

# Material Safety Data Sheet

## METHANE

Revision 9/04

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Advanced Gas Technologies  
1401 Stauffer Road  
Palm, PA 18070.

Telephone Number: (215) 541-4116

MSDS IDENTIFICATION CODE / NUMBER: MA

#### EMERGENCY TELEPHONE NUMBER

CHEMTREC (800) 424-9300

**PRODUCT NAME:** Methane

**CAS NUMBER:** 74-82-8

**CHEMICAL FAMILY:** Aliphatic hydrocarbon

**CHEMICAL FORMULA:** CH<sub>4</sub>

**SYNONYMS:** Methyl Hydride

### 2. COMPOSITION / INFORMATION ON INGREDIENTS

INGREDIENT NAME	EXPOSURE LIMITS	CONCENTRATION PERCENT BY WEIGHT
METHANE CAS NUMBER: 74-82-8	ACGIH TLV-TWA:D Simple Asphyxiant	100.0

### 3. HAZARDS IDENTIFICATION

NO DATA GIVEN

### 4. FIRST AID MEASURES

#### EYES

Never introduce ointment or oil into the eyes without medical advice. In case of freezing or cryogenic "burns" caused by rapidly evaporating liquid, DO NOT WASH THE EYES WITH HOT OR EVEN TEPID WATER!. Remove victim from the source of contamination. Open eyelids wide to allow liquid to evaporate. If pain is present, refer the victim to an ophthalmologist for treatment and follow-up. If victim cannot tolerate light, protect the eyes with a light bandage.

#### SKIN

Treat for frostbite.

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## **PAGE 2: Methane Continued**

### **INHALATION**

**PROMPT MEDICAL ATTENTION IS MANDATORY IN ALL CASES OF OVEREXPOSURE. RESCUE PERSONNEL SHOULD BE EQUIPPED WITH SELF-CONTAINED BREATHING APPARATUS.**

Victim should be assisted to an uncontaminated area and inhale fresh air. Quick removal from the contaminated area is most important. Unconscious persons should be moved to an uncontaminated area, and if breathing has stopped, administer artificial resuscitation and supplemental oxygen. Further treatment should be symptomatic and supportive.

## **5. FIRE FIGHTING MEASURES**

### **FLAMMABLE PROPERTIES**

**FLASH POINT:** -306 °F -188 °C closed cup

**AUTOIGNITION:** 1076 °F 580 °C

**LOWER EXPLOSIVE LIMIT (%):** 5

**UPPER EXPLOSIVE LIMIT (%):** 15

### **FIRE AND EXPLOSION HAZARDS**

Should flames be extinguished and flow of gas continue, increase ventilation to prevent flammable mixture formation in low areas or pockets.

Electrical Classification: Class 1, Group D.

### **EXTINGUISHING MEDIA**

Water, Carbon Dioxide, dry chemical.

### **FIRE FIGHTING INSTRUCTIONS**

If possible, stop the flow of methane. Use water spray to cool surrounding containers. Direct a 500 GPM water stream onto containers above liquid level with remote monitors. Limit the number of personnel in proximity to the fire. Evacuate surrounding areas to at least 3000 feet in all directions. Contact CHEMTREC for more advice (800) 424-9300.

## **6. ACCIDENTAL RELEASE MEASURES**

Evacuate all personnel from affected area. Extinguish all flames and sources of ignition. Use appropriate protective equipment. If leak is in user's equipment, be certain to purge piping with an inert gas prior to attempting repairs. If leak is in container or container valve, contact CHEMTREC for emergency assistance or call Advanced Gas Technologies.

## **7. HANDLING AND STORAGE**

### **HANDLING AND STORAGE PRECAUTIONS**

Use only in well-ventilated areas. Valve protection caps must remain in place unless the container is secured. Do not drag, roll or slide cylinders. Use a suitable hand truck for cylinder movement. Use a pressure reducing regulator when connecting cylinder by any means to increase the discharge rate of product from the cylinder. Use a check valve or trap in the discharge line to prevent hazardous back flow into the cylinder.

**PAGE 3: Methane Continued**

Protect cylinders from physical damage. Store in cool, dry, well-ventilated area away from heavily trafficked areas and emergency exits. Do not allow the temperature where cylinders are stored to exceed 130 °F (54 °C). Cylinders should be stored upright and firmly secured to prevent falling or being knocked over. Full and empty cylinders should be segregated. Use a "first in-first out" inventory system to prevent full cylinders from being stored for excessive periods of time.

For additional storage recommendations, consult Compressed Gas Association's Pamphlets P-1, P-9, P-14, and safety bulletin SB-2.

**8. EXPOSURE CONTROLS / PERSONAL PROTECTION**

**ENGINEERING CONTROLS**

Use local exhaust to prevent gas from accumulating. Use general ventilation to prevent build up of flammable concentrations. Use a hood with ventilation when handling small quantities. If product is handled routinely where the potential for leaks exists, all electrical equipment must be rated for use in potentially flammable atmospheres. Consult the National Electrical Code for details.

**EYE / FACE PROTECTION**

Safety goggles or glasses

**SKIN PROTECTION**

Plastic or rubber gloves.

**RESPIRATORY PROTECTION**

A Type C respirator with full face piece equipped with an escape bottle or a self contained breathing apparatus should be available for emergency use. Operate this equipment in the positive pressure demand mode.

**OTHER / GENERAL PROTECTION**

Safety shoes, safety shower, eyewash fountain.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

**APPEARANCE**

A colorless gas.

**ODOR**

Odorless gas

**BASIC PHYSICAL PROPERTIES**

<b>BOILING POINT:</b>	-285.7 °F	-161 °C
<b>MELTING POINT:</b>	-296.5 °F	-182.5 °C
<b>SPECIFIC GRAVITY:</b>	0.55	
<b>MOLECULAR WEIGHT:</b>	16.00	
<b>SOLUBILITY (H<sub>2</sub>O):</b>	Negligible	
<b>PERCENT VOLATILES:</b>	100	

**10. STABILITY AND REACTIVITY**

**STABILITY:** Stable

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## **INCOMPATIBLE MATERIALS**

Oxidizers.

### **PAGE 4: Methane Continued**

## **11. TOXICOLOGICAL INFORMATION**

### **EYE EFFECTS**

Contact is not likely. Liquid product may cause tissue freezing.

### **SKIN EFFECTS**

Skin contact is not likely. Contact with liquid product may cause frostbite upon rapid evaporation.

### **ACUTE INHALATION EFFECTS**

Methane is a simple asphyxiant. Oxygen levels should be maintained at greater than 18 molar percent at normal atmospheric pressure which is equivalent to a partial pressure of 135mm Hg.

High concentrations of this gas so as to exclude an adequate supply of oxygen to the lungs causes dizziness, deeper breathing due to air hunger, possible nausea and eventