1. Identification of the substance/mixture and of the company/undertaking:

1.1. Product identifier: Methane

<table>
<thead>
<tr>
<th>EC No</th>
<th>CAS No</th>
<th>EC Name</th>
<th>Molecular Formula</th>
</tr>
</thead>
<tbody>
<tr>
<td>200.812.7</td>
<td>74-82-8</td>
<td>Methane</td>
<td>CH4</td>
</tr>
</tbody>
</table>

10ppm Methane in Air  Pt. No. 99171
800ppm Methane in Air  Pt. No. 99125
0.45% Methane in Air  Pt. No. 99127
1.0% Methane in Air  Pt. No. 99121
2.5% Methane in Air  Pt. No. 99159

1.2. Relevant identified uses of the substance or mixture and uses advised against:

Industrial and professional use only. Perform risk assessment prior to use.

1.3. Details of the supplier of the safety data sheet, company identification:

Gas Measurement Instruments Ltd
Inchinnan Business Park
Renfrew
PA4 9RG
Contact No: 0141 812 3211
Email address: sales@gmiuk.com

1.4. Emergency contact details:

Opening hrs: 9:00 a.m -5:00 p.m
Contact No: 0141 812 3211

2. Hazards Identification:

2.1. Classification of the substance and mixture:

Classification according to Regulation (EC) No 1272/2008 (CLP):
Press. Gas (Compressed gas)- Contains gas under pressure; may explode if heated.
Flam. Gas 1- Extremely Flammable Gas.

Classification according to Directive 67/548/EEC & 1999/45/EC:
F+; R12- Extremely Flammable.

Classification according to The Seveso III Directive (Directive 2012/18/EU repealing Directive 96/82/EC (Seveso II) from 1 June 2015):
Seveso Substance – Yes.
Seveso Categories- P2- Flammable Gases.
2.2. Label elements: Hazard pictograms:

Signal word- Danger

**Hazard Statements:**
H280 – Contains gas under pressure; may explode if heated.
H220 – Extremely flammable gas.

**Precautionary Statements:**

**Precautionary Statement Prevention:**
P210      Keep away from heat/sparks/open flames/hot surfaces – No Smoking.

**Precautionary Statement Response:**
P377       Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
P381       Eliminate all ignition sources if safe to do so.

**Precautionary Statement Storage:**
P403       Store in a well-ventilated place.

2.3. Other Hazards:
High pressure gas.
Can cause rapid suffocation.
Extremely flammable.
May form explosive mixtures in air.
Immediate fire and explosion hazard exists when mixed with air at concentrations exceeding the lower flammability limit (LFL).
High concentrations that can cause rapid suffocation are within the flammable range and should not be entered. Avoid breathing gas.
Self-contained breathing apparatus (SCBA) may be required.
Environmental Effects: Not harmful.

3. Composition/information on ingredients:

Substance/ Mixture: Mixture.

<table>
<thead>
<tr>
<th>Components</th>
<th>EC No</th>
<th>CAS No</th>
<th>Concentration</th>
<th>Part No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methane</td>
<td>200.812.7</td>
<td>74-82-8</td>
<td>10ppm</td>
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<tr>
<td>Methane</td>
<td>200.812.7</td>
<td>74-82-8</td>
<td>2.5%</td>
<td>99159</td>
</tr>
</tbody>
</table>
4. **First Aid Measures:**

4.1. **General advice:**
   Remove victim to uncontaminated area wearing self-contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration breathing has stopped.

   **Skin contact:** Not applicable.

   **Ingestion:** Ingestion is not considered a potential route of exposure.

   **Inhalation:**
   In case of shortness of breath, give oxygen. Move to fresh air. If breathing has stopped or is labored, give assisted respiration. Supplemental oxygen may be required. If the heart has stopped, trained personnel should begin cardiopulmonary resuscitation immediately. Seek medical advice.

