



# Safety Data Sheet

## Liquefied Natural Gas (LNG)



SECTION 1: PRODUCT AND COMPANY IDENTIFICATION	
Company Phone Number:	1-866-LNG-FUEL (564-3835)
24 Hour Emergency Number:	1-800-424-9300
SDS Information Number:	1-361-492-0516
Product Name:	Liquefied Natural Gas
Material Use:	Various
Manufacturer/Supplier:	Stabilis Energy 3732 Highway 281 George West, TX 78022
WHMIS Class:	A- Compressed Gas; 81- Flammable and Combustible Material- Division 1 Flammable Gases
UN/PIN Number:	1972
TOG Classification:	Class 2.1 Flammable Gases
Chemical Family:	Hydrocarbon Liquid
Chemical Formula:	CH <sub>4</sub> (methane)
Molecular Weight:	16.04 (methane)
CAS Number:	74-82-8
Trade Names/Synonyms:	Liquefied Methane   LNG

SECTION 2: HAZARD(S) IDENTIFICATION	
GHS Classification:	Extremely flammable gases.
GHS Label Elements:	Contains refrigerated liquefied gas; may cause cryogenic burns.
<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p><b>DANGER</b> Contains refrigerated gas. May cause cryogenic burns or injury.</p> </div> <div style="text-align: center;">  <p><b>DANGER</b> Extremely flammable gas. Keep away from sparks or open flames. No Smoking.</p> </div> </div>	
Precautionary Statements	P202: Do not handle until all safety precautions have been read & understood. P210: Keep away from heat/sparks/open flames/hot surfaces – No smoking P282: Wear cold insulating gloves/face shield/eye protection.
Hazard Statements	H220: Extremely flammable gas. H281: Contains refrigerated gas; may cause cryogenic burns or injury. H261: In contact with water releases flammable gas.
Chemical Stability	Stable.
Incompatible Products	Keep away from air, oxygen, strong oxidizing agents, chlorine, fluoride compounds and other halides.
Reactivity Conditions	Keep away from source of: Ignition, heat, high temperatures, flames, sparks, welding, static electricity, and other ignition sources.
Decomposition Products	CO, CO <sub>2</sub> , fumes.
Polymerization	N/A.
Appearance/Odor:	Odorless, colorless liquid. This product is not odorized.
Flammable:	Very flammable after vaporization to gaseous phase.
Potential Health Effects:	See Section 11 for more information.
Potential Environmental Effects:	See Section 12 for more information.

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<b>Likely Routes of Exposure:</b>	Eye and skin contact, acute inhalation.
<b>Acute- Eye, Skin and Inhalation:</b>	Liquid or cold gas contact with skin or eyes could cause freezing or severe cryogenic burns. After vaporization, contact with burning gas may cause burns. CNS depression and cardiac sensitization may occur at high gaseous concentrations approaching the lower flammability limit.
<b>Chronic- Inhalation:</b>	None
<b>Ingestion:</b>	None
<b>Skin Absorption:</b>	None

### SECTION 3: COMPOSITION AND INFORMATION ON INGREDIENTS

Component	CAS#	% byWt.	Exposure Limits (*)
<b>Methane</b>	74-82-8	95	Simple asphyxiant
<b>Ethane</b>	74-84-0	3	Simple asphyxiant
<b>Propane</b>	74-98-6	1	Simple asphyxiant
<b>Nitrogen</b>	7727-37-9	1	Simple asphyxiant

\*NOTE 1. See Section 8 for additional exposure limit information for C1 to C3Aliphatic Hydrocarbon Gases (i.e., methane, ethane, propane).

### SECTION 4: FIRST AID MEASURES

<b>Skin Contact:</b>	Cryogenic burns. Remove constricting clothing. Do not thaw too rapidly. Transport to hospital immediately.
<b>Eye contact:</b>	Immediately and briefly flush eyes with warm gentle flowing water. Do not attempt to re-warm. Get medical attention immediately.
<b>Inhalation:</b>	Move to fresh air. Give artificial respiration if breathing has stopped. Call a physician.
<b>Ingestion:</b>	Unlikely route of exposure as this is a gas at normal room temperature and pressure.
<b>General Advice:</b>	Use extreme care in handling due to high flammability and risk of cryogenic burns.

