

Safety Data Sheet



Material Name: **Natural Gas, Compressed**

Location: **Stat1 Gunderson - Banks CNG Facility**

Section 1 – Product and Company Identification

Manufacturer Information

Ferus Natural Gas Fuels (CNG), LLC

Phone: 1-877-923-3787 (24 hr Emergency Number)

5812 Jefferson Lane

Williston, ND 58801

Preparation Date: November 1, 2014

Revision: 1

Expiry Date: **November 1, 2017**

Section 2 – Hazards Identification

GHS Classification:

Flammable Gas – Category 1

Acute Toxicity Inhalation – Category 3

Germ Cell Mutagenicity – Category 1B

Carcinogenicity – Category 1A

Reproductive Toxicity – Category 2

Hazardous to the Aquatic Environment – Acute Category 3

GHS LABEL ELEMENTS

Symbol(s)



Signal Word

Danger

Hazard Statements

Extremely flammable gas.

Toxic if inhaled.

May cause genetic defects.

May cause cancer.

Suspected of damaging fertility.

Harmful to aquatic life with long lasting effects.

Precautionary Statements

Prevention

Keep away from heat/sparks/open flames/hot surfaces. No smoking.

Avoid breathing fume/gas/mist/vapors.

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Wear protective gloves/protective clothing/eye protection/face protection.

Avoid release to the environment.

Safety Data Sheet



Material Name: **Natural Gas, Compressed**

Location: **Stat1 Gunderson - Banks CNG Facility**

Response

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

Eliminate all ignition sources if safe to do so.

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

If exposed or concerned: Get medical advice/attention.

Storage

Store in a well-ventilated place.

Disposal

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

Section 3 – Composition / Information on Ingredients

CAS#	Component	Percent
74-82-8	Methane	70 - 80
74-84-0	Ethane	15 - 20
74-98-6	Propane	3 - 5
7727-37-9	Nitrogen	1 - 3
75-28-5	Isobutane	1 - 2
109-66-0	Pentane	0 - 1
124-38-9	Carbon dioxide	0 - 1
110-54-3	Hexane	0 - 1

Section 4 – First Aid Measures

First Aid: Eyes

None needed as this is not an anticipated route of exposure for this product.

First Aid: Skin

None needed as this is not an anticipated route of exposure for this product.

First Aid: Ingestion

None needed as this is not an anticipated route of exposure for this product.

First Aid: Inhalation

Remove person to fresh air. If person is not breathing, ensure an open airway and provide artificial respiration. If breathing and heart beat have stopped, administer CPR. If necessary, provide additional oxygen once breathing is restored if trained to do so. Seek medical attention immediately.

Section 5 – Fire Fighting Measures

General Fire Hazards

See Section 9 for Flammability Properties.

Extremely flammable gas. Keep away from heat, sparks, flame and other ignition sources.

Hazardous Combustion Products

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

Extinguishing Media

Safety Data Sheet



Material Name: **Natural Gas, Compressed**

Location: **Stat1 Gunderson - Banks CNG Facility**

Stop the flow of gas and then use dry chemical, carbon dioxide, halon or water. The fire should not be extinguished unless flow of gas can be immediately stopped.

Unsuitable Extinguishing Media

None.

Fire Fighting Equipment/Instructions

Firefighters should wear full protective gear.

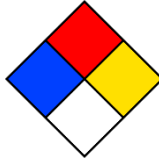
NFPA Ratings

Health (blue) – 2 (moderate)

Flammability (red) – 4 (extreme)

Reactivity (yellow) – 0 (least)

Other (white) – 0 (least)



Section 6 – Accidental Release Measures

Recovery and Neutralization

Stop the source of release if safe to do so.

Materials and Methods for Clean-Up

Released gas will disperse. Ventilate and test area before entering.

Emergency Measures

Evacuate nonessential personnel and remove or secure all ignition sources. Consider wind direction; stay upwind and uphill, if possible. Evaluate the direction of product travel, diking, sewers, etc. to confirm spill areas.

Personal Precautions and Protective Equipment

Response and clean-up crews must be properly trained and must utilize proper protective equipment (see Section 8).

Environmental Precautions

Avoid release to environment.

Prevention of Secondary Hazards

None.

Section 7 – Handling and Storage

Handling Procedures

Avoid breathing fumes.

Storage Procedures

Keep away from flame, sparks, excessive temperatures and open flame.

Incompatibilities

Keep away from strong oxidizers.

