SAFETY DATA SHEET

1. Identification

Product identifier **Natural Gas**

Other means of identification Not available.

Recommended use Fuel

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Company name Noble Energy, Inc.

Address 1001 Noble Energy Way
Houston, TX 77070 US
US

Telephone Non-emergency Telephone: 720-587-2085

E-mail SDSGLOBAL@nobleenergyinc.com

Emergency phone number 24 Hour Emergency: 1-760-476-3962
Access code 333053

2. Hazard(s) identification

Physical hazards Flammable gases — Category 1
Gases under pressure — Compressed gas

Health hazards Not classified.

OSHA defined hazards Simple asphyxiant

Label elements

Signal word Danger

Hazard statement Contains gas under pressure; may explode if heated. May displace oxygen and cause rapid suffocation.

Precautionary statement

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

Response Leaking gas fire: Do not extinguish, unless leak can be stopped safely. Eliminate all ignition sources if safe to do so.

Storage Store in a well-ventilated place.

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

Hazard(s) not otherwise classified (HNOC) May displace oxygen and cause rapid suffocation.

3. Composition/information on ingredients

Substances

Chemical name	Common name and synonyms	CAS number	%
Methane		74-82-8	> 99

Composition comments All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.
Note: Natural gas 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 and formation.

4. First-aid measures

Inhalation
Move injured person into fresh air and keep person calm under observation. If breathing is difficult, give oxygen. Get medical attention if any discomfort continues.

Skin contact
Frostbite: Do not remove clothes, but flush with copious amounts of lukewarm water. Call an ambulance and continue to flush during transportation to hospital.

Eye contact
If frostbite occurs, immediately flush eyes with plenty of warm water (not exceeding 105°F/41°C) for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention if irritation develops or persists.

Ingestion
This material is a gas under normal atmospheric conditions and ingestion is unlikely.

Most important symptoms/effects, acute and delayed
Exposure to rapidly expanding gas or vaporizing liquid may cause frostbite ("cold burn"). Narcosis. Behavioral changes. Decrease in motor functions.

Indication of immediate medical attention and special treatment needed
Treat symptomatically.

General information
Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media
Foam. Dry chemical powder. Carbon dioxide (CO2). Water fog.

Unsuitable extinguishing media
Do not use a solid water stream as it may scatter and spread fire.

Specific hazards arising from the chemical
Containers may explode when heated. Thermal decomposition or combustion may liberate toxic gases or fumes.

Special protective equipment and precautions for firefighters
Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Specific methods
Move container from fire area if it can be done without risk. Use water spray to keep fire-exposed containers cool.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures
Eliminate sources of ignition. Wear appropriate personal protective equipment (See Section 8).

Methods and materials for containment and cleaning up
Eliminate sources of ignition. Allow gas to dissipate into the atmosphere.

Large Spills: Remove gas with fine water spray. Prevent runoff from entering drains, sewers, or streams. Dike for later disposal.

Environmental precautions
Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling
Keep away from heat, sparks and open flame. Do not breathe gas. Avoid contact with eyes, skin, and clothing. Wash thoroughly after handling. Use only with adequate ventilation.

Conditions for safe storage, including any incompatibilities
Keep container tightly closed and in a well-ventilated place. Store away from incompatible materials.

8. Exposure controls/personal protection

Occupational exposure limits
No exposure limits noted for ingredient(s).

Biological limit values
No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls
Ensure adequate ventilation, especially in confined areas. Provide easy access to water supply and eye wash facilities.

Individual protection measures, such as personal protective equipment

Eye/face protection
Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection
Chemical resistant gloves are recommended.

Other
Wear chemical-resistant gloves, footwear, and protective clothing appropriate for the risk of exposure. Contact health and safety professional or manufacturer for specific information.

Respiratory protection	If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Respirator type: When respiratory protection is required, wear a NIOSH/MSHA approved self-contained breathing apparatus with full facepiece operated in a positive-pressure mode.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance	Colorless gas.
Physical state	Gas.
Form	Gas.
Color	Colorless.
Odor	Odorless.
Odor threshold	Not relevant.
pH	Not relevant.
Melting point/freezing point	-296.45 °F (-182.47 °C)
Initial boiling point and boiling range	-161.5 °F (-107.5 °C)
Flash point	-127.5 °F (-88.6 °C) Pensky-Martens Closed Cup
Evaporation rate	Not relevant.
Flammability (solid, gas)	Flammable gas.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	5
Flammability limit - upper (%)	15
Vapor pressure	Not relevant.
Vapor density	0.68 @ 59°F (15°C) (air=1)
Relative density	0.42 @ 77°F (25°C)
Solubility(ies)	
Solubility (water)	22.7 mg/l
Partition coefficient (n-octanol/water)	1.1
Auto-ignition temperature	548.6 °F (287 °C)
Decomposition temperature	Not relevant.
Viscosity	0.01 mPa·s
Viscosity temperature	80.6 °F (27 °C)
Other information	Gas density at boiling point is 1.816 kg/m3.