4.2. **Most important symptoms and effects, both acute and delayed:**
   Exposure to oxygen deficient atmosphere may cause the following symptoms: dizziness, salivation, nausea, vomiting, and loss of mobility/consciousness.

4.3. **Indication of any immediate medical attention and special treatment needed:**
   No data available.

5. **Fire-fighting measures:**

5.1. **Extinguishing media:**
   Suitable extinguishing media: use extinguishing media appropriate for surrounding fire. For small fire use dry chemical and for large fire use water spray or fog.

5.2. **Special hazards arising from the substance or mixture:**
   Combustion by-products may be toxic. Upon exposure to intense heat or flame cylinder will vent rapidly and or rupture violently. Keep containers and surroundings cool with water spray. Extinguish fire only if gas flow can be stopped. If possible, shut off the source of gas and allow the fire to burn itself out. Do not extinguish a leaking gas flame unless absolutely necessary. Spontaneous/explosive re-ignition may occur. Extinguish any other fire. Move away from container and cool with water from a protected position. Keep adjacent cylinders cool by spraying with large amounts of water until fire burns itself out. If flames are accidentally extinguished, explosive re-ignition may occur; appropriate measures should be taken (e.g. total evacuation to protect persons from cylinder fragments and toxic fumes should a rupture occur).

5.3 **Advice for fire-fighters:**
   As an immediate precautionary measure, isolate spill or leak area for at least 100 meters (330 feet) in all directions. LARGE SPILL: Consider initial downwind evacuation for at least 800 meters (1/2 mile). In confined space use self-contained breathing apparatus. Standard protective clothing and equipment (Self Contained Breathing Apparatus) for fire fighters. Standard EN 137 - Self-contained open-circuit compressed air breathing apparatus with full face mask. Standard EN 469 - Protective clothing for firefighters. Standard - EN 659: Protective gloves for firefighters.
6. Accidental release measures:

6.1. Personal precautions, protective equipment and emergency procedures:
Evacuate personnel to safe areas. Remove all sources of ignition. Never enter a confined space or other area where the flammable gas concentration is greater than 10% of its lower flammable limit. Ventilate the area.

6.2. Environmental precautions:
Do not discharge into any place where its accumulation could be dangerous. Should not be released into the environment. Prevent further leakage or spillage if safe to do so.

6.3 Methods and material for containment and cleaning up: Ventilate the area. Approach suspected leak areas with caution. Additional advice: Increase ventilation to the release area and monitor concentrations. If leak is from cylinder or cylinder valve, close the cylinder valve, safely vent the pressure, and purge with an inert gas before attempting repairs.

6.4 Reference to other sections: See sections 8 and 13.

7. Handling and Storage:

7.1. Precautions for safe handling:
Protect cylinders from physical damage; do not drag, roll, slide or drop. Do not allow storage area temperature to exceed 50°C (122°F). Only experienced and properly instructed persons should handle compressed gases/cryogenic liquids. Before using the product, determine its identity by reading the label. Know and understand the properties and hazards of the product before use. When doubt exists as to the correct handling procedure for a particular gas, contact the supplier. Do not remove or deface labels provided by the supplier for the identification of the cylinder contents. When moving cylinders, even for short distances, use a cart (trolley, hand truck, etc.) designed to transport cylinders. Leave valve protection caps in place until the container has been secured against either a wall or bench or placed in a container stand and is ready for use. Use an adjustable strap. Wrench to remove over-tight or rusted caps. Before connecting the container, check the complete gas system for suitability, particularly for pressure rating and materials. Before connecting the container for use, ensure that back feed from the system into the container is prevented. Ensure the complete gas system is compatible for pressure rating and materials of construction. Ensure the complete gas system has been checked for leaks before use. Employ suitable pressure regulating devices on all containers when the gas is being emitted to systems with lower pressure rating than that of the container. Never insert an object (e.g. wrench, screwdriver, pry bar, etc.) into valve cap openings. Doing so may damage valve, causing a leak to occur. Open valve slowly. If user experiences any difficulty operating cylinder valve discontinue use and contact supplier. Close container valve after each use and when empty, even if still connected to equipment. Never attempt to repair or modify container valves or safety relief devices.
Damaged valves should be reported immediately to the supplier. Close valve after each use and when empty. Replace outlet caps or plugs and container caps as soon as container is disconnected from equipment. Do not subject containers to abnormal mechanical shock.
Never attempt to lift a cylinder by its valve protection cap or guard. Do not use containers as rollers or supports or for any other purpose than to contain the gas as supplied. Never strike an arc on a compressed gas cylinder or make a cylinder a part of an electrical circuit. Do not smoke while handling product or cylinders. Never re-compress a gas or a gas mixture without first consulting the supplier. Never attempt to transfer gases from one cylinder/container to another. Always use backflow protective device in piping. Purge air from system before introducing gas. When returning cylinder install valve outlet cap or plug leak tight. Never use direct flame or electrical heating devices to raise the pressure of a container. Containers should not be subjected to temperatures above 50°C (122°F). Ensure equipment is adequately earthed.

