NATURAL GAS

SECTION 1 – PRODUCT IDENTIFICATION

PRODUCT NAME: NATURAL GAS
SYNONYMS: NONE

PRODUCT MANUFACTURER / DISTRIBUTOR: DISCOVERY NATURAL RESOURCES
1001 17TH ST., STE. 2000
DENVER, CO 80202
Phone Number:
(303) 893-5073

RECOMMENDED USE: FUEL GAS, FOR PROFESSIONAL USE ONLY

CAS #: MIXTURE

EMERGENCY PHONE NUMBERS: (325) 835-3465 DISCOVERY 24/7 OPERATIONS CENTER

REVISION DATE: 10/1/24

SECTION 2 – HAZARD IDENTIFICATION

Classification:

Flammable Gas:	Category 1
Simple Asphyxiation	
Compressed Gas	
Reproductive Hazard:	Category 2

Label Symbol

GHS02 GHS04 GHS08

Hazard Statements:

H220 - Extremely flammable gas
H280 - Contains gas under pressure; may explode if heated
H361 – Suspected of damaging fertility or the unborn child
Simple Asphyxiation - May displace oxygen and cause rapid suffocation

Precautionary Statements:

P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P210 - Keep away from heat, hot surfaces, open flames, sparks - No smoking.
P280 - Wear protective clothing, eye protection, cold insulating gloves, and respiratory protection.
P308+P313 - If exposed or concerned: Get medical advice/attention.

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+P405 - Protect from sunlight. Store in a well-ventilated place. Store locked up.
P501 - Dispose of contents/container according to local, regional, national, and international regulations.

Emergency Overview: DANGER! Gas reduces oxygen available for breathing. Vapors may cause drowsiness and dizziness. Flammable gas - may cause flash fire. COMPRESSED GAS.

Signal Word: DANGER!

Potential Health Effects

Inhalation: Suffocation (asphyxiant) hazard - if allowed to accumulate to concentrations that reduce oxygen below safe breathing levels. Due to oxygen deficiency inhalation of gas may cause dizziness, light-headedness, headache, nausea, and loss of coordination. Continued inhalation may result in unconsciousness.

Eye Contact: Direct contact with cold gas may cause eye damage from frostbite.

Skin Contact: Contact with cold gas might cause frostbites, in some cases with tissue damage.

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

OSHA Regulatory Status: This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

CAS NO	CHEMICAL NAME	CONCENTRATION*
7727-37-9	NITROGEN	0.5-0.7 %
74-82-8	METHANE	67-76 %
124-38-9	CARBON DIOXIDE	2.3-3.3 %
74-84-0	ETHANE	12.9-13.8 %
7783-06-4	HYDROGEN SULFIDE	0 – 0.5%
74-98-6	PROPANE	5.7-9.6 %
106-97-8	BUTANE	1.5-4.3 %
109-66-0	PENTANE	0.5-1.3 %
110-54-3	HEXANES	0.1-0.2 %

*ALL CONCENTRATIONS ARE IN PERCENT BY WEIGHT UNLESS INGREDIENT IS A GAS. GAS CONCENTRATIONS ARE IN PERCENT BY MOLS.

SECTION 4 – FIRST AID MEASURES

Inhalation: Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention, if needed.

Skin Contact: Remove contaminated clothing. Drench affected area with water for at least 15 minutes. Wash contaminated clothing before reuse. Obtain medical attention if irritation develops or persists. If frostbite occurs, immerse affected the area in warm water (not exceeding 105°F/41°C). Keep immersed for 20 to 40 minutes. Do not use hot water. Do not rub affected the area. Get medical attention immediately.

Eye Contact: In case of contact, flush eyes with large amounts of water for 15 minutes. Remove any contact lenses. Get medical attention.

Ingestion: This material is a gas under normal atmospheric conditions and ingestion is unlikely. Though the risk of ingestion is extremely unlikely, in case of frostbite or freeze burns due to oral exposure seek immediate medical attention.

General Advice: If you feel unwell, seek medical advice (show the label where possible).

Most important symptoms and effects, both acute and delayed:

Symptoms/Injuries: Natural Gas is an asphyxiant. Lack of oxygen can be fatal.

Symptoms/Injuries after Inhalation: In elevated concentrations may cause asphyxiation, central nervous system effects, and increased breathing rate. Symptoms of asphyxiation include a headache, dizziness, rapid breathing, increased pulse, mood changes, tremors, cyanosis, muscular weakness, narcosis, numbness of the extremities, unconsciousness, and death.

