin by flushing or immersing the affected area(s) in lukewarm water. Do not rub affected area. Do not remove clothing that adheres due to freezing. After sensation has returned to the frostbitten skin, keep skin warm, dry, and clean. If blistering occurs, apply a sterile dressing. Seek immediate medical attention.
- Eye:** In case of contact with substance, immediately flush eyes with running water for at least 20 minutes. If eye irritation persists: Get medical advice/attention.
- Ingestion:** Not expected under normal conditions due to gaseous state.
- Most Important Symptoms and Effects, both Acute and Delayed:** Refer to Section 11 - Toxicological Information.

**Notes to Physician:** All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

## Section 5: Fire-Fighting Measures

**Suitable Extinguishing Media:** Dry chemical or carbon dioxide is recommended.

**Unsuitable Extinguishing Media:** Do not extinguish a leaking gas flame unless absolutely necessary. Spontaneous/explosive re-ignition may occur. Extinguish any other fire.

**Unusual Fire and Explosion Hazards:** Closed containers may be under pressure and can explode due to buildup of pressure when exposed to extreme heat. Caution - Material is extremely flammable! Do not use or store near heat or ignition source.

**Hazardous Combustion Products:** Combustion may yield smoke, carbon monoxide, and other products of incomplete combustion. Hydrogen sulfide and oxides of nitrogen and sulfur may also be formed.

**Advice for Firefighters:** Structural firefighters' protective clothing will only provide limited protection. Wear positive pressure self-contained breathing apparatus (SCBA). Move containers from fire area if you can do it without risk. LARGE FIRES: Cool containers with flooding quantities of water until well after fire is out.

## Section 6: Accidental Release Measures

**Personal Precautions:** Extremely flammable. Spillages of liquid product will create a fire hazard and may form an explosive atmosphere. Keep all sources of ignition and hot metal surfaces away from spill/release if safe to do so. The use of explosion-proof electrical equipment is recommended. Beware of accumulation of gas in low areas or contained areas, where explosive concentrations may occur. Prevent from entering drains or any place where accumulation may occur.

**Emergency Procedures:** Ventilate area and allow to evaporate. Stay upwind and away from spill/release. Avoid direct contact with material. For large spillages, notify persons downwind of the spill/release, isolate immediate hazard area and keep unauthorized personnel out. Wear appropriate protective equipment, including respiratory protection.

**Environmental Precautions:** Stop spill/release if it can be done safely. Water spray may be useful in minimizing or dispersing vapors. If spill occurs on water notify appropriate authorities and advise shipping of any hazard.

**Methods for Containment and Clean-up:** Notify relevant authorities in accordance with all applicable regulations. Recommended measures are based on the most likely spillage scenarios for this material; however local conditions and regulations may influence or limit the choice of appropriate actions to be taken.

## Section 7: Handling and Storage

### Precautions for Safe Handling:

Use only with adequate ventilation. Keep away from heat, sparks, and flame. All equipment used when handling the product must be grounded. Dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Wear appropriate personal protective equipment, avoid direct contact. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames.

**Conditions for Safe Storage:** Store in a cool/low-temperature, well-ventilated dry place away from heat and ignition sources. Keep away from incompatible materials.

## Section 8: Exposure Controls/Personal Protection

Component	ACGIH	NIOSH	OSHA	Other
Natural Gas	TWA: 1000 ppm as Aliphatic Hydrocarbons C1-C4			
Ethyl Mercaptan	TWA: 0.5 ppm	TWA: 0.5 ppm TWA: 1.3 mg/m <sup>3</sup>	TWA: 10 ppm	

### Engineering Measures/Controls:

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

### 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).

### Eye/Face Protection:

Wear chemical splash safety goggles.

### Skin/Body 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. Wear thermal insulating gloves and face shield or eye protection when working with materials that present thermal hazards (hot or cold).

### Environmental Exposure Controls:

Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways. Follow best practice for site management and disposal of waste.

## Section 9: Physical and Chemical Properties

<b>Physical Form:</b>	Gas
<b>Appearance:</b>	Clear gas
<b>Color:</b>	Colorless
<b>Odor:</b>	Odorless unless an odorant is added
<b>Odor Threshold:</b>	No data available
<b>Boiling Point:</b>	-259°F (-162°C)
<b>Melting Point:</b>	No data available
<b>Decomposition Temperature:</b>	No data available
<b>pH:</b>	No data available
<b>Specific Gravity (water=1):</b>	<1
<b>Water Solubility:</b>	Negligible
<b>Viscosity:</b>	No data available
<b>Explosive Properties:</b>	No data available
<b>Oxidizing Properties:</b>	No data available
<b>Vapor Pressure:</b>	No data available
<b>Vapor Density (air=1):</b>	0.6
<b>Evaporation Rate (water=1):</b>	<0.1
<b>VOC (Vol.):</b>	No data available
<b>Flash Point (TCC):</b>	<0°F (-18°C)
<b>UEL:</b>	17.0%
<b>LEL:</b>	3.8%
<b>Autoignition:</b>	800°F (426°C)
<b>Flammability (solid, gas):</b>	No data available
<b>Octanol/Water Partition Coefficient:</b>	No data available