7.2. Conditions for safe storage, including any incompatibilities:
Containers should be stored in a purpose build compound which should be well ventilated, preferably in the open air. Observe all regulations and local requirements regarding storage of containers. Stored containers should be periodically checked for general condition and leakage. Protect containers stored in the open against rusting and extremes of weather. Containers should not be stored in conditions likely to encourage corrosion. Containers should be stored in the vertical position and properly secured to prevent toppling. The container valves should be tightly closed and where appropriate valve outlets should be capped or plugged. Container valve guards or caps should be in place. Keep containers tightly closed in a cool, well-ventilated place. Store containers in location free from fire risk and away from sources of heat and ignition. Full and empty cylinders should be segregated. Do not allow storage temperature to exceed 50°C (122°F). Smoking should be prohibited within storage areas or while handling product or containers. Display "No Smoking or Open Flames" signs in the storage areas. The amounts of flammable or toxic gases in storage should be kept to a minimum. Return empty containers in a timely manner.

Technical measures/Precautions: Containers should be segregated in the storage area according to the various categories (e.g. flammable, toxic, etc.) and in accordance with local regulations. Keep away from combustible material. All electrical equipment in the storage areas should be compatible with flammable materials stored. Containers containing flammable gases should be stored away from other combustible materials. Where necessary containers containing oxygen and oxidants should be separated from flammable gases by a fire resistant partition.

7.3. Specific end use(s): Refer to section 1 or the extended SDS if applicable.

8. Exposure controls / personal protection:

8.1 Control parameters:
If applicable, refer to the extended section of the SDS for further information on CSA.

8.2 Exposure controls:
Engineering measures can provide natural or explosion-proof ventilation that is adequate to ensure flammable gas does not reach its lower explosive limit. Personal protective equipment

Respiratory protection: High concentrations that can cause rapid suffocation are within the flammable range and should not be entered.
**Hand protection:** Wear working gloves when handling gas containers. Standard EN 388 - Protective gloves against mechanical risk.

**Eye/face Protection:** Safety glasses recommended when handling cylinders. Standard EN 166 - Personal eye-protection.

**Skin and body protection:** Consider the use of flame resistant anti-static safety clothing. Standard EN ISO 14116 - Limited flame spread materials.

Standard EN ISO 1149-5 - Protective clothing: Electrostatic properties.

Safety shoes are recommended when handling cylinders. Standard EN ISO 20345 - Personal protective equipment - Safety footwear.

Special instructions for Protection and Hygiene: Ensure adequate ventilation, especially in confined areas.

**Environmental Exposure Controls:** If applicable, refer to the extended section of the SDS for further information on CSA.

