RANGE RESOURCES®

SAFETY DATA SHEET

1. Identification

Producer: Range Resources Corporation
100 Throckmorton Street
Fort Worth, TX 76102
Emergency Contact: 724.743.6700

Trade Name: Natural (Dry) Gas
CAS Number: 68410-63-9
Synonyms: Fuel gas
Product Uses: Fuel, chemical feedstock
Revision Date: April 12, 2016

2. Hazard Identification

GHS Classification

Flammable gas-Category 1
Gases under pressure, may explode if heated.

DANGER!
Extremely Flammable Gas
Contains gas under pressure
Harmful if inhaled
Gas may reduce oxygen in confined spaces-Asphyxiant

Precautionary Statements:

Prevention
Keep away from heat/sparks/open flames/hot surfaces. No smoking.
Take precautionary measures against static discharge.
Use personal protective equipment as required.
Do not breathe fume/gas/mist/vapors/spray.

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 sunlight. Store in a well ventilated area.

3. Composition

Natural dry gas is a mixture of hydrocarbons from a producing well that the water has been mechanically separated. The concentrations vary and are listed as the average range that may be found.

Component	CAS Number	Concentration-Percent
Natural gas	**68410-63-9**	**100**
Methane	**74-82-8**	**95-98**
Ethane	**74-84-0**	**2-3**
Propane	**74-98-6**	**0.1-0.5**

4. First Aid Measures

Eye contact
In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Hold eyelids open to ensure that the eye is being irrigated. Seek medical attention.

Skin contact
Remove contaminated clothing and shoes. Wash off immediately with plenty of water for at least 15 minutes. Seek medical attention.

Inhalation
Remove to fresh air. If not breathing, ensure an open airway and provide artificial respiration. Seek medical attention immediately.

Ingestion
This material is a gas under normal condition. Risk of ingestion is extremely low.

POTENTIAL HEALTH EFFECTS

Primary Routes of Entry: Inhalation

Medical Conditions Aggravated by Exposure:
Exposure to high concentrations of natural gas may increase the sensitivity of the heart to certain drugs. Persons with pre-existing heart disorders may be more susceptible to this effect.

Immediate Health Effects

Eye: Not expected to cause prolonged or significant eye irritation.

Skin: Contact with the skin may cause irritation. Contact with the skin is not expected to cause an allergic skin response. Not expected to be harmful to internal organs if absorbed through the skin.

Ingestion: Risk of ingestion is extremely low as material is normally a gas.

Inhalation: The vapor or fumes from this material may cause respiratory irritation. Symptoms of respiratory irritation may include coughing and difficulty breathing.

Delayed or Chronic Health Effects

Reproduction and Birth Defects: This material is not expected to cause birth defects or other harm to the developing fetus based on animal data.

Carcinogenicity:
Not listed as a carcinogenic substances as defined by IARC, NTP and/or OSHA.

5. Firefighting Measures

FLAMMABLE PROPERTIES

Flashpoint: Flammable gas (-299^{o}F/-184^{o}C)

Autoignition: Not determined, estimated between 900 ^{o}F-1170^{o}F (482 ^{o}C-632 ^{o}C)

Lower Explosive Limit: 3.8%

Upper Explosive Limit: 6.5%

Suitable extinguishing media: Carbon dioxide (CO2), Dry chemical, Water spray

Special Fire Fighting Procedures
Firefighters should be equipped with self-contained breathing apparatus to protect against potentially toxic decomposition products. Use cold water spray to cool fire-exposed containers to minimize the risk of rupture. Natural gas is lighter than air and may travel long distances to a point of ignition and flash back. If containerized, container may explode in heat or fire.

Hazardous thermal decomposition products
Decomposition products may include oxides of carbon.

Unusual Fire/Explosion Hazards
Use water spray to cool fire-exposed containers and to protect personnel. If safe to do so, stop the flow of gas and allow fire to burn out. Extinguishing the flame before shutting off the supply can cause the formation of explosive mixtures. In some cases it may be preferred to allow the flame to continue to burn. Avoid using straight water streams. Water may be ineffective in extinguishing low flash point fires, but can be used to cool exposed surfaces. Avoid excessive water spray application.

6. Accidental Release Measures

Personal precautions
No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering the area. Provide adequate ventilation. Personnel must use appropriate personal protective equipment including respiratory protection if ventilation is inadequate. Approach the release upwind and uphill. Do not touch or walk through released material. Stop leak if without risk.

Spill and Leak Procedures
Natural gas is a gas at normal conditions. Keep all sources of ignition and hot metal surface away from the release. Consider the use of water spray to disperse vapors. Isolate area until gas has been dispersed.

7. Handling and Storage

Handling/Storage Precautions
Handle as a flammable gas. Use only with adequate ventilation/personal protection. Keep away from heat, sparks, and open flame. Take precautions against static charge. Electrical equipment should be approved for classified area. Cold burns may occur during filling operations. Do not breathe vapors or spray mist. Do not get on skin or clothing. Do not get in eyes. Do not taste or swallow. Wash thoroughly after handling.

Storage Precautions
Store preferably in a cool, dry, well ventilated area. Material can be stored safely at ambient temperatures. Keep away from all ignition sources. Ground all equipment used in the transfer of this material.

Work/Hygienic Practices
Emergency eye wash and safety shower should be available in near proximity to operations presenting a potential splash exposure. Avoid repeated and/or prolonged skin exposure. Wash hands before eating, drinking or using toilet facilities.

8. Exposure Controls/Personal Protection

Natural (wet) Gas (68919-39-1)
OSHA PEL-TWA: 1000 ppm (1800 mg/m^3)*
ACGIH TLV-TWA: 1000 ppm (1800 mg/m^3)

Methane (74-82-8)
OSHA PEL-TWA: 1000 ppm (1800 mg/m^3)*
ACGIH TLV-TWA: 1000 ppm (1800 mg/m^3)

Ethane (74-84-0)
OSHA PEL-TWA: 1000 ppm (1800 mg/m^3)*
ACGIH TLV-TWA: 1000 ppm (1800 mg/m^3)

Propane (74-98-6)
OSHA PEL-TWA: 1000 ppm (1800 mg/m^3)*
ACGIH TLV-TWA: 1000 ppm (1800 mg/m^3)

* As Aliphatic Hydrocarbons C1-C4

Industrial Hygiene/Ventilation Measures

Provide adequate ventilation to keep vapor concentrations of this product below occupational exposure.

Respiratory protection

If airborne concentrations exceed the recommended exposure limits, wear NIOSH approved respiratory protection.

Hand protection

Use of skin protection is not normally required; good industrial hygiene practice suggests the use of gloves when working with this material.

Eye protection

Safety glasses with side-shields should be worn.

Skin and body protection

Long sleeved fire retardant/resistant clothing is recommended.

Additional Protective Measures

Employees should wash their hands and face before eating, drinking, or using tobacco products. Emergency showers and eye wash stations should be available.

9. Physical and Chemical Properties

Form:	Gas
Color:	Colorless
Odor:	May have a mercaptan odor
pH:	Not applicable
Freezing Point:	Not available
Boiling point/boiling range:	-259°F (-162°C)
Vapor pressure:	Approximately 40 atm @ -187°F (-86°C)
Vapor Density (air=1):	1.4-7.5 depending on components
Specific Gravity (water=1):	0.5
Solubility in Water:	Slight
Percent volatiles:	100%
Evaporation Rate:	High

10. Stability and Reactivity

Hazardous Reactions

Hazardous polymerization does not occur. Material will not react with water.

Stability

Material is stable under normal ambient and anticipated conditions of use.

Materials to avoid

Keep away from strong oxidizers such as strong acids, alkalis, and reducing agents, such as chlorine.

Conditions to avoid

Keep away from strong oxidizers, ignition sources and heat.

Hazardous decomposition products

Oxides of carbon.

