Natural Gas

Safety Data Sheet

according to the federal final rule of hazard communication revised on 2012 (HazCom 2012)

Date of issue: August 10, 2016 Version: 1.0

SECTION 1: Identification

1.1. Identification

Product form : Mixture

Product name : Natural Gas

Synonyms : Raw Natural Gas, Methane

1.2. Relevant identified uses of the substance or mixture and uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

EOG Resources, Inc.
1111 Bagby Street, Sky Lobby 2
Houston, Texas 77002
T (713) 651-7000

1.4. Emergency telephone number

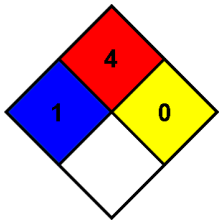
Emergency number : 1(800) 424-9300 - CHEMTREC

SECTION 2: Hazard(s) identification

NFPA health hazard : 1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.

NFPA fire hazard : 4 - Will rapidly or completely vaporize at normal pressure and temperature, or is readily dispersed in air and will burn readily.

NFPA reactivity : 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



2.1. Classification of the substance or mixture

GHS-US classification

Simple Asphyxiant	H380
Flammable gases, Category 1	H220
Gases under pressure: Compressed gas	H280

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :

GHS02

GHS04

Signal word (GHS-US) : Danger

Hazard statements (GHS-US) : H220 - Extremely flammable gas
H280 - Contains gas under pressure; may explode if heated
H380 - May displace oxygen and cause rapid suffocation

Precautionary statements (GHS-US) : P210 - Keep away from heat, hot surfaces, open flames, sparks. - 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. Store in a well-ventilated place

2.3. Other hazards

No additional data available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/information on ingredients

Composition will vary with geographic location, geologic formation, temperature and pressure.

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	GHS-US classification
Methane	(CAS No) 74-82-8	60 - 98	Simple Asphy, H380 Flam. Gas 1, H220 Compressed gas, H280
Ethane	(CAS No) 74-84-0	2 - 15	Flam. Gas 1, H220 Compressed gas, H280
Nitrogen	(CAS No) 7727-37-9	0 - 15	Compressed gas, H280
Propane	(CAS No) 74-98-6	0 - 10	Flam. Gas 1, H220 Liquefied gas, H280
Carbon dioxide	(CAS No) 124-38-9	0 - 5	Simple Asphy, H380
Butane	(CAS No) 106-97-8	0 - 4	Flam. Gas 1, H220 Liquefied gas, H280
Isobutane	(CAS No) 75-28-5	0 - 4	Flam. Gas 1, H220 Compressed gas, H280

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation : Remove victim to fresh air. Give oxygen or artificial respiration as needed. Seek medical attention immediately.

First-aid measures after skin contact : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse. Seek medical attention if irritation develops.

First-aid measures after eye contact : Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persists.

First-aid measures after ingestion : If exposure symptoms persist, seek medical attantion.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries : At extremely high concentrations and excessive exposure conditions, components of natural gas may produce cardiac sensitization.

Symptoms/injuries after inhalation : Natural gas acts as an anesthetic at high concentrations, producing dizziness, headache, narcosis and other central nervous system effects. Extremely high concentrations can cause asphyxiation by exclusion of oxygen.

Symptoms/injuries after skin contact : Generally not irritating to the skin.

Symptoms/injuries after eye contact : Generally not irritating to eye. Pressurized gas can cause mechanical injury to eye.

Symptoms/injuries after ingestion : Not expected to present a significant ingestion hazard under anticipated conditions of normal use.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Class "B" fire extinguishing media such as Foam, CO2, Dry Chemical, or H2O can be used.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Extremely flammable gas. Incomplete combustion may form carbon oxides and unburned hydrocarbons.

Explosion hazard : May form flammable/explosive vapor-air mixture. Vapor heavier than air may travel considerable distance to a source of ignition and flash back.

Reactivity : None under normal conditions.

5.3. Advice for firefighters

Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering the environment. Leaking gas fire: Do not extinguish, unless leak can be stopped safely. Eliminate all ignition sources if safe to do so.

Protective equipment for firefighters : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Remove ignition sources. Use special care to avoid static electric charges. Eliminate every possible source of ignition. No open flames. No smoking.

6.1.1. For non-emergency personnel

Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment	:	Equip cleanup crew with proper protection.
Emergency procedures	:	Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up	:	Store away from other materials.