### SECTION 5: FIRE-FIGHTING MEASURES

<b>Flammability:</b>	Flammable gas
<b>Suitable Extinguishing Media:</b>	Dry Chemical (Purple-K). To suppress or contain, use water fog or high expansion foam.
<b>Unsuitable Extinguishing Media:</b>	Do not direct water spray directly at LNG pool; this will only increase rate of vaporization. Do not use carbon dioxide or low expansion foams. Cold vapor is heavier than air and will not readily disperse until warmed up. High expansion foam may be used to help control the vaporization rate.
<b>Products of Combustion:</b>	Carbon dioxide and carbon monoxide
<b>Protection of Firefighters:</b>	Very flammable after vaporization to gaseous phase. Firefighters should wear self-contained breathing apparatus (SCBA) in case of oxygen deficient atmosphere. Use Combustible Gas Indicator to determine the extent of vapor cloud.
<b>Sensitivity to Static Discharge:</b>	Ignitable by static
<b>Sensitivity to Mechanical Impact:</b>	None
<b>Explosive Power:</b>	Not known

### SECTION 6: ACCIDENTAL RELEASE MEASURE

<b>Personal Precautions:</b>	Use personal protection recommended in Section 8.
<b>Environmental Precautions:</b>	Not applicable
<b>Methods for Containment:</b>	Evacuate area for 2000 foot (600 m) radius. Stay out of vapor cloud.
<b>Methods for Clean-Up:</b>	Wear all protective equipment recommended in Section 8. Eliminate source of ignition.
<b>Other Information:</b>	Allow to vaporize and disperse to atmosphere.



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### SECTION 7: HANDLING AND STORAGE

<b>Handling:</b>	To be handled by trained personnel only, using equipment specifically designed for LNG, and following approved operating procedures.
<b>Storage:</b>	Store only in vessels designed for LNG storage, and follow approved operating procedures. Store in a cool, dry, well ventilated place, out of direct sunlight, and away from heat, sparks and ignition sources.

### SECTION 8: EXPOSURE CONTROL, PERSONAL PROTECTION

<b>Exposure Limits:</b>	Simple asphyxiant - Maintain minimum 19.5% oxygen (O <sub>2</sub> ) content (below 19.5% O <sub>2</sub> is considered to be O <sub>2</sub> deficient).		
	<b><u>Constituent</u></b>	<b><u>ACGIH (8-hour TWA)</u></b>	<b><u>WorkSafeBC (8-hour TWA)</u></b>
	<b><i>Methane</i></b>	<i>Minimum O<sub>2</sub> content</i>	<i>1000 ppm</i>
	<b><i>Ethane</i></b>	<i>Minimum O<sub>2</sub> content</i>	<i>1000 ppm</i>
	<b><i>Propane</i></b>	<i>Minimum O<sub>2</sub> content</i>	<i>1000 ppm</i>
	<b><i>Nitrogen</i></b>	<i>Simple asphyxiant</i>	<i>Simple asphyxiant</i>
<b>PPE:</b>	Ensure use of proper PPE at all times when handling this product.		
<b>Eye/face:</b>	Face shield with other eye protection (safety glasses with side shields)		
<b>Skin:</b>	Insulated gloves, safety work boots, protective coveralls I clothing (e.g., Nomex coveralls).		
<b>Respiratory:</b>	Supplied air respiratory protection to be used (airline or self-contained breathing apparatus) in cases of oxygen deficient atmospheres		
<b>Other Considerations:</b>	Use extreme care in handling due to high flammability and risk of cryogenic burns.		
<b>Engineering Controls:</b>	Provide electrical ground for all parts of handling system. Provide adequate ventilation to maintain oxygen greater than 19.5% and methane less than 1% (which is approximately less than 20% of the methane lower explosive limit). Use of CGI is mandatory since product is odorless.		

### SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

<b>Molecular Formula:</b>	CH <sub>4</sub>	<b>Melting Point:</b>	-182.5°C
<b>Flash Point (°C):</b>	-187.8	<b>Density (g/ml):</b>	0.45 at boiling point
<b>Physical State:</b>	Liquid	<b>Vapor Pressure:</b>	466,000 mm Hg @ 25°C
<b>Color:</b>	Colorless	<b>Evaporation Rate:</b>	Rapid
<b>Odor:</b>	Odorless	<b>Solubility in water (20°C):</b>	24.4 parts per million (wt)
<b>Odor Threshold (ppm):</b>	Not available	<b>pH:</b>	Not applicable
<b>Vapor Density:</b>	>1 @-112 degrees C (Air= 1)	<b>Partition Coefficient:</b>	Octanol/water: 1.09 LogK <sub>0w</sub>
<b>Boiling Point (°C):</b>	-161.5	<b>Auto-ignition Temperature:</b>	537 oc (Gas Phase)
<b>Freezing Point (°C):</b>	-182.5	<b>Flammability (solid, gas):</b>	Flammable gas
<b>Lower Explosion Limit:</b>	5% (by volume, gas phase)	<b>Specific Gravity:</b>	0.45 (water = 1)
<b>Upper Explosion Limit:</b>	15% (by volume, gas phase)	<b>Percent Volatile (by volume):</b>	99%



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### SECTION 10: STABILITY AND REACTIVITY

<b>Chemical Stability:</b>	Yes
<b>Incompatible Materials:</b>	Strong oxidizers (e.g. peroxides, perchlorates), halogens (e.g. chlorine, bromine)
<b>Hazardous Decomposition Products:</b>	None known
<b>Reactivity (and Under What Conditions):</b>	None known
<b>Conditions to Avoid:</b>	Static discharge, sparks, open flames/other ignition sources

### SECTION 11: TOXICOLOGICAL INFORMATION

<b>LD50:</b>	Not available
<b>LC50:</b>	Not available
<b>Acute Effects:</b>	Liquid or cold gas contact with skin or eyes could cause freezing or severe cryogenic burns. After vaporization, contact with burning gas may cause burns. Inhalation produces weak depressant effects on the CNS at high gaseous concentrations approaching the lower flammability limit.
<b>Chronic Effects:</b>	Not available
<b>Carcinogenicity:</b>	Not considered carcinogenic by IARC, NTP, ACGIH or OSHA.
<b>Reproductive Effects:</b>	Not available
<b>Teratogenicity:</b>	Not available
<b>Mutagenicity:</b>	Not available
<b>Irritant:</b>	Not available
<b>Sensitizer:</b>	Not available
<b>Synergistic Effects:</b>	Not available

### SECTION 12: ECOLOGICAL INFORMATION

<b>Ecotoxicity:</b>	Not applicable
<b>Persistence/ Degradability:</b>	Not applicable
<b>Bioaccumulation/ Accumulation:</b>	Not applicable

### SECTION 13: DISPOSAL CONSIDERATIONS

<b>Disposal:</b>	Allow to vaporize and disperse to the atmosphere.
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### SECTION 14: TRANSPORTATION INFORMATION

<b>TOG Classification:</b>	2.1 Flammable Gases
<b>UN/PIN Number:</b>	1972
<b>Shipping Name:</b>	Methane, Refrigerated Liquid, or Natural Gas, Refrigerated Liquid with high methane content.
<b>Special Shipping Information:</b>	Transport only in shipping container designed for LNG and follow approved operating procedures.



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## Liquefied Natural Gas (LNG)



### SECTION 15: REGULATORY INFORMATION

**WHMIS Class:** A- Compressed Gas; 81 -Flammable and Combustible Material- Division 1 Flammable Gases

### SECTION 16: OTHER INFORMATION

<b>National Fire Protection Association (NFPA 704) Ratings:</b>	<b>LEGEND</b>
Health 2	0 = minimal hazard
Flammability 4	1 = slight hazard
Instability 0	2 = moderate hazard
(For methane from NFPA 325)	3 = severe hazard
	4 = extreme hazard

<b>Prepared by:</b>	
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**Additional Information and Comments:** The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for their own particular use.

*Information Sources: Various*

