



**MATERIAL SAFETY DATA SHEET NATURAL GAS****Section 1: Identification**

Chemical Name	Methane		
Synonyms	Methane or natural gas; Marsh gas; Methyl hydride; CH ₄ ; Fire Damp;	Trade Name	Compressed Natural Gas (CNG) and Piped Natural Gas (PNG)
Formula	CH ₄	Product Identifier	CAS No:74-82-8 UN. No: UN 1971

Use of Substance or Mixture: Mixture**Distributor's Name, Address & Emergency Telephone Number:**

Indraprastha Gas Limited (IGL), IGL Bhawan, Plot No.04, Community Centre, RK Puram, Sec-09, New Delhi, 110022, Emergency Phone Number 155216, 1800111817

Section 2: Hazard Identification

Classification of Substance/Mixture (GHS)	FLAMMABLE GASES- Category 1 GASES UNDER PRESSURE- Compressed Gas SIMPLE ASHPHYXIANT
Label Elements	DANGER  
Signal Word	DANGER
Hazard Statement	H220 - Extremely Flammable Gas H280 - Contains Gas Under Pressure; May Explode If Heated OSHA-H01 - May Displace Oxygen And Cause Rapid Suffocation. CGA-HG04 - May Form Explosive Mixtures With Air

Section 3: Composition/Information of Ingredients

Hazardous Component (Specific Chemical Identity, Common Names)	Product Identifier	% (Optional)
METHANE	CH ₄	>85 to 90%
ETHANE	C ₂ H ₆	(3-8)
PROPANE	C ₃ H ₈	(1-2)
BUTANE	C ₄ H ₁₀	<1
PENTANE	C ₅ H ₁₂	<1
CARBON DIOXIDE	CO ₂	<1
HYDROGEN SULPHIDE	H ₂ S	<1
NITROGEN	N ₂	(0.5)
HELIUM	HE	<0.5

Section 4: First Aid Measures

RISK	SYMPTOMS	PREVENTION	FIRST AID
Inhalation	On loss of containment this substance can cause suffocation by lowering the oxygen	Use ventilation. Use breathing protection.	Fresh air, rest. Artificial respiration may be needed. Refer for medical attention,



	content of the air in confined areas.		doctor advice and hospitalisation.
Skin Contact	CONTACT WITH LIQUID: frostbite CONTACT WITH PRESSURIZED GAS: may cause physical damage to skin.	COLD-INSULATING GLOVES	ON FROSTBITE: rinse with plenty of water, do NOT remove clothes. Refer for medical attention .The person exposed should be treated for shock and seek immediate medical treatment.
Eye Contact	ON CONTACT WITH LIQUID: FROSTBITE.	Wear safety goggles.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for immediate medical treatment.
Ingestion	<i>This material is a gas at standard temperature and pressure and ingestion is unlikely.</i>		
Section 5: Fire Fighting Measures			
Suitable Extinguishing Media	Carbon dioxide, Dry chemical powder, Water spray or fog		
Special Hazards arising from Substance or Mixture			
Fire Hazard	EXTREMELY FLAMMABLE GAS. May catch fire when mixed with air and get in contact with spark/flame. Flammable vapors may spread from leak, creating an explosive reignition hazard. Vapors can be ignited by pilot lights, other flames, smoking, sparks, heaters, electrical equipment, static discharge, or other ignition sources at locations distant from product handling point. Explosive atmospheres may linger. Before entering an area, especially a confined area, check the atmosphere with an appropriate device.		
Explosion Hazard	Contains gas under pressure. Extremely flammable gas. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Could be potentially hazardous if uncontrolled in a confined space.		
Reactivity	EXTREMELY FLAMMABLE GAS. Forms explosive mixtures with air and oxidizing agents.		
Fire Fighting Instructions	Danger! FLAMMABLE, HIGH PRESSURE GAS. Evacuate all personnel from the danger area. Shut off supply; if not possible and no risk to surroundings, let the fire burn itself out. In other cases extinguish with water spray, dry chemical powder, carbon dioxide extinguishers. In case of fire: keep cylinder cool by spraying with water. Combat fire from a sheltered position and maintain a safe distance upwind and uphill of the leak. Remove ignition sources if safe to do so. Remove containers from area of fire if safe to do so.		

**Section 6: Accidental Release Measures****Personal Precautions, Personal Protective Equipment and Emergency Procedures:**

Danger: EXTREMELY FLAMMABLE GAS. Forms explosive mixtures with air and oxidizing agents. See section 5. Evacuate personnel to a safe area. Appropriate self-contained breathing apparatus may be required. Approach suspected leak area with caution. Stay upwind and warn of possible downwind explosion hazard. Avoid breathing vapor. Avoid contact with eyes, skin, or clothing. Remove all sources of ignition including internal combustion engines and power tools, if safe to do so. Reduce gas with fog or fine water spray. Stop flow of product if safe to do so. Ventilate area or move container to a well-ventilated area. Flammable gas may spread from leak. Before entering the area, especially a confined area, check the atmosphere with an appropriate device.

Environment Precautions (Method of Containment and Clean up):

Prevent waste from contaminating the surrounding environment. Prevent soil and water pollution. Dispose of contents/container in accordance with local/regional/national/international regulations.

Section 7: Handling and Storage**Precautions for Safe Handling:**

Ensure strict adherence to use of personal protective equipment and exercise care when opening bleeders, sampling ports, vent point, drain points as the natural gas may be at elevated temperatures and/or pressures.

Use non-sparking tools.

