Chemical Safety Data Sheet

1. IDENTIFICATION

Product Name：Methane

Other Name：Methane

Chemical formula: CH_4

Recommended use of the chemical and restrictions on use：General Industrial

Supplier's details：

LINGGAS(TIANJIN),LIMITED

Hexiwu Town, Wuqing District, Tianjin 301714, P.R. China

Tel：022-29437740；Fax：022-29437745；Email：info@linggas.com

Emergency phone number：0532-3889090; 0532-3889191; 022-29437747

2. HAZARDS IDENTIFICATION

Emergency Overview：

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.

GHS Label elements, including precautionary statements:

Potential Health Effects

Inhalation: 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.

Skin contact: No adverse effect.

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

Chronic Health Hazard: Not applicable.

Exposure Guidelines

Primary Routes of Entry: Inhalation

Target Organs: None known.

Symptoms: Exposure to oxygen deficient atmosphere may cause the following symptoms: Dizziness. Salivation. Nausea. Vomiting. Loss of mobility/consciousness.

Aggravated Medical Condition: None known.

Environmental Effects: Not harmful.

3. COMPOSITION/INFORMATION ON INGREDIENTS

component:

Components	CAS No.	Concentration(Volume)
CH4	74-82-8	99.999%

4. FIRST AID MEASURES

General advice:

Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.

Eye contact:

Rinse immediately with plenty of water for at least 15 minutes.

Skin contact:

Wash with water and soap as a precaution.

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 respirations. Supplemental oxygen may be indicated. If the heart has stopped, trained personnel should begin cardiopulmonary resuscitation immediately. Seek medical advice.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media:

All known extinguishing media can be used.

Specific hazards:

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; therefore, appropriate measures should be taken (e.g. total evacuation to protect persons from cylinder fragments and toxic fumes should a rupture occur). Most cylinders are designed to vent contents when exposed to elevated temperatures.

Special protective equipment for fire-fighters:

Wear self contained breathing apparatus for fire fighting if necessary.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:

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 the 10% of its lower flammable limit. Ventilate the area.

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.

Methods for cleaning up:

Ventilate the area. Approach suspected leak areas with caution.

Additional advice:

If possible, stop flow of product. Increase ventilation to the release area and monitor concentrations. If leak is from cylinder or cylinder valve, call the Linggas emergency telephone number. If the leak is in the user's system, close the cylinder valve, safely vent the pressure, and purge with an inert gas before attempting repairs.

7. HANDLING AND STORAGE

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. 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.

Storage：

Containers should be stored in a purpose build compound which should be well ventilated, preferably in the open air. Full containers should be stored so that oldest stock is used first. 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.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering measures：

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: Sturdy work gloves are recommended for handling cylinders. The breakthrough time of the selected glove(s) must be greater than the intended use period.

Eye protection: Safety glasses recommended when handling cylinders.

Skin and body protection: Safety shoes are recommended when handling cylinders. Wear as appropriate: Flame retardant protective clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form:	Compressed gas.
Color:	Colorless gas
Odor:	None.
Molecular Weight:	16g/mol
Relative vapor density:	0.6 (air = 1)
Relative density:	0.42 (water = 1)
Density:	0.044 lb/ft3 (0.0007 g/cm3) at 70 °F (21 °C) Note: (as vapor)
Specific Volume:	24.06 ft3/lb (1.5020 m3/kg) at 70 °F (21 °C)
Boiling point/range:	-161 °C
Critical temperature:	- 82°C
Melting point/range:	-182 °C
Flash point:	-187.7 °C

Autoignition temperature:	595 °C
Upper flammability limit :	15 %(V)
Lower flammability limit :	5 %(V)
Water solubility :	0.026 g/l

10. STABILITY AND REACTIVITY

Stability: Stable under normal conditions.

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

Materials to avoid: Oxygen. Oxidizing agents.

Hazardous decomposition products: Incomplete combustion may form carbon monoxide.

11. TOXICOLOGICAL INFORMATION

Acute Health Hazard:

Ingestion: No data is available on the product itself.

Inhalation: No data is available on the product itself.

Skin: No data is available on the product itself.

12. ECOLOGICAL INFORMATION

Ecotoxicity effects

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

Toxicity to other organisms: No data available.

Persistence and degradability

Mobility: No data available.

Bioaccumulation: No data is available on the product itself.

Further information:

This product has no known eco-toxicological effects.

13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products: Contact supplier if guidance is required. Return unused product in orginal cylinder to supplier. 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.

Contaminated packaging: Return cylinder to supplier.

14. TRANSPORT INFORMATION

UN No：1971

Proper shipping name：Methane

Class：2.1

Risk label： inflammable gas

Packing： gas cylinder

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.

15. REGULATORY INFORMATION

The following laws, regulations and standardshave made theclear legal provisions to the safe use, storage, transportation, loading and unloading, classification and markingof chemicals.

Production safety law of the People's Republic of China;

Occupational Disease Prevention and Treatment of the People's Republic of China;

Environmental Protection Law of the People's Republic of China;

Hazardous Chemicals Control Ordinance;

The list of dangerous chemicals;

The general principles of the classification of dangerous chemicals and the risk of the public（GB 13690-2009）

16. OTHER INFORMATION

Reference:

UN RTDG

Globally Harmonized System of Classification and Labeling of Chemicals

ICSC

Apply date:2013-2-25

Revision Date:2015-12-20

Edit department: Safety and Environmental Protection Department

Data audit unit: LINGGAS TIANJIN LIMITED.

Edit Description: Modify when policies change or every 3 years.