Symptoms/Injuries after Skin Contact: Non-irritating. Direct contact with skin or mucous membranes with pressurized vapor may cause freeze burns and frostbite. Signs of frostbite include a change in the color of the skin to gray or white, possibly followed by blistering. The skin may become inflamed and painful.

Symptoms/Injuries after Eye Contact: This gas is non-irritating, but direct contact with liquefied/pressurized gas or frost particles may produce severe and possibly permanent eye damage from freeze burns.

Symptoms/Injuries after Ingestion: Non-irritating, but solid and liquid forms of this material and pressurized gas may cause freeze burns.

SECTION 5 – FIREFIGHTING MEASURE

Flammable Properties: Flammable by OSHA criteria. Flammable gas - may cause flash fire. Containers can burst violently when heated, due to excess pressure build-up. Gases may form explosive mixtures with air.

Hazardous combustion products: Carbon dioxide (CO2). Carbon monoxide. Reacts violently with (strong) oxidizers: (increased) risk of fire/explosion.

Suitable Extinguishing Media: Extinguish with foam, dry powder, water fog or carbon dioxide. Do not use a solid water stream as it may scatter and spread fire

Special Fire Fighting Procedures: Evacuate area. Remove pressurized gas cylinders from the immediate vicinity. Cool containers exposed to flames with water until well after the fire is out. Close the valve if no risk is involved. Do not extinguish a leaking gas fire unless leak can be stopped. If the leak cannot be stopped and no danger to surrounding area allow the fire to burn out.

Protection of Firefighters

Protective equipment and precautions for firefighters Fight fire from a protected location. Prevent buildup of vapors or gases to explosive concentrations.

Specific Methods: In the event of a fire and/or explosion do not breathe fumes. In the event of a fire, cool tanks with water spray. Use water spray to cool unopened containers.

SECTION6 – ACCIDENTAL RELEASE MEASURES

Personal precautions: If leakage cannot be stopped, evacuate the area. Check oxygen content before entering the area. Avoid contact with the cold gas. Wear appropriate personal protective equipment. See Section 8 of the SDS for Personal Protective Equipment.

For Non-emergency Personnel:

Protective Equipment: Use appropriate personal protection equipment (PPE).

Emergency Procedures: Evacuate unnecessary personnel.

For Emergency Responders:

Protective Equipment: Equip cleanup crew with proper protection.
Emergency Procedures: Stop release. Ventilate area.

Methods for containment: Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Use water spray to reduce vapors or divert vapor cloud drift. Prevent entry into waterways, sewers, basements or confined areas.

Methods for cleaning up: Ventilate well stop the flow of gas or liquid if possible. Allow gas to evaporate. Remove sources of ignition. Beware of the explosion danger. Do not allow the chemical to enter confined spaces such as sewers due to explosion risk.

Other information: Clean up in accordance with all applicable regulations.

SECTION 7 – HANDLING AND STORAGE

Handling: Keep away from sources of ignition - No smoking. May be ignited by open flame. Vapors may form explosive mixtures with air. Heat only in areas with appropriate exhaust ventilation. There is a potential for CO/CO_2 production and reduced levels of O_2 in the exhaust. Do not breathe dust/fume/gas/mist/vapors/spray. Use only with adequate ventilation. Avoid prolonged exposure. Do not handle or store near an open flame, heat or other sources of ignition. Wash thoroughly after handling.

Storage: Flammable compressed gas storage. Do not handle or store near an open flame, heat or other sources of ignition. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Store in cool place. Keep in a well-ventilated place. Keep container tightly closed. Keep out of the reach of children

SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION

Chemical Name	Source	Type	Exposure Limits	Notes
Methane	ACGIH	TWA	1000 ppm	
Hexane	ACGIH	TWA	50 ppm	
Hexane	OSHA	PEL	500 ppm	n-Hexane
Butane	ACGIH	STEL	1000 ppm	
Propane	ACGIH	TWA	1000 ppm	
Propane	OSHA	PEL	1000 ppm	
Carbon Dioxide	ACGIH	TWA	5000 ppm	
Carbon Dioxide	OSHA	PEL	5000 ppm	
Ethane	ACGIH	TWA	1000 ppm	
Pentane	ACGIH	TWA	1000 ppm	
Pentane	OSHA	PEL	1000 ppm	
Hydrogen Sulfide	ACGIH	STEL	5 ppm	
		TWA	1 ppm	
Hydrogen Sulfide	OSHA	Ceiling	50 ppm	
		STEL	20 ppm	

Engineering controls: Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

Personal protective equipment

Eye/face protection Skin protection: Risk of contact: Wear approved safety goggles. Wear appropriate clothing to prevent skin contamination or freezing.