## Section 10: Stability and Reactivity

<b>Reactivity:</b>	No dangerous reaction known under conditions of normal use.
<b>Chemical Stability:</b>	Stable under normal temperatures and pressures.
<b>Possibility of Hazardous Reactions:</b>	Hazardous polymerization will not occur.
<b>Conditions to Avoid:</b>	Extreme temperatures, open flames, other ignition sources.
<b>Incompatible Materials:</b>	Strong oxidizers, strong acids.
<b>Hazardous Decomposition Products:</b>	Under fire conditions, oxides of carbon, sulfur, hydrocarbons, vapors, and smoke may be produced.

## Section 11: Toxicological Information

Components	CAS Number	Acute Toxicity
Natural Gas (100%)	8006-14-2	NDA
Ethyl Mercaptan (trace)	75-08-1	Inhalation-Rat LC50 : 4420 ppm 4 Hour(s) Oral-Rat LD50: 682 mg/kg

### **Potential Health Effects**

<b>Inhalation:</b>	Unlikely to be harmful
<b>Skin:</b>	Skin contact is not anticipated.
<b>Eye:</b>	Not expected to be irritating.
<b>Ingestion:</b>	Ingestion is not anticipated
<b>Chronic (Delayed):</b>	No data available.
<b>Mutagenic Effects:</b>	Not expected to cause heritable genetic effects.
<b>Carcinogenic Effects:</b>	Not expected to cause cancer.
<b>Reproductive Effects:</b>	Not expected to cause heritable genetic effects.

### **Section 12: Ecological Information**

<b>Toxicity:</b>	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.
<b>Persistence and Degradability:</b>	Material data lacking.
<b>Bioaccumulative Potential:</b>	Material data lacking.
<b>Mobility in Soil:</b>	Material data lacking.
<b>Other Adverse Effects:</b>	No studies have been found.

### **Section 13: Disposal Considerations**

<b>Product Waste:</b>	Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.
<b>Packaging Waste:</b>	Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

## Section 14: Transport Information

	UN Number	UN Proper Shipping Name	Transport Hazard Class(es)	Packing Group
DOT	UN1971	Natural gas, compressed	2.1	NDA
TDG	UN1971	Natural gas, compressed	2.1	NDA
IMO/MDG	UN1971	Natural gas, compressed	2.1	NDA
IATA/ICAO	UN1971	Natural gas, compressed	2.1	NDA

**Special Precautions for User:** None specified.

**Transport in bulk according to Annex II Of MARPOL 73/78 and the IBC Code:** No data available.

## Section 15: Regulatory Information

### CERCLA/SARA – Section 311/312 (Title III Hazard Categories)

Acute Health: Yes

Chronic Health: No

Fire Hazard: Yes

Pressure Hazard: Yes

Reactive Hazard: No

### International Hazard Classification

#### **Canada:**

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

#### **WHMIS Hazard Class:**

A

B1

### National Chemical Inventories

Component	CAS Number	TSCA
Natural Gas	8006-14-2	Yes
Ethyl Mercaptan	75-08-1	Yes

## Section 16: Other Information

**Last Revision Date:** 23/September/2020

**Preparation Date:** 23/September/2020

**Other Information:** Version 1

**Disclaimer/Statement of Liability:** The information contained herein is believed to be accurate but is not warranted to be so. Data and calculations are based on information furnished by the manufacturer of the product and manufacturers of the components of the product. Users are advised to confirm in advance of need that information is current, applicable and suited to the circumstances of use. Vendor makes no warranties, expressed or implied, including, but not limited to, any implied warranty of merchantability or fitness for a particular purpose or course of performance or usage of trade. Vendor assumes no responsibility for injury to vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Furthermore, vendor assumes no responsibility for injury caused by abnormal use of this material even if reasonable safety procedures are followed. Any questions regarding this product should be directed to the manufacturer of the product as described in Section 1.

### Key to abbreviations

NDA = No data available

LD = Lethal Dose

TC = Toxic Concentration

D = Toxic Dose

ACGIH = American Conference of Governmental Industrial Hygiene

NIOSH = National Institute of Occupational Safety and Health

OSHA = Occupational Safety and Health Administration

STEL = Short Term Exposure Limits are based on 15-minute exposures

TWA = Time-Weighted Averages are based on 8h/day, 40h/week exposures