

SUBSTANCE INFORMATION SHEET

LIQUEFIED NATURAL GAS:

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1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: LIQUEFIED NATURAL GAS
SYNONYMS, TRADE NAMES: LNG, Methane, Natural Gas
SUPPLIER ADDRESS: Portal Gas Services
Part of the Hardstaff Group
Hillside, Gotham Road
Kingston-on-Soar
Nottingham, NG11 0DF
CONTACT TELEPHONE NUMBER: 0115 983 0093
EMERGENCY TELEPHONE NO. 07970 722126

2. PRODUCT COMPONENTS

INGREDIENT NAME	CAS No.	CONTENTS (mol % approx)	HEALTH RISK
METHANE	74-82-8	typically 95.1%	
ETHANE	74-84-0	4.5%	
PROPANE	74-98-6	0.3%	
NITROGEN	7727-37-9	0.1%	

3. HAZARDS IDENTIFIED

Extremely Flammable.
Gas is an asphyxiant.

4. FIRST AID MEASURES

INHALATION: NEVER MAKE AN UNCONSCIOUS PERSON VOMIT OR DRINK FLUIDS! Remove affected person immediately from source of exposure. Provide rest, warmth and fresh air. When breathing is difficult, properly trained personnel may assist affected person by administering 100% oxygen. If breathing stops, provide artificial respiration. Get medical attention.

INGESTION: Remove affected person immediately from source of exposure. Get medical attention. Provide fresh air, warmth and rest, preferably in comfortable upright sitting position.

SKIN: Immediately remove contaminated clothing. Speed in removing material from skin is of extreme importance. If frostbite, freezing or cryogenic burns occur, warm affected area in warm water (ideally 40°C, NOT hotter than 46°C. Never use dry heat). Remove any constrictions, i.e. rings. Raise effected area and wrap in sterile dressing. Allow circulation to return naturally. Get medical attention immediately.

EYES: Wash with large amounts of water or saline solution. Get medical attention immediately. Continue to rinse.

5. FIRE AND EXPLOSION

EXTINGUISHING MEDIA: SPECIAL FIRE FIGHTING PROCEDURES:	Dry powder, Foam Cool containers exposed to flames with water from the side until well after the fire is out. Avoid breathing fire vapours. Keep up-wind to avoid fumes.
UNUSUAL FIRE & EXPLOSION HAZARDS	Forms explosive mixtures with air. Vapours may ignite. May travel considerable distance to source of ignition and flash back. Warm vapour is lighter than air (when warmer than -112°C) and cold vapour is heavier than air (when colder than -112°C)
HAZARDOUS DE- COMPOSITION PRODUCTS: PROTECTIVE MEASURES IN FIRE:	Oxides of Carbon Protective clothing and pressure-demand breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS DURING SPILL:	Wear suitable protective clothing, gloves and safety goggles.
PRECAUTIONS TO: PROTECT ENVIRONMENT:	Prevent product from escaping into watercourses and sewers.
SPILL CLEANUP MEASURES:	Stop leak if possible without risk. DO NOT touch spilled material. Ventilate well.

7. HANDLING AND STORAGE

USAGE PRECAUTIONS:	Keep away from heat and sources of ignition. Ventilate well, avoid breathing vapours. Use approved respirator if air contamination is above accepted level. Equipment and materials shall be designed and specified for LNG application, and comply with recognised safety standards. Equipment shall be subject as a minimum, to statutory maintenance and testing standards. Storage and transfer systems shall operate at positive pressures, and have adequate and unrestricted ventilation. Vehicle applications shall comply with appropriate industry standards. Vehicles shall operate, park, and be maintained in well-ventilated areas.
STORAGE PRECAUTIONS:	Keep away from heat and sources of ignition. Ground container and transfer equipment to eliminate static electric sparks. Unrestricted ventilation.
STORAGE CRITERIA:	Flammable compressed gas storage.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

INGREDIENT NAME:	CAS No.	LT EXP (8hrs)	ST EXP (15 min)
METHANE	74-82-8	Asphyxiating	No std.
ETHANE	74-84-0	No std.	No std.
PROPANE	74-98-6	Asphyxiating	Asphyxiating
NITROGEN	7727-37-9	Asphyxiating	Asphyxiating

VENTILATION: Explosion-proof general and local exhaust ventilation.

