

Safety Data Sheet (MSDS)

(According to GB/T 16483, GB/T 17519, and GHS Standards)

SECTION 1: Identification

1.1 Product Identifiers

- Product Name: Methane
- Product Number: METH-20260303
- Brand: TECHPURE
- CAS-No.: 74-82-8
- Synonyms: Marsh Gas; Natural Gas (main component)

1.2 Details of the supplier of the safety data sheet

- Company : NEWAY SINOPHC TECH. LIMITED
- RM. 204, BUILDING 3, NO. 188, AONA RD., CHINA (SHANGHAI)PILOT FREE TRADE ZONE.
- Telephone : +86-021-50350029
- Fax : +86-021-50350029

1.3 Emergency telephone

Emergency Phone # : +86-021-50350029
(CHEMTREC)

1.4 Uses & Restrictions

- Identified Uses: Industrial fuel, chemical synthesis intermediate, laboratory reagent.
- Uses Advised Against: Unauthorized use as breathing gas, and use in unventilated enclosed spaces.

SECTION 2: Hazards Identification

2.1 GHS Classification

- Flammable gases (Category 1)
- Aspiration hazard (Category 1)

2.2 GHS Label Elements

- Hazard Pictogram: Flame; Gas cylinder
- Signal Word: Danger
- Hazard Statements: H220 (Extremely flammable gas); H337 (May cause respiratory irritation); H411 (Toxic to aquatic life with long-lasting effects)
- Precautionary Statements: P210 (Keep away from heat, hot surfaces, sparks, open flames); P230 (Keep container tightly closed); P260 (Do not breathe gas); P304+P340 (If inhaled: Remove to fresh air and keep at rest); P403+P233 (Store in a well-ventilated place; keep container tightly closed)

2.3 Physical & Chemical Hazards: Extremely flammable; forms explosive mixtures with air (5.0-15.0% v/v); may cause asphyxiation in high concentrations.2.4 Health Hazards: Asphyxiant; high concentrations may cause dizziness and loss of consciousness.2.5 Environmental Hazards: Toxic to aquatic life; long-lasting effects.2.6 Other Hazards: None.

SECTION 3: Composition/Information on Ingredients

- Substance / Mixture: Pure substance
- Active Component: Methane (CAS 74-82-8)
- Concentration: $\geq 99.5\%$
- Impurities: $\leq 0.5\%$ (Ethane, propane, water)

SECTION 4: First Aid Measures

- Inhaled: Remove to fresh air immediately. Keep patient calm; give oxygen if breathing is difficult. Seek medical attention if symptoms persist.
- Skin Contact: No special treatment (gas phase); avoid cold burns from rapid expansion.
- Eye Contact: No special treatment (gas phase); flush with water if contaminated by liquid droplets.
- Swallowed: Not applicable (gas).

SECTION 5: Firefighting Measures

- Suitable Extinguishing Media: Dry powder, carbon dioxide (CO₂), foam.
- Unsuitable Extinguishing Media: Water jet (may spread fire).
- Special Hazards: Vapors are lighter than air; may accumulate in high places. Explosive when mixed with air.
- Advice for Firefighters: Wear self-contained breathing apparatus and full protective clothing. Cool cylinders with water spray from a safe distance.

SECTION 6: Accidental Release Measures

- Personal Precautions: Evacuate non-essential personnel. Wear appropriate PPE and gas detection equipment. Eliminate all ignition sources.
- Environmental Precautions: Prevent gas from entering watercourses or confined spaces.
- Clean-Up Methods: Ventilate area thoroughly; use gas detectors to confirm safety before re-entering.

SECTION 7: Handling and Storage

- Handling Precautions: Operate in well-ventilated areas with explosion-proof electrical equipment. Use leak-proof connections and pressure regulators.
- Storage Conditions: Store in cool, dry, well-ventilated warehouses (temperature $\leq 30^{\circ}\text{C}$). Keep cylinders upright, secured, and away from heat, sparks, and oxidizers.
- Incompatibilities: Oxidizing agents, halogens.

SECTION 8: Exposure Controls/Personal Protection

- Engineering Controls: Install local exhaust ventilation and gas leak detection systems.
- Personal Protective Equipment:
 - Eye/Face Protection: Safety glasses.
 - Skin Protection: Anti-static clothing and gloves.
 - Respiratory Protection: Not required under normal use; use self-contained breathing apparatus in confined spaces.
- Exposure Limits: TWA (8h): 1000 ppm (OSHA).

SECTION 9: Physical and Chemical Properties

- Physical State: Gas
- Color: Colorless
- Odor: Odorless
- Melting Point: -182.5°C
- Boiling Point: -161.5°C
- Flash Point: -188°C
- Autoignition Temperature: 537°C
- Density (Gas, 20°C, 1 atm): 0.717 kg/m³
- Water Solubility: Slightly soluble (22 mg/L at 25°C)
- Vapor Pressure: > 1013 kPa (20°C)
- Explosive Limits: 5.0-15.0% (v/v)

SECTION 10: Stability and Reactivity

- Stability: Stable under normal conditions.
- Hazardous Reactions: Reacts violently with oxidizing agents and halogens.
- Conditions to Avoid: Heat, sparks, open flames, high pressure.
- Incompatible Materials: Oxidizing agents (e.g., oxygen, chlorine), halogens.
- Hazardous Decomposition Products: Carbon monoxide (incomplete combustion).

SECTION 11: Toxicological Information

- Acute Toxicity: Inhalation (Rat, LC₅₀): > 50,000 ppm (4h) (asphyxiant).
- Skin Irritation: No irritation.
- Eye Irritation: No irritation.
- Chronic Toxicity: No known chronic toxic effects.
- Reproductive Toxicity: No known reproductive toxicity.

SECTION 12: Ecological Information

- Aquatic Toxicity: Fish (Zebrafish, LC₅₀): > 1000 mg/L (96h).
- Biodegradability: Not biodegradable in water.
- Bioaccumulative Potential: No bioaccumulation potential.
- Environmental Fate: Volatilizes rapidly from water; persists in atmosphere.

SECTION 13: Disposal Considerations

- Waste Treatment: Dispose of as hazardous waste in accordance with local regulations. Burn in approved incineration facilities.
- Packaging Waste: Return empty cylinders to supplier for recycling or proper disposal.

SECTION 14: Transport Information

- UN Number: 1971
- UN Proper Shipping Name: METHANE, COMPRESSED
- Transport Hazard Class: 2.1 (Flammable gases)
- Packaging Group: None
- Marine Pollutant: No
- Transport Precautions: Transport in approved gas cylinders. Secure cylinders upright; avoid collision and high temperature.

SECTION 15: Regulatory Information

- National Regulations (China): Hazardous Chemical Safety Management Regulation; Environmental Protection Law.
- International Regulations: GHS (Rev. 9); REACH (EU, listed); TSCA (US, listed); IMDG Code; IATA-DGR.

SECTION 16: Other Information

- Revision Date: 03 MAR 2026
- Disclaimer: This MSDS is based on current scientific data. The supplier is not liable for damages caused by improper use or non-compliance with safety precautions.