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. In the United States of America, if respirators are used, a program should be instituted to assure compliance with OSHA Standard 63 FR 1152, January 8, 1998. A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use. Seek advice from the local supervisor.

General hygiene considerations: When using, do not smoke. Handle in accordance with good industrial hygiene and safety practice.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Color:	**Colorless**
Odor:	Odorless
Appearance:	Colorless gas
Physical State:	Compressed gas
pH:	No Data Available
Melting Point:	No Data Available
Freezing Point:	No Data Available
Evaporation Rate:	No Data Available
Boiling Point:	-250 - -160 °F (-156.7 - -106.7 °C)
Flash Point:	No Data Available
Flammability (Solid):	No Data Available
Flammability Limit – Upper (%)	NA
Flammability Limit – Lower (%)	NA
Vapor Pressure (Reid):	8.6-12.8
Vapor Density (Air=1)	0.6 (air+1)
Specific Gravity	0.7379 - 0.8435 @ 60°F
Solubility in Water:	Slightly Soluble
Solubility (Other):	No Data Available
Partition Coefficient (n-octanol/water):	No Data Available
Auto-ignition Temperature:	No Data Available
Viscosity:	No Data Available
Explosive Properties:	No Data Available
Corrected API Gravity:	37.3-50.4 @ 60°F

SECTION 10 – STABILITY AND REACTIVITY

Chemical stability: Stable under normal temperature conditions.

Conditions to avoid: Heat, flames, and sparks.

Incompatible materials: Oxidizing agents.

Hazardous decomposition products: Carbon dioxide (CO2). Carbon monoxide.

The possibility of hazardous reactions: Hazardous polymerization does not occur.

SECTION 11 – TOXICOLOGICAL INFORMATION

Specified Substance(s)	**Acute Toxicity:**
Chemical Name	**Test Results**
Hexane	Acute Dermal LD50 Dermal Rabbit: 3000 mg/kg Acute Inhalation LC50 Inhalation Rat 48000 ppm/4h

Butane	Acute Inhalation LC50 Inhalation Rat 30957 mg/m³/4h
Propane	Acute Inhalation LC50 Inhalation Rat 658 mg/l/4h
Ethane	Acute Inhalation LC50 Inhalation Rat 658 mg/l/4h
Pentane	Acute Dermal LD50 Dermal Rabbit 3000 mg/kg Acute Inhalation LC50 Inhalation Rat 364 g/m³/4 h

Specified Substance(s):

Sensitization: Not available.

Skin Corrosion/Irritation: Causes skin irritation.

Serious Eye Damage/Irritation: Causes eye irritation.

STOT (Single Exposure): May cause drowsiness or dizziness.

STOT (Repeated Exposure): May cause damage to organs through prolonged or repeated exposure.

Aspiration Hazard: Not classified

Acute effects: Contact with liquefied gas can cause damage (frostbite) due to rapid evaporative cooling.

Chronic effects: Not available.

Carcinogenicity: This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

Epidemiology: Not available.

Mutagenicity: Not available.

Neurological effects: Not available.

Reproductive effects: Suspected of damaging fertility or the unborn child.

Teratogenicity: Not available.

Symptoms/Injuries After Inhalation: In elevated concentrations may cause asphyxiation, central nervous system effects, and increased breathing rate. Symptoms of asphyxiation include a headache, dizziness, rapid breathing, increased pulse, mood changes, tremors, cyanosis, muscular weakness, narcosis, numbness of the extremities, unconsciousness, and death.

Symptoms/Injuries After Skin Contact: Causes skin irritation. Contact with gas escaping the cylinder causes frostbite.

Symptoms/Injuries After Eye Contact: Causes serious eye irritation. Contact with the liquefied gas causes frostbite.

Symptoms/Injuries After Ingestion: Not considered a potential route of exposure, but contact with gas escaping the cylinder may cause freeze burns and frostbite.

Chronic Symptoms: May cause damage to organs through prolonged or repeated exposure. Suspected of damaging fertility or the unborn child.

SECTION 12 – ECOLOGICAL INFORMATION

Chemical Name	Test Results
Hexane (110-54-3)	LC50 Fish 1: 2.1 - 2.98 mg/l (Exposure time: 96 h Species: Pimephales promelas [flow-through])
Pentane (109-66-0)	LC50 Fish 1: 9.87 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss) EC50 Daphnia 1 9.74 mg/l (Exposure time: 48 h - Species: Daphnia magna) LC 50 Fish 2 : 11.59 mg/l (Exposure time: 96 h - Species: Pimephales promelas)

Other Adverse Effects: Avoid release to the environment.