Section 8 – Exposure Controls / Personal Protection

Component Exposure Limits

Methane (74-82-8)

ACGIH: 1,000 ppm TWA (listed under Aliphatic hydrocarbon gases: Alkane C1-4)

Ethane (74-84-0)

ACGIH: 1,000 ppm TWA (listed under Aliphatic hydrocarbon gases: Alkane C1-4)

Safety Data Sheet



Material Name: **Natural Gas, Compressed**

Location: **Stat1 Gunderson - Banks CNG Facility**

Propane (74-98-6)

ACGIH: 1,000 ppm TWA (listed under Aliphatic hydrocarbon gases: Alkane C1-4)

OSHA: 1,000 ppm TWA; 1,800 mg/m³ TWA

NIOSH: 1,000 ppm TWA; 1,800 mg/m³ TWA

Pentane (109-66-0)

ACGIH: 600 ppm TWA (listed under Pentane, all isomers)

OSHA: 1,000 ppm TWA; 2,950 mg/m³ TWA

NIOSH: 120 ppm TWA; 350 mg/m³ TWA

610 ppm Ceiling (15 min); 1,800 mg/m³ Ceiling (15 min)

Isobutane (75-28-5)

ACGIH: 1,000 ppm TWA (listed under Aliphatic hydrocarbon gases: Alkane C1-4)

NIOSH: 800 ppm TWA; 1,900 mg/m³ TWA

Carbon dioxide (124-38-9)

ACGIH: 500 ppm TWA

30,000 ppm STEL

OSHA: 5,000 ppm TWA; 9,000 mg/m³ TWA

NIOSH: 5,000 ppm TWA; 9,000 mg/m³ TWA

30,000 ppm STEL; 54,000 mg/m³ STEL

Hexane (110-54-3)

ACGIH: 50 ppm TWA

Skin – potential significant contribution to overall exposure by the cutaneous route

OSHA: 500 ppm TWA; 1,800 mg/m³ TWA

NIOSH: 50 ppm TWA; 180 mg/m³ TWA

Engineering Measures

Use adequate ventilation to keep vapor concentrations of this product below occupational exposure and flammability limits, particularly in confined spaces.

Personal Protective Equipment: Respiratory

A NIOSH-approved air-purifying respirator with organic vapor cartridges or canister may be permissible under certain circumstances where airborne concentrations are or may be expected to exceed exposure limits or for odor or irritation. Protection provided by air-purifying respirators is limited.

Use Positive pressure, air-supplied respirator if there is a potential for uncontrolled release, exposure levels are not known, in oxygen-deficient atmospheres, or any other circumstance where an air-purifying respirator may not provide adequate protection.

Personal Protective Equipment: Hands

Where appropriate, wear proper personal protective equipment including flame retardant clothing to protect against burns.

Safety Data Sheet



Material Name: **Natural Gas, Compressed**

Location: **Stat1 Gunderson - Banks CNG Facility**

Personal Protective Equipment: Eyes

Use safety glasses with side shields.

Personal Protective Equipment: Skin and Body

Chemical protective clothing such as E.I. DuPont TyChem®, Saranex® or equivalent recommended based on degree of exposure. Note: The resistance of specific material may vary from product to product as well as with degree of exposure. Consult manufacturer specifications for further information.

Section 9 – Physical & Chemical Properties

Appearance:	Colorless	Odor:	Mild hydrocarbon
Physical State:	Gas	pH:	Not determined
Vapor Pressure:	Not determined	Density:	Not determined
Boiling Point:	Not determined	Melting Point:	Not determined
Solubility (H2O):	Negligible	Specific Gravity:	Not determined
Evaporation Rate:	Not determined	VOC:	Present
Octanol/H2O Coeff.:	Not determined	Flash Point:	-233 °F
Flash Point Method:	Calculated	Burning Rate:	Not determined
Lower Flammability Limit		Upper Flammability Limit	
(LFL):	<5% concentration	(UFL):	>15% concentration
Auto Ignition:	Not determined		

Section 10 – Chemical Stability & Reactivity Information

Chemical Stability

This is a stable material.

Hazardous Reaction Potential

Will not occur.

Conditions to Avoid

Avoid high temperatures, open flames, sparks, welding, smoking and other ignition sources.

Incompatible Products

Keep away from strong oxidizers.

Hazardous Decomposition Products

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

Section 11 – Toxicological Information

Acute Toxicity

Component Analysis – LD50/LC50

Methane (74-82-8)

Inhalation LC50 Mouse 326 g/m³-2hr

Ethane (74-84-0)

Inhalation LC50 Rat 658 mg/L-4hr

Propane (74-98-6)

Inhalation LC50 Rat 658 mg/L-4hr

Safety Data Sheet



Material Name: **Natural Gas, Compressed**

Location: **Stat1 Gunderson - Banks CNG Facility**

Pentane (109-66-0)

Inhalation LC50 Rat 364 g/m³-4hr; Dermal LD50 Rabbit 3,000 mg/kg; Oral LD50 Rat >2,000 mg/kg

Isobutane (75-28-5)

Inhalation LC50 Rat 658 mg/L-4hr

Hexane (110-54-3)

Inhalation LC50 Rat 48,000 ppm-4hr; Oral LD50 Rat 25 g/kg; Dermal LD50 Rabbit 3,000 mg/kg

Potential Health Effects: Skin Corrosion Property/Stimulativeness

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

Potential Health Effects: Eye Critical Damage/Stimulativeness

This product is not reported to have any eye irritation effects.