6.4. Reference to other sections

Refer to sections 8 and 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed	:	Handle empty containers with care because residual vapors are flammable. Flammable gas.
Precautions for safe handling	:	Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor. No open flames. No smoking.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures	:	Proper grounding procedures to avoid static electricity should be followed.
Storage conditions	:	Keep only in the original container in a cool, well ventilated place away from heat sources. Keep container closed when not in use. Keep in fireproof place.
Incompatible materials	:	Oxygen. Strong oxidizing agents.
Storage area	:	Store in a well-ventilated place.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Propane (74-98-6)		
OSHA	OSHA PEL (TWA) (mg/m³)	1800 mg/m³
OSHA	OSHA PEL (TWA) (ppm)	1000 ppm
IDLH	US IDLH (ppm)	2100 ppm (10% LEL)
NIOSH	NIOSH REL (TWA) (mg/m³)	1800 mg/m³
NIOSH	NIOSH REL (TWA) (ppm)	1000 ppm

Butane (106-97-8)		
ACGIH	ACGIH STEL (ppm)	1000 ppm
NIOSH	NIOSH REL (TWA) (mg/m³)	1900 mg/m³
NIOSH	NIOSH REL (TWA) (ppm)	800 ppm

Isobutane (75-28-5)		
ACGIH	ACGIH STEL (ppm)	1000 ppm
NIOSH	NIOSH REL (TWA) (mg/m³)	1900 mg/m³
NIOSH	NIOSH REL (TWA) (ppm)	800 ppm

Carbon dioxide (124-38-9)		
ACGIH	ACGIH TWA (ppm)	5000 ppm
ACGIH	ACGIH STEL (ppm)	30000 ppm
OSHA	OSHA PEL (TWA) (mg/m³)	9000 mg/m³
OSHA	OSHA PEL (TWA) (ppm)	5000 ppm
IDLH	US IDLH (ppm)	40000 ppm
NIOSH	NIOSH REL (TWA) (mg/m³)	9000 mg/m³
NIOSH	NIOSH REL (TWA) (ppm)	5000 ppm
NIOSH	NIOSH REL (STEL) (mg/m³)	54000 mg/m³
NIOSH	NIOSH REL (STEL) (ppm)	30000 ppm

8.2. Exposure controls

Appropriate engineering controls	:	Provide local exhaust or general room ventilation to minimize vapor concentrations. Use adequate general or local ventilation to keep airborne concentrations below the exposure limits.
Hand protection	:	Not required for normal conditions of use.
Eye protection	:	Chemical goggles or safety glasses.
Skin and body protection	:	Not required for normal conditions of use.
Respiratory protection	:	Not required for normal conditions of use. NIOSH/MSHA approved air purifying respirator should be used if operating conditions produce airborne concentrations that exceed exposure limits for any individual components. If conditions immediately dangerous to life or health exist, use NIOSH/MSHA self-contained breathing apparatus (SCBA).
Other information	:	Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Gas
Color	:	Colorless
Odor	:	Mercaptan odor, rotten eggs
Odor threshold	:	No data available
pH	:	No data available
Melting point	:	No data available
Freezing point	:	No data available
Boiling point	:	≈ ¯249 - ¯43 °F
Flash point	:	¯180 °C
Relative evaporation rate (butylacetate=1)	:	No data available
Flammability (solid, gas)	:	Extremely flammable gas.
Vapor pressure	:	No data available
Relative vapor density at 20 °C	:	0.55 - 0.62 (Air= 1.0)
Relative density	:	≈ 0.37 - 0.5 g/cm³
Solubility	:	Negligible in water.
Log Pow	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	No data available
Explosive limits	:	Lower explosive limit (LEL): 3.2 vol % Upper explosive limit (UEL): 14 vol %
Explosive properties	:	No data available
Oxidizing properties	:	No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

None under normal conditions.

10.2. Chemical stability

Stable at normal conditions.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures. Open flame. Overheating. Heat. Sparks.

10.5. Incompatible materials

Oxygen. Strong oxidizing agents.

10.6. Hazardous decomposition products

Hydrocarbon and carbon oxides. Incomplete combustion may form carbon oxides and unburned hydrocarbons.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Likely routes of exposure	:	Inhalation, Skin, and Eye contact
Acute toxicity	:	Not classified
Skin corrosion/irritation	:	Not classified
Serious eye damage/irritation	:	Not classified
Respiratory or skin sensitisation	:	Not classified
Germ cell mutagenicity	:	Not classified
Carcinogenicity	:	Not classified
Reproductive toxicity	:	Not classified
Specific target organ toxicity (single exposure)	:	Not classified
Specific target organ toxicity (repeated exposure)	:	Not classified
Aspiration hazard	:	Not classified
Symptoms/injuries after inhalation	:	Natural gas acts as an anesthetic at high concentrations, producing dizziness, headache, narcosis and other central nervous system effects. Extremely high concentrations can cause asphyxiation by exclusion of oxygen.
Symptoms/injuries after skin contact	:	Generally not irritating to the skin.
Symptoms/injuries after eye contact	:	Generally not irritating to eye. Pressurized gas can cause mechanical injury to eye.
Symptoms/injuries after ingestion	:	Not expected to present a significant ingestion hazard under anticipated conditions of normal use.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	:	Components of natural gas are lighter than air and should dissipate rapidly before having any effect in open areas.

12.2. Persistence and degradability

Natural Gas	
Persistence and degradability	Not established.

12.3. Bioaccumulative potential

Natural Gas	
Bioaccumulative potential	Not established.

