

Material Safety Datasheet

Material Safety Data Sheet

1. Liquefied Natural Gas (LNG)

| | | | |
|---|---------------------|--|-------------------|
| 1. | Chemical Identified | Safety Data Sheet | |
| Chemical Name: Liquefied Natural Gas (LNG) | | Chemical Classification | 2 |
| Synonyms: Liquefied Natural Gas (LNG) | | Trade Name: Liquefied Natural Gas (LNG) | |
| Formula: Mixture of Hydrocarbons: Methane (CH4), Ethane (C2H6) | | C.A.S. No. 74-82-8 | U.N. No.: UN 1972 |

Shipping Name: **Liquefied Natural Gas (LNG)**

Codes/Label: **Flammable Gas - Class 1**

Hazchem No.: **2YE**

Regulated identification.....

Hazardous Waste

I.D. No.:

| Hazardous Ingredients | C.A.S. No. | Hazardous Ingredients | C.A.S. No. |
|-----------------------|----------------|-----------------------|----------------|
| 1. Methane | 74-82-8 | 3. Propane | 74-98-6 |
| 2. Ethane | 74-84-0 | | |

2. Physical and chemical data

| | | | |
|------------------------|-----------------|----------------------------------|--|
| Boiling Range/Point | - 161 °C | Physical State: Liquid | Appearance: Colour less |
| Melting/Freezing Point | - 182 °C | Vapour Pressure | Odor mm/Hg: Odorless. Ethyl Mercaptan |

| | | |
|---|--|---|
| | @ 35°C | (C ₂ H ₅ SH) is added for odorisation |
| Vapour Density (Air = 1): 0.6 to 0.8 | Solubility in water @ 30°C: Not Soluble / Slight / Soluble | Others: ----- |
| Specific Gravity Water-1: 0.62 to 0.70 | PH : ----- | |
| 3 Fire and Explosion Hazard data | | |
| Flammability Yes | LEL 5 % | %Flash Point 0° : -188 ° C |
| TDG Flammability 1 | UEL 15 % | Auto ignition: 540 ° C |
| Explosion Sensitivity to impact: | May Explode | Explosion Sensitivity to Static Electricity: May Explode |
| | | Hazardous Combustion Products: CO₂ + Traces of oxides, CO (If incomplete Combustion) |
| Hazardous Polymerization: Will not occur | | |
| Combustible Liquid: NA | Explosive Material: Yes | Corrosive: NA |
| Flammable Material: Yes | Oxidizer: NA | Others |
| Pyrophoric Material: NA | Organic Peroxide: NA | |
| 4. Reactivity Data | | |
| Chemical Stability: Stable | | |
| Incompatibility with other Material : Yes. Readily forms explosive mixtures with air or oxygen. Avoid contact with strong oxidizing agents | | |
| Reactivity: Strong oxidizing agents increase risk of fire (peroxides, perchlorates, chlorine, liquid oxygen). | | |
| Hazardous Reaction Product: Incomplete combustion yields Carbon Monoxide | | |
| 5. Health Hazard Data | | |
| Routes of Entry: Inhalation | | |

Effects of Exposure Symptoms: **Inhalation may cause asphyxiation by displacing or partially displacing the air required to support life.**

Emergency Treatment:

INHALATION: Remove IP to fresh air, use respirator guards during normal exposure and breathing apparatus in case of major exposure. If breathing is difficult, have trained person to administer oxygen. If respiration stopped, administer CPR and seek medical attention immediately.

TLV (ACGIH): **1000 ppm** (Methane is a simple asphyxiant (SA). Oxygen levels should be maintained above 19.5 %.)

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Permissible Exposure Limit: Methane is a simple asphyxiant (SA). Oxygen levels should be maintained above 19.5%.

LC 50 Mouse: 326 g / m³ – 2 h

| NEPA Hazard Signals | Health | Flammability | Stability | Special |
|---------------------|--------|--------------|-----------|---------|
| | 3 | 4 | 0 | - |

6. Preventive Measures

Personnel Protective equipment: **Safety Goggles, Face Shield, Self-Contained Breathing Apparatus, Fire Retardant Clothing, Hand gloves – All of LNG specific only**

Handling and storage Precautions:

- **Keep away from sources of ignition.**
- **Avoid breathing gas, use with adequate ventilation. Wear approved respiratory Protection if there is potential for exposure above the exposure limits.**
- **Avoid static build up.**
- **Monitoring concentration of Natural Gas in atmosphere with gas measuring equipments**

While draining/venting.

- Avoid wearing contact lenses during handling of Natural Gas.

STORAGE:

- Keep away from source of ignition.
- Use of appropriate warning / caution boards.
- Store cylinders in well ventilated, low fire risk area.

7. Emergency and First aid measure

| | |
|----------|---|
| Fire | Fire Extinguishing: Dry Chemical Powder, Carbon Dioxide. Water ineffective, but may be used to keep surrounding area cool |
| Fire | <p>Special procedures:</p> <p>Cordoned off area. Evacuate all unnecessary personnel.</p> <p>Eliminate all sources of ignition.</p> <p>Best procedure is to shut off supply.</p> <p>Wear self - contained breathing apparatus and full protective clothing.</p> <p>Use water spray to keep fire exposed area cool</p> |
| | Unusual Hazards: Mixture of natural gas and air in certain proportions can result in an explosive mixture. |
| Exposure | First Aid measures: Refer 5. Health Hazard Data |
| | Antidotes/Dosages ----- |
| Spills | <p>Steps to be taken: (in case of Leakage)</p> <p>Evacuate unnecessary personnel upwind of the leakage area, remove or eliminate ignition sources, minor leaks can be detected with soap solution applied at suspected leak points, never use flame to detect presence of Natural Gas. Suitable Personnel Protective Equipments to be used.</p> |

Waste disposal Method : **NA**

8. ADDITIONAL INFORMATION / REFERENCES