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Keep away from heat, sparks, and flame.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Ingestion	This material is a gas under normal atmospheric conditions and ingestion is unlikely.

Inhalation	Suffocation (asphyxiant) hazard - if allowed to accumulate to concentrations that reduce oxygen below safe breathing levels. In high concentrations, vapors are narcotic and may cause headache, fatigue, dizziness and nausea.
Skin contact	Contact with liquefied gas can cause damage (frostbite) due to rapid evaporative cooling.
Eye contact	Contact with liquefied gas can cause damage (frostbite) due to rapid evaporative cooling.
Symptoms related to the physical, chemical and toxicological characteristics	Narcosis. Behavioral changes. Decrease in motor functions. Exposure to rapidly expanding gas or vaporizing liquid may cause frostbite ("cold burn").

Information on toxicological effects

Acute toxicity	Suffocation (asphyxiant) hazard - if allowed to accumulate to concentrations that reduce oxygen below safe breathing levels. Exposure to rapidly expanding gas or vaporizing liquid may cause frostbite ("cold burn").
Skin corrosion/irritation	Not classified.
Serious eye damage/eye irritation	Not classified.
Respiratory or skin sensitization	
Respiratory sensitization	Not a respiratory sensitizer.
Skin sensitization	Not a skin sensitizer.
Germ cell mutagenicity	Not classified.
Carcinogenicity	This product is not considered to be a carcinogen by NTP, IARC, or OSHA.
Reproductive toxicity	Not classified.
Specific target organ toxicity - single exposure	Not classified.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Not applicable.

12. Ecological information

Ecotoxicity	The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Persistence and degradability	Not established.
Bioaccumulative potential	

Partition coefficient n-octanol / water (log Kow)

Natural Gas (CAS Mixture)	1.09

Mobility in soil	Not available.
Other adverse effects	Not established.

13. Disposal considerations

Disposal instructions	Do not discharge into drains, water courses or onto the ground. Discharge, treatment, or disposal may be subject to national, state, or local laws.
Hazardous waste code	D001: Waste Flammable material with a flash point <140 °F
Waste from residues / unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Since emptied containers retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

UN number	UN1971
UN proper shipping name	Methane, compressed
Transport hazard class(es)	
Class	2.1
Subsidiary risk	6.1
Packing group	Not applicable.

Environmental hazards

Marine pollutant	No
Special precautions for user	Not available.
Packaging exceptions	306
Packaging non bulk	302
Packaging bulk	302

IATA

UN number	UN1971
UN proper shipping name	Methane, compressed
Transport hazard class(es)	
Class	2.1
Subsidiary risk	6.1
Label(s)	2.1
Packing group	Not applicable.
Environmental hazards	No.
Special precautions for user	Not available.

IMDG

UN number	UN1971
UN proper shipping name	Methane, compressed
Transport hazard class(es)	
Class	2.1
Subsidiary risk	6.1
Label(s)	2.1
Packing group	Not applicable.
Environmental hazards	
Marine pollutant	No.
EmS	Not available.
Special precautions for user	Not available.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code This substance/mixture is not intended to be transported in bulk.

15. Regulatory information

US federal regulations This product is hazardous according to OSHA 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Methane (CAS 74-82-8) LISTED

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - Yes
Pressure Hazard - Yes
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical Yes

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Methane (CAS 74-82-8)

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

US. Massachusetts RTK - Substance List

Methane (CAS 74-82-8)

US. New Jersey Worker and Community Right-to-Know Act

Methane (CAS 74-82-8)

US. Pennsylvania Worker and Community Right-to-Know Law

Methane (CAS 74-82-8)

US. Rhode Island RTK

Methane (CAS 74-82-8)

US. California Proposition 65

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

Not listed.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	Yes
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 03-July-2014

Revision date 03-July-2014

Version # 03

NFPA ratings

References

ECHA registered substances database
HSDB® - Hazardous Substances Data Bank
IARC Monographs. Overall Evaluation of Carcinogenicity
National Toxicology Program (NTP) Report on Carcinogens
Registry of Toxic Effects of Chemical Substances (RTECS)

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