---

### 9. Physical and chemical properties:

#### 9.1 Information on basic physical and chemical properties:

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Odour</td>
<td>Mixture contains one or more component(s) which have the following odour: No odour warning properties.</td>
</tr>
<tr>
<td>Density</td>
<td>0.0007 g/cm³ (0.044 lb/ft³) at 21 °C (70 °F)</td>
</tr>
<tr>
<td>Relative Density</td>
<td>0.42 (water = 1)</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>-296 °F (-182 °C)</td>
</tr>
<tr>
<td>Boiling point/range</td>
<td>-258 °F (-161 °C)</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Water solubility</td>
<td>0.026 g/l</td>
</tr>
<tr>
<td>Partition coefficient (n-octanol/water)</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>pH</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Particle characteristics</td>
<td>No data available.</td>
</tr>
<tr>
<td>Lower and upper explosion/flammability limits</td>
<td>15 %(V) / 5 %(V).</td>
</tr>
<tr>
<td>Flash point</td>
<td>-306 °F (-187.7 °C)</td>
</tr>
<tr>
<td>Auto ignition temperature</td>
<td>595 °C</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available.</td>
</tr>
</tbody>
</table>

#### 9.2 Other information:

- **Explosive properties:** No data available.
- **Oxidizing properties:** No data available.
- **Molecular Weight:** 16 g/mol.
- **Odour threshold:** No data available.
- **Evaporation rate:** Not applicable.
- **Flammability (solid, gas):** Refer to product classification in Section 2.
- **Specific Volume:** 1.5020 m³/kg (24.06 ft³/lb) at 21 °C (70 °F).
- **Upper flammability limit:** 15 %(V).
- **Lower flammability limit:** 5 %(V).
- **Relative vapour density:** 0.6 (air = 1) Lighter or similar to air.
10. Stability and reactivity:

10.1. Reactivity:
Refer to possibility of hazardous reactions and/or incompatible materials sections.

10.2. Chemical stability: Stable under normal conditions.

10.3. Possibility of hazardous reactions: No data available.

10.4. Conditions to avoid: Heat, flames and sparks. May form explosive mixtures with air and oxidizing agents.


11. Toxicological information:

Likely routes of exposure:

Effects on Eye: No data available.

Effects on Skin: No adverse effect.

Inhalation Effects: In high concentrations may cause asphyxiation. Symptoms may include loss of mobility/consciousness. Victim may not be aware of asphyxiation. Asphyxiation may bring about unconsciousness without warning and so rapidly that victim may be unable to protect themselves.

Ingestion Effects: Ingestion is not considered a potential route of exposure.

Symptoms: Exposure to oxygen deficient atmosphere may cause the following: Dizziness; salivation; nausea; vomiting; loss of mobility/consciousness.

Acute toxicity

Acute Oral Toxicity: No data is available on the product itself.

Acute Inhalation Toxicity: No data is available on the product itself.

Acute Dermal Toxicity: No data is available on the product itself.

Skin corrosion/irritation: No data available.

Serious eye damage/eye irritation: No data available.

Sensitization: No data available.

Chronic toxicity or effects from long term exposures:

Carcinogenicity: No data available.

Reproductive toxicity: No data is available on the product itself.

Germ cell mutagenicity: No data is available on the product itself.

Specific target organ systemic Toxicity (single exposure): No data available.

Specific target organ systemic toxicity (repeated exposure): No data available.

Aspiration hazard: No data available.

12. Ecological information:

12.1 Toxicity:

Aquatic toxicity: No data is available on the product itself.

Toxicity to other organisms: No data is available on the product itself.

12.2. Persistence and degradability: No data available.

12.3. Bioaccumulative potential: No data is available on the product itself.

12.4 Mobility in soil: No data available.
12.5 Results of PBT and vPvB assessment:
If applicable refer to the extended section of the SDS for further information on CSA.

12.6 Other adverse effects: This product has no known eco-toxicological effects.

12.7 Effect on the ozone layer:
   - **Ozone Depleting:** No data available.
   - **Global Warming Potential:**
     Refer to the Intergovernmental Panel on Climate Change (IPCC) for the latest Direct Global Warming Potential Values.

13. Disposal Considerations:

13.1 Waste treatment methods:
Contact supplier and waste disposal company for requirements to safely dispose of the cylinders. Do not discharge into areas where there is a risk of forming an explosive mixture with air. Waste gas should be flared through a suitable burner with flash back arrestor. Refer to the EIGA code of practice Doc. 30 "Disposal of Gases", downloadable at http://www.eiga.org for more guidance on suitable disposal methods.

List of hazardous waste codes: 16 05 04: Gases in pressure containers (including halons) containing dangerous substances.

Contaminated packaging: Return cylinder to supplier.

14. Transport information:
   **ADR**
   UN/ID No.: UN1971.
   Proper shipping name: METHANE, COMPRESSED
   Class or Division: 2.
   Tunnel Code: (B/D).
   Label(s): 2.1.
   ADR/RID Hazard ID no.: 23.
   Marine Pollutant: No.

   **IATA**
   UN/ID No.: UN1971.
   Proper shipping name: Methane, compressed
   Class or Division: 2.1.
   Label(s): 2.1.
   Marine Pollutant: No.

   **IMDG**
   UN/ID No.: UN1971.
   Proper shipping name: METHANE, COMPRESSED
   Class or Division: 2.1.
Label(s): 2.1.
Marine Pollutant: No.
RID
UN/ID No.: UN1971.
Proper shipping name: METHANE, COMPRESSED
Class or Division : 2.
Label(s): 2.1.
Marine Pollutant: No.
Further Information: Avoid transport on vehicles where the load space is not separated from the driver's compartment. Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency. The transportation information is not intended to convey all specific regulatory data relating to this material. For complete transportation information, contact GMI customer service representative at 0141 812 3211.

15. Regulatory information:

<table>
<thead>
<tr>
<th>State Regulations</th>
<th>Listed or exempted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Massachusetts</td>
<td>Material is listed</td>
</tr>
<tr>
<td>New York</td>
<td>Material is not listed</td>
</tr>
<tr>
<td>New Jersey</td>
<td>Material is listed</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>Material is listed</td>
</tr>
</tbody>
</table>

International lists:

- Australia inventory (AICS): This material is listed or exempted.
- China inventory (IECSC): This material is listed or exempted.
- Japan inventory: This material is listed or exempted.
- Korea inventory: This material is listed or exempted.
- Malaysia Inventory (EHS Register): Not determined.
- New Zealand Inventory of Chemicals (NZIoC): This material is listed or exempted.
- Philippines inventory (PICCS): This material is listed or exempted.
- Taiwan inventory (CSNN): Not determined.
- Chemical Weapons Convention List Schedule I Chemicals: Not listed.
- Chemical Weapons Convention List Schedule II Chemicals: Not listed.

WHMIS (Canada):
- Class A: Compressed gas.
- Class B-1: Flammable gas.
16. Other requirements:

**NFPA Rating**

![NFPA Rating Diagram]

**Health hazard**: 0 - Exposure under fire conditions would offer no hazard beyond that of ordinary combustible materials.

**NFPA fire hazard**: 4 - Will rapidly or completely vaporize at normal pressure and temperature, or is readily dispersed in air and will burn readily.

**NFPA reactivity**: 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.

**HMIS III Rating**

**Health**: 0 Minimal Hazard - No significant risk to health.

**Flammability**: 4 Severe Hazards.

**Physical**: 3 Serious Hazards.

Ensure all national/local regulations are observed.

This product is to be used by competent persons and a risk assessment to be conducted prior to the use of this product.

**Hazard Statements:**

H220- Extremely flammable gas.
H280 Contains gas under pressure; may explode if heated.

Indication of Method: Flammable gases Category 1- Extremely flammable gas.

Gases under pressure compressed gas. Contains gas under pressure; may explode if heated.

END OF DOCUMENT