Natural Gas (Methane)

Revision: 6.1 Release Date: 16.06.2020

SECTION 1: Identification of the Hazardous Chemical and of the Supplier

Product name	:	Methane
CAS-No.	:	74-82-8
Synonyms	:	Sales gas, Natural gas, NGV, Methane
Recommended use	:	Fuel gas for industrial, commercial and residential.

Manufacturer Details

Company	:	PETRONAS GAS BERHAD
Address		Level 49, 50 & 51, Tower 1 PETRONAS Twin Towers Kuala Lumpur City Centre 50088 Kuala Lumpur Malaysia
Telephone	:	03 2051 6812 (Corporate Office)

Supplier/Distributor Details

Company	:	GAS MALAYSIA ENERGY AND SERVICES SDN BHD
Address		First Floor, No.5, Jalan Serendah 26/17 Seksyen 26, Peti Surat 7901 40732 Shah Alam Selangor Darul Ehsan Malaysia
Telephone	:	03 5101 2100
Emergency number	:	1 800 88 9119 (Operation Control Centre)

SECTION 2: Hazards Identification

Classification of the hazardous chemical

Flammable gases	:	Category 1
Gases under pressure	:	Compressed gas

Label elements

Hazard pictograms :

Signal word : Danger

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

Precautionary statements : **Prevention:**
P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
Response:
P377 Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
P381 Eliminate all ignition sources if safe to do so.

SECTION 3: Composition and information of the ingredients of the hazardous chemical

Substance / Mixture : Substance

Hazardous components

Chemical Name	CAS-No.	Concentration (%)
Methane	74-82-8	>= 90 - < 99
Carbon Dioxide	124-38-9	>= 1 - < 3.5
Ethane	74-84-0	>= 1 - < 3.5

SECTION 4: First Aid Measures

If inhaled : If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a medical doctor.

In case of eye contact : Flush eyes with water as a precaution.
Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.

If swallowed : Keep respiratory tract clear.
Do NOT give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a medical doctor.

General advice : Move out of dangerous area.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.

Most important symptoms and effects, both acute and delayed : Simple asphyxiant and may cause dizziness and drowsiness.

SECTION 5: Firefighting Measures

Extinguishing Media

Suitable extinguishing media	:	Alcohol-resistant foam Dry chemical Carbon dioxide (CO_2)
Unsuitable extinguishing media	:	High volume water jet

Special protective equipment and precautions for fire-fighters

Special protective equipment for firefighters	:	Wear self-contained breathing apparatus for firefighting if necessary.
Specific extinguishing methods	:	For safety reasons in case of fire, cans should be stored separately in closed containments. Use a water spray to cool fully closed containers.

SECTION 6: Accidental Release Measures

Personal precautions, protective equipment and emergency procedures	:	Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas. Ensure adequate ventilation.
Environmental precautions	:	Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. If the product contaminates rivers and lakes or drains inform respective authorities.

SECTION 7: Handling and Storage

Handling

Advice on protection against fire and explosion	:	Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours). Use only explosion-proof equipment. Normal measures for preventive fire protection. Do not spray on a naked flame or any incandescent material. Keep away from open flames, hot surfaces and sources of ignition.
Advice on safe handling	:	Take precautionary measures against static discharges. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Provide sufficient air exchange and/or exhaust in work rooms.

Storage

Conditions for safe storage : Prevent unauthorized access.
Area should be well-ventilated place.
Observe label precautions.
Electrical installations / working materials must comply with the technological safety standards.
No smoking.

SECTION 8: Exposure Controls and Personal Protection

Control parameters

Components	CAS-No.	Value Type (Form of exposure)	Control Parameters / Permissible Concentration	Basis
Carbon Dioxide	124-38-9	TWA	5,000 ppm 9,000 mg/m3	MY PEL
		TWA	5,000 ppm	ACGIH
		STEL	30,000 ppm	ACGIH

Individual protection measures, such as personal protective equipment

Eye/face protection : Eye wash bottle with pure water.
Tightly fitting safety goggles.

Respiratory protection : If working in confined space and Oxygen concentration is less than 19.5% volume, use SCBA or airline system.

Skin protection : Impervious clothing.
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hand protection : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Hygiene measures : Wash hands before breaks and at the end of workday.

SECTION 9: Physical and Chemical Properties

Appearance : Compressed gas

Colour : Colourless

Odour : Mercaptant mixture (added). Natural gas in origin state is odorless.

Odour Threshold : Not applicable

pH : No data available

Melting point/freezing point	:	-183 °C
Boiling point/boiling range	:	-162 °C
Flash point	:	-187 °C
Evaporation rate	:	No data available
Flammability (solid, gas)	:	No data available
Upper explosion limit	:	15 % (Volume in air)
Lower explosion limit	:	5 % (Volume in air)
Vapour pressure	:	147 hPa (15 °C)
Relative vapour density	:	0.042 (Air = 1.0)
Relative density	:	No data available
Density	:	No data available
Solubility(ies)		
Water solubility	:	33 g/l (20 °C)
Partition coefficient: n-octanol/water	:	Pow: 1.81
Auto-ignition temperature	:	537 °C
Decomposition temperature	:	No data available
Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	No data available
Molecular weight	:	16 g/mol

SECTION 10: Stability and Reactivity

Reactivity	:	Hazardous polymerisation does not occur.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	No dangerous reaction known under conditions of normal use.
Conditions to avoid	:	Heat, sparks, flame and build-up of static electricity
Incompatible materials	:	Strong oxidizing agents
Hazardous decomposition products	:	Fumes, smoke, carbon monoxide

SECTION 11: Toxicological Information

Acute toxicity (oral, inhalation, dermal)

Methane	:	No data available
Carbon Dioxide	:	No data available
Ethane	:	No data available

Skin corrosion/irritation

Methane	:	No data available
Carbon Dioxide	:	No data available
Ethane	:	No data available

Serious eye damage/eye irritation

Methane	:	No data available
Carbon Dioxide	:	No data available
Ethane	:	No data available

Respiratory (inhalation)or skin sensitization (skin contact)

Methane	:	No data available
Carbon Dioxide	:	No data available
Ethane	:	No data available

Germ cell mutagenicity

Methane	:	No data available
Carbon Dioxide	:	No data available
Ethane	:	No data available

Carcinogenicity

Methane	:	No data available
Carbon Dioxide	:	No data available
Ethane	:	No data available

Reproductive toxicity

Methane	:	No data available
Carbon Dioxide	:	No data available
Ethane	:	No data available

Specific Target Organ Toxicity (STOT) – single exposure

Methane	:	No data available
Carbon Dioxide	:	No data available
Ethane	:	No data available

Specific Target Organ Toxicity (STOT) – repeated exposure

Methane	:	No data available
Carbon Dioxide	:	No data available
Ethane	:	No data available

Aspiration toxicity

Methane	:	No data available
Carbon Dioxide	:	No data available
Ethane	:	No data available

SECTION 12: Ecological Information

Ecotoxicity

Methane:

Toxicity to fish	:	LC50 (Fish): 27.98 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	LC50 (Daphnia (water flea)): 14.22 mg/l Exposure time: 48 h
Toxicity to algae	:	EC50 (Green Algae): 7.7 mg/l Exposure time: 96 h
Toxicity to fish	:	No data available
Toxicity to daphnia and other aquatic invertebrates	:	No data available
Toxicity to microorganisms	:	No data available

Carbon Dioxide:

Toxicity to fish	:	No data available
Toxicity to daphnia and other aquatic invertebrates	:	No data available
Toxicity to algae	:	No data available
Toxicity to fish	:	No data available

Toxicity to daphnia and other aquatic invertebrates	:	No data available
Toxicity to microorganisms	:	No data available

Ethane:

Toxicity to fish	:	LC50 (Fish): 91.42 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	LC50 (Daphnia (water flea)): 46.6 mg/l Exposure time: 48 h
Toxicity to algae	:	EC50 (Green Algae): 16.47 mg/l Exposure time: 96 h
Toxicity to fish	:	No data available
Toxicity to daphnia and other aquatic invertebrates	:	No data available
Toxicity to microorganisms	:	No data available

Persistence and degradability

Methane	:	No data available
Carbon Dioxide	:	No data available
Ethane	:	Readily biodegradable

Bio-accumulative potential

Methane	:	Estimated BCF = 7.3; Value Pow=1.81
Carbon Dioxide	:	No data available
	:	Partition coefficient: n- octanol/water (Pow) 0.67
Ethane	:	Bio-concentration factor (BCF): 13 Partition coefficient: n- octanol/water (Pow) 2.36

Mobility in soil

Methane	:	High mobility in soils.
Carbon Dioxide	:	No data available
Ethane	:	High mobility in soils.

Other adverse effects

Methane	:	No data available.
Carbon Dioxide	:	No data available.
Ethane	:	No data available.

SECTION 13: Disposal Information

Disposal methods

Waste from residues : Do not dispose of waste into sewer.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Send to a licensed waste management company.

SECTION 14: Transport Information

Transportation is through pipelines in accordance with ASME B31.8 and API 5L standard.

SECTION 15: Regulatory Information

Safety, health, and environmental regulations specific for the hazardous chemical

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013.

Occupational Safety and Health (Use and Standards of Exposure of Chemicals Hazardous to Health) Regulations 2000.

SECTION 16: Other Information

Activities not allowed within pipeline Right-of-way (ROW) perimeter, for example, excavation, planting trees, open burning, heavy vehicle parking, etc.

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