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Effect on the global warming	:	No known effects from this product.
GWPmix comment	:	No known effects from this product.
Other information	:	Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product Waste	:	Dispose of contents/container to comply with applicable local, national and regional regulation.
Packaging Waste	:	Dispose of contents/container to comply with applicable local, national and regional regulation.
Additional information	:	Handle empty containers with care because residual vapors are flammable.
Ecology - waste materials	:	Avoid release to the environment. Hazardous waste due to toxicity.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Transport document description	:	UN1971 Natural gas, compressed (with high methane content), 2.1
UN-No.(DOT)	:	UN1971

Proper Shipping Name (DOT)	:	Natural gas, compressed (with high methane content)
Class (DOT)	:	2.1 - Class 2.1 - Flammable gas 49 CFR 173.115
Hazard labels (DOT)	:	2.1 - Flammable gas

DOT Packaging Non Bulk (49 CFR 173.xxx)	:	302
DOT Packaging Bulk (49 CFR 173.xxx)	:	302
DOT Packaging Exceptions (49 CFR 173.xxx)	:	306
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	:	Forbidden
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	:	150 kg
DOT Vessel Stowage Location	:	E - The material may be stowed ‘‘on deck’’ or ‘‘under deck’’ on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per each 3 m of overall vessel length, but is prohibited from carriage on passenger vessels in which the limiting number of passengers is exceeded
DOT Vessel Stowage Other	:	40 - Stow ‘‘clear of living quarters’’
Emergency Response Guide (ERG) Number	:	115
Other information	:	No supplementary information available.

TDG

Transport document description	:	UN1971 NATURAL GAS, COMPRESSED (with high methane content), 2.1
UN-No. (TDG)	:	UN1971
Proper Shipping Name (TDG)	:	NATURAL GAS, COMPRESSED
TDG Primary Hazard Classes	:	2.1 - Class 2.1 - Flammable Gas.
ERAP Index	:	3 000
Explosive Limit and Limited Quantity Index	:	0.125 L
Passenger Carrying Road Vehicle or Passenger Carrying Railway Vehicle Index	:	Forbidden
Passenger Carrying Ship Index	:	Forbidden

Transport by sea

UN-No. (IMDG)	:	1971
Proper Shipping Name (IMDG)	:	NATURAL GAS, COMPRESSED
Class (IMDG)	:	2 - Gases
Limited quantities (IMDG)	:	0

Air transport

UN-No. (IATA)	:	1971
Proper Shipping Name (IATA)	:	Natural gas, compressed
Class (IATA)	:	2

SECTION 15: Regulatory information

15.1. US Federal regulations

Natural Gas	
SARA Section 311/312 Hazard Classes	Fire hazard Immediate (acute) health hazard

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory.

This product or mixture does not contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

15.2. International regulations

CANADA

Methane (74-82-8)
Listed on the Canadian DSL (Domestic Substances List)

Ethane (74-84-0)
Listed on the Canadian DSL (Domestic Substances List)

Propane (74-98-6)
Listed on the Canadian DSL (Domestic Substances List)

Butane (106-97-8)
Listed on the Canadian DSL (Domestic Substances List)

Isobutane (75-28-5)
Listed on the Canadian DSL (Domestic Substances List)

Nitrogen (7727-37-9)
Listed on the Canadian DSL (Domestic Substances List)

Carbon dioxide (124-38-9)
Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

Methane (74-82-8)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Ethane (74-84-0)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Propane (74-98-6)
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Butane (106-97-8)
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Nitrogen (7727-37-9)
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Carbon dioxide (124-38-9)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

National regulations

Methane (74-82-8)
Listed on the AICS (Australian Inventory of Chemical Substances) Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China) Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory Listed on the Korean ECL (Existing Chemicals List) Listed on NZIoC (New Zealand Inventory of Chemicals) Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances) Listed on INSQ (Mexican National Inventory of Chemical Substances) Listed on CICR (Turkish Inventory and Control of Chemicals)

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15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

SECTION 16: Other information

Date of Preparation : August 10, 2016

Other information : None.

Full text of H-statements:

H220	Extremely flammable gas
H280	Contains gas under pressure; may explode if heated
H380	May displace oxygen and cause rapid suffocation

Abbreviations and acronyms:

ACGIH	American Conference of Government Industrial Hygienists
IARC	International Agency for Research on Cancer
LC50	Median lethal concentration
IDLH	Immediately Dangerous to Life or Health
STEL	Short-Term Exposure Limit
TWA	Time Weighted Average
ppm	Parts per million

HMIS III Rating

Health : 1 Slight Hazard - Irritation or minor reversible injury possible

Flammability : 4 Severe Hazard - Flammable gases, or very volatile flammable liquids with flash points below 73 F, and boiling points below 100 F. Materials may ignite spontaneously with air. (Class IA)

Physical : 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

SDS US (GHS HazCom 2012)

Prepared by: Intertek

The information contained herein is believed to be accurate and reliable but it is not warranted to be so. No responsibility is assumed for any damage or injury resulting from abnormal use or from any failure to adhere to recommended practices. The information provided, and the product, and furnished on the condition that the person receiving them shall make their own determination as to the suitability of the product for the their particular purpose and on the condition that they assume the risk of their use.