Ecotoxicity: This product has no known eco-toxicological effects.

Persistence degradability: The product is easily biodegradable.

Bioaccumulation/Accumulation: The product is not bioaccumulated.

Mobility in environmental media: The product is slightly soluble in water.

SECTION 13 – DISPOSAL CONSIDERATIONS

Waste codes: D001: Waste Flammable material with a flash point <140 F Disposal instructions: This material and its container must be disposed of as hazardous waste. Do not dispose of waste into the sewer. This product, in its present state, when discarded or disposed of, is not a hazardous waste according to Federal regulations (40 CFR 261.4 (b)(4)).

Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the product meets RCRA criteria for hazardous waste.

SECTION 14 – TRANSPORT INFORMATION

Land (DOT)
Basic shipping requirements:
Basic shipping requirements:

UN number	UN1971
Proper shipping name	Methane, compressed
Hazard class	2.1

Subsidiary hazard class	6.1
Additional information:	306
Packaging exceptions	302
Packaging non bulk	302
Packaging bulk	115
ERG number	

Air (IATA)

Basic shipping requirements:

Basic shipping requirements:	
UN number	UN1971
Proper shipping name	Methane, compressed
Hazard class	2.1
Subsidiary hazard class	6.1
Labels required	2.1
Additional information:	
Packaging exceptions	306
Packaging non bulk	302
Packaging bulk	302

Sea (IMDG)

Basic shipping requirements:

Basic shipping requirements:	
UN number	UN1971
Proper shipping name	Methane, compressed
Hazard class	2.1
Subsidiary hazard class	6.1
Labels required	2.1
Additional information:	
Packaging exceptions	306
Marine Pollutant:	Yes

DOT

IATA

IMDG

SECTION 15 – REGULATORY INFORMATION

US federal regulations: This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. All components are on the U.S. EPA TSCA Inventory List.

CERCLA (Superfund) reportable quantity (lbs)
Methane: 100

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories	Immediate Hazard - No Delayed Hazard - No Fire Hazard - Yes Pressure Hazard - No Reactivity Hazard - No
Section 302 extremely hazardous substance	No
Section 311 hazardous Chemical	Yes

Inventory status

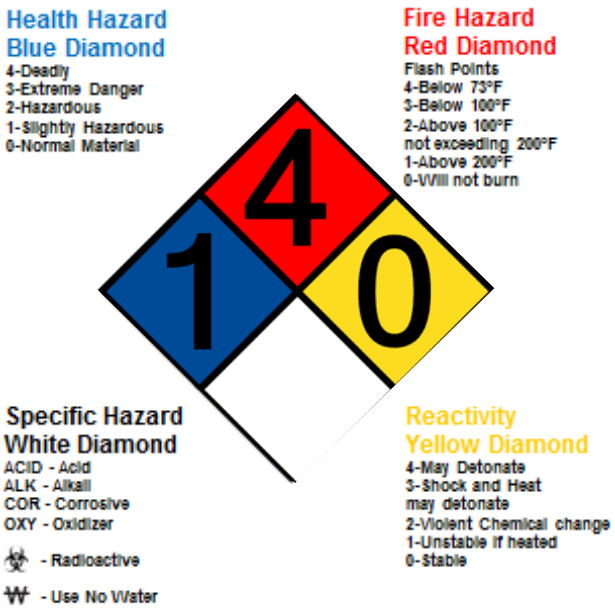
Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	Yes
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory 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

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

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 - New Jersey Community RTK (EHS Survey): Reportable threshold
Methane (CAS 74-82-8) 500 LBS
US - Pennsylvania RTK - Hazardous Substances: Listed substance
Methane (CAS 74-82-8) Listed.

SECTION 16- OTHER INFORMATION



HAZARD RATINGS

	Health Hazard	Fire Hazard	Instability	Special Hazard
NFPA	1	4	0	NONE

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe
NFPA Label colored diamond code: Blue - Health; Red - Flammability; Yellow - Instability; White - Special Hazards

	Health Hazard	Flammability	Physical Hazard	Personal Protection
HMIS	1	4	0	--

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe
HMIS Label colored barcode: Blue - Health; Red - Flammability; Orange - Physical Hazards; White – Special

Disclaimer: This information is provided without warranty. The information is believed to be correct. This information should be used to make an independent determination of the methods to safeguard workers and the environment.