11. Toxicological Information

SPECIAL REMARKS ON OTHER TOXIC EFFECTS ON HUMANS

Natural gas is considered to be a simple asphyxiant. The detectable amounts of pentane and hexane may cause central nervous system depression.

Acute Potential Health Effects:
May cause respiratory, skin and eye irritation with inflammation. Overexposure may cause coughing, wheezing, and mild inflammation. May cause shortness of breath or suffocation and affect behavior/central nervous system and cause dizziness, headache, lightheadness, passing out, and other narcotic or CNS depression effects. Ingestion: Causes gastrointestinal tract irritation with abdominal spasms, nausea, vomiting, and diarrhea. It may affect behavior/central nervous system with symptoms similar to that of inhalation.

Chronic Potential Health Effects:
Skin: Prolonged or repeated skin contact may cause dermatitis.
Exposures to natural gas with pentane and hexane have been associated in animal studies with effects to the central nervous system, peripheral nervous system, liver, and kidneys. The significance of these animal models to predict similar human response is uncertain. Observing good work practices and personal hygiene procedures can minimize potential risks to humans.

Sensitization: None known.
Target organs: none known.
Toxicological Data on Ingredients: None listed.
Mutagenicity: None listed
Carcinogenicity: No carcinogenic effects observed at the doses tested.
Reproductive Effects: None listed.

12. Ecological Information

Ecological Data for Natural Gas Condensate
Natural gas readily evaporate from the surface and would not expect to have significant adverse effects to aquatic life.

Persistence and Degradability: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely.

Toxicity of the Products of Biodegradation: The products of degradation would be less toxic than the product itself.

Special Remarks on the Products of Biodegradation: Not available.

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13. Disposal Considerations

Waste Disposal Method
This material is a gas and would not be managed as a waste.

14. Transport Information

The following information is provided for information purposes only. Offerors of this product for transportation in commerce are solely responsible for characterizing the product prior to its transport and documenting that information in accordance with 49 CFR 172.101.

PROPER SHIPPING NAME: Natural gas, Compressed
HAZARD CLASS: 2.1
UN/NA Number UN 1971
Packaging Group: None
DOT Shipping Label: Flammable Gas
DOT Placard: Flammable Gas

15. Regulatory Information

United States Federal Regulations

OSHA Hazard Communication Standard Rating: Hazardous

Toxic Substances Control Act: Listed on the TSCA Inventory.

EPA Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Hazardous Substances (40 CFR 302): Exempt

Emergency Planning and Community Right-To-Know Act (EPCRA) Superfund Amendments and Reauthorization Act (SARA) Title III Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A): This product does not contain extremely hazardous substances subject to the reporting requirements of section 302 of the Emergency Planning and Community Right-To-Know Act (EPCRA) of 1986 and of 40 CFR 372.

SARA Section 311/312 Hazard Categories: Fire, Sudden Release of Pressure, Acute Health Hazard

SARA Title III Section 313 Toxic Chemicals (40 CFR 372.65): This product does not contain toxic 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.

U.S. FEDERAL, STATE, and LOCAL REGULATORY INFORMATION

Any spill or uncontrolled release of this product, including any substantial threat of release, may be subject to federal, state and/or local reporting requirements. This product and/or its constituents may also be subject to other regulations at the state and/or local level.

CERCLA SECTION 103 and SARA SECTION 304 (RELEASE TO THE ENVIRONMENT)

The CERCLA definition of hazardous substances contains a “petroleum exclusion clause which exempts crude oil, refined, and unrefined petroleum products and any indigenous components of such.

CALIFORNIA PROPOSITON 65 LIST OF CHEMICALS

This product does not contain chemicals that are included on the Proposition 65 “List of Chemicals.

16. Other Information

NFPA 704M Rating

Health	1
Flammability	4
Reactivity	0
Other	None

HMIS Rating

Health	1
Flammability	4
Physical Hazard	0
PPE	X Refer to Section 8.

Global Harmonization Standard

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