Potential Health Effects: Ingestion

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

Potential Health Effects: Inhalation

Toxic if inhaled.

Respiratory Organs Sensitization/Skin Sensitization

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

Generative Cell Mutagenicity

May cause genetic defects.

Carcinogenicity

A: General Product Information

May cause cancer.

B: Component Carcinogenicity

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

Reproductive Toxicity

Suspected of damaging fertility.

Specified Target Organ General Toxicity: Single Exposure

This product is not reported to have any specific target organ general toxicity single exposure effects.

Specified Target Organ General Toxicity: Repeated Exposure

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

Aspiration Respiratory Organs Hazard

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

*****Section 12 – Ecological Information*****

Ecotoxicity

A: General Product Information

Avoid release to the environment.

B: Component Analysis – Exotoxicity – Aquatic Toxicity

Pentane (109-66-0)

Test & Species

Conditions

Safety Data Sheet



Material Name: **Natural Gas, Compressed**

Location: **Stat1 Gunderson - Banks CNG Facility**

96 hr LC50 Oncorhynchus mykiss	9.87 mg/L
96 hr LC50 Pimephales promelas	11.59 mg/L
96 hr LC50 Lepomis macrochirus	9.99 mg/L
48 hr EC50 Daphnia magna	9.74 mg/L

Hexane (110-54-3)

Test & Species

		Conditions
96 hr LC50 Pimephales promelas	2.1-2.98 mg/L [flow-through]	
48 hr EC50 Daphnia magna	>1,000 mg/L	

Persistence/Degradability

No information available.

Bioaccumulation

No information available.

Mobility in Soil

No information available.

Section 13 – Disposal Considerations

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.

Section 14 – Transportation Information

DOT Information

Shipping Name: Natural Gas, Compressed
UN#: 1971
Hazard Class: 2.1



Section 15 – Regulatory Information

US Federal Regulations

Component Analysis - Federal

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65) and/or CERCLA (40 CFR 302.4).

Hexane (110-54-3)

CERCLA: 5,000 lb final RQ; 2,270 kg final RQ

State Regulations

Safety Data Sheet



Material Name: **Natural Gas, Compressed**

Location: **Stat1 Gunderson - Banks CNG Facility**

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
Propane	74-98-6	No	Yes	Yes	Yes	Yes	No
Pentane	109-66-0	Yes	Yes	Yes	Yes	Yes	No
Nitrogen	7727-37-9	No	Yes	Yes	Yes	Yes	No
Isobutane	75-28-5	No	Yes	No	Yes	Yes	No
Carbon dioxide	124-38-9	Yes	Yes	Yes	Yes	Yes	No
Hexane	110-54-3	No	Yes	Yes	Yes	Yes	No

Component Analysis – WHMIS IDL

The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List:

Component	CAS#	Minimum Concentration
Pentane	109-66-0	1 %

Additional Regulatory Information

Component Analysis – Inventory

Component	CAS#	TSCA	CAN	EEC
Methane	74-82-8	Yes	DSL	EINECS
Ethane	74-84-0	Yes	DSL	EINECS
Propane	74-98-6	Yes	DSL	EINECS
Pentane	109-66-0	Yes	DSL	EINECS
Nitrogen	7727-37-9	Yes	DSL	EINECS
Isobutane	75-28-5	Yes	DSL	EINECS
Carbon dioxide	124-38-9	Yes	DSL	EINECS
Hexane	110-54-3	Yes	DSL	EINECS

Section 16 – Other Information

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.

Safety Data Sheet



Material Name: **Natural Gas, Compressed**

Location: **Stat1 Gunderson - Banks CNG Facility**

Literature References

None.

DISCLAIMER OF EXPRESSED AND IMPLIED WARRANTIES:
--

<p>(1) Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as to the accuracy or completeness of the information contained herein, and assume no responsibility regarding the suitability of this information for the user's intended purposes or for the consequences of its use. Each individual should make a determination as to the suitability of the information for their particular purpose(s). (2) Ferus Inc. asks users of this product to study this SDS and become aware of product hazards and safety information. To promote safe use of this product, a user should (1) notify employees, agents, and contractors of the information in this SDS and of any other known product hazards and safety information, (2) furnish this information to each purchaser of the product, and (3) ask each purchaser to notify its employees and customers of the product hazards and safety information.</p>