PROTECTIVE CLOTHES:	Wear insulating gloves, leather boots and long sleeved shirts or jackets.
EYE PROTECTION:	Wear approved eye protection according to BS 2092 or equivalent standard. Contact lenses should NOT be worn when working with this chemical!
OTHER PROTECTION:	Respiratory protection must be worn if air contamination exceeds acceptable level. Wear air supplied respiratory protection.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE	Liquid
COLOUR	Colourless
ODOUR	Odourless
SOLUBILITY DESCRIPTION	Slightly soluble in water.
DENSITY/SPECIFIC GRAVITY (kg/m³)	435
MOL. WEIGHT	17
BOILING POINT(°C)	-160
MELTING POINT (°C)	-183
FLASH POINT (°C)	-188
AUTOIGNITION TEMP (°C)	No Data Available
FLAMMABILITY LIMIT - LOWER (% Vol)	4.5
FLAMMABILITY LIMIT - UPPER (%Vol)	No Data Available
VAPOUR DENSITY (air=1)	0.55
VAPOUR PRESSURE (bar)	1.013 @ -160°C
VISCOSITY (cP)	0.20

10. STABILITY AND REACTIVITY

STABILITY:	Stable under ambient conditions.
CONDITIONS TO AVOID:	Avoid heat, and sources of ignition. Avoid contact with Oxidizing Agents and Halogens.
MATERIALS TO AVOID:	Bromine, Chlorine, Chlorine Dioxide, Fluorine, Oxygen, Oxygen Difluoride.
HAZARDOUS DE-COMPOSITION PRODUCTS:	Oxides of Carbon

11. TOXICOLOGICAL INFORMATION

HEALTH WARNINGS	Methane is absorbed by the lungs and most is excreted unchanged in expired air. In high concentrations it is a simple asphyxiant. It is particularly inert and has no demonstrated physiological or toxicological effects.
ROUTE OF ENTRY:	Inhalation, Ingestion, Skin and/or Eye contact.
TARGET ORGANS:	Lungs, Skin and Gastro-intestinal tract.
MEDICAL SYMPTOMS:	May cause headaches, blurred vision, dizziness, drowsiness, nausea and vomiting if inhaled. High vapour concentrations may lead to unconsciousness. Contact with liquid form can cause Frostbite, cold burns and Blisters.

12. ECOLOGICAL INFORMATION

The immediate potential danger from Liquefied Natural Gas to the environment is from the effects of fire and explosion, which could kill or injure wildlife and scorch or burn habitats. Methane emissions contribute to global warming.

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHODS: Eliminate all sources of ignition and use forced ventilation to keep gas concentration below explosive mixture range. Slowly vent excess gases or a leaking cylinder to atmosphere in a safe open space.

14. TRANSPORT INFORMATION**LABEL OF CONVEYANCE**

PROPER SHIPPING NAME: METHANE REFRIGERATED LIQUID

ROAD TRANSPORT:

UN No. ROAD: 1972
 ADR CLASS No.: 2
 ADR ITEM No.: 3F
 HAZARD No. (ADR): 223
 HAZARD CLASS (ADR): 2: Gases; Compressed, liquefied or dissolved under pressure.
 HAZCHEM CODE: 2WE
 MARGINAL: 2201
 CEFIC TEC(R) No.: 622-1

RAIL TRANSPORT:

RAIL CLASS No.: 2
 RAILROAD PT.: 3F

SEA TRANSPORT:

SEA CLASS No.: 2.1
 IMDG PAGE No.: 2156
 MFAG Table No.: 620

AIR TRANSPORT: Forbidden

15. REGULATORY INFORMATION

RISK PHRASES: R12 Extremely Flammable

SAFETY PHRASES: S1 Keep locked up
 S9 Keep container in a well ventilated place
 S16 Keep away from sources of ignition - No Smoking
 S33 Take precautionary measures against static discharges.

UK REGULATORY REFERENCES:

Chemicals (Hazard information and Packaging for Supply) Regulations

GUIDEANCE NOTES:

Attention is drawn to the Gas Safety (Installation and Use) Regulations 1994, relevant Transco Standards and appropriate Transco standards codes of practice and guidance notes, all of which deal with the design application and safe use of gas and gas fired equipment. Attention is also drawn to The Institution of Gas Engineers Utilisation Procedures, including IGE/UP/5.

16. OTHER INFORMATION

INFORMATION SOURCES: Transco Safety Data Sheet
 Chart Industries manual P/N 3835849 Rev C 5/02