Ensure natural gas handling container, equipment/machine is adequately earthed.

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources.

Use with adequate ventilation available.

Ensure no smoking.

Use only explosion-proof equipment.

Wear leather safety gloves and safety shoes when handling cylinders. Protect cylinders from physical damage; do not drag, roll, slide or drop. While moving cylinder, always keep in place removable valve cover. Never attempt to lift a cylinder by its cap; the cap is intended solely to protect the valve. When moving cylinders, even for short distances.

Conditions for Safe Storage including incompatibilities:

Post "No Smoking/No Open Flames" signs in storage and use areas. There must be no sources of ignition. Separate packages and protect against potential fire and/or explosion damage following appropriate codes and requirements e.g. OISD 179, PESO -Gas Cylinder Rules, PNGRB T4S Regulations and other applicable NFPA etc.

Store in a well-ventilated place.

Store away from incompatible materials.

GROUND AND BOND CONTAINER, TRANSFER LINE, AND RECEIVING CONTAINER. KEEP AWAY FROM HEAT, SPARKS, FLAME, AND OTHER SOURCES OF IGNITION.

Section 8: Exposure Controls/Personal Protections**Control Parameters****ACGIH TLV-TWA (ppm)**

Not established

OSHA PEL TWA (mg/m³)

Not established

OSHA PEL TWA (ppm)

Not established

Exposure Control**Engineering Controls:**

Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas concentrations below any lower explosive limits. Use explosion-proof ventilation equipment. Follow appropriate confined space entry procedures. Use explosion proof general ventilation and lighting in classified/controlled areas. Be sure explosion proof flashlights and equipment are used.



Hand Protection:	Based on site risk assessment use of leather or cotton gloves along with flame retardant clothing should be recommended in any situation where pressurized natural gas is handled during non-routine operations.
Eye Protection:	Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to natural gas. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with sideshield
Skin and Body Protection:	Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.
Respiratory Protection:	When workplace conditions (the hazard and potential for exposure based on site risk assessment) warrant respirator use, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.


Section 9: Physical/Chemical Characteristics

Physical State	Gas (compressed or liquefied gas).	Colour	Colourless
Boiling Point	-161.48°C (-258.7°F)	Freezing Point	NA
Vapor Pressure (mm Hg)	gaseous at 60 o F and 1 atmosphere	Melting Point	-82.45°C (-116.4°F)
Vapor Density (Air=1)	0.55-0.60	Evaporation Rate	N/A
Solubility in Water	No data available	Appearance and Odor	Colourless & Odourless
Auto Ignition Temperature	537° C (998.6°F)	Specific Gravity (H2O=1)	0.554 (LNG)
Flammability	Extremely flammable gas	LEL	5%
Oxidising Properties	No data available	PH	Not classified.
Explosion Data: Sensitivity to Impact	No data available	Explosion Data: Sensitivity to Static Discharge	Flammable
Hazardous Combustion Products	Carbon Monoxide, Carbon Dioxide, Nitrogen Oxides, Sulphur Dioxide, Aldehydes		

Section 10: Stability and Reactivity

Reactivity	When natural gas is mixed with appropriate amounts of oxidizing agents, including air and oxygen, in the presence of an ignition source, an uncontrolled explosive reaction can occur
Chemical Stability	Stable under normal conditions.
Possibility of Hazardous Reactions	Can form explosive mixture with air can burn or explode. However, under normal conditions of storage and use, hazardous reactions will not occur.
Incompatible Materials	Oxidizers.



Hazardous Decomposition Products	Thermal decomposition may produce: Carbon dioxide. Carbon monoxide water vapours, hydrogen. However, under normal conditions of storage and use, hazardous decomposition products shall not be produced.
Section 11: Toxicological Information	
Information on Toxicological Effects	Not Classified
Section 12: Ecological Information	
Information on Ecological Effects	No Ecological effect caused by this product.
Section 13: Disposal Considerations	
Waste Disposal Methods	The generation of waste /fugitive leakage should be avoided or minimized wherever possible. Allow to dissipate to the atmosphere in the event of any emergency /exigency under controlled conditions. Care must be taken to ensure complete dissipation of the gas to a concentration below its flammable limits.
Waste Treatment Methods	NA
Section 14: Transport Information	
Hazard Classes	Hazard class- 2.1 Class Flammable gas
NFPA Hazard Label	
Special Transport Precautions	Follow all traffic and CMVR rules. Check the tyre condition of the vehicle. Hazchem code to be painted both side of the vehicle.
Section 15: Regulatory Information	
National Regulations	PNGRB- Petroleum and Natural Gas Regulatory Board –T4S regulations. PESO- Petroleum and Explosive Safety Organisation- Gas Cylinder Rules.
International Regulations	NFPA 52,ISO 16923
Section 16: Other Information	
16.1 All rights reserved.	
16.2 Emergency Response Guide (ERG) Number: 115 (UN1971) – Please do refer the latest version of Emergency Response Guide.	
16.3 Indraprastha Gas Limited expects and asks users of this product (CNG/LNG/PNG) to study this material safety data sheet (MSDS) and become aware of the product hazards and safety information and correlate its use accordingly.	
16.4 DISCLAIMER: To the best of our knowledge, the information contained herein is accurate. The published material is being distributed without warranty of any kind, either expressed or implied. Neither Indraprastha Gas Limited nor any of its employees, shall be responsible for the interpretation and use of the information contained in this material safety data sheet. It shall be the user's obligation and responsibility to ultimately determine use of this information and the conditions of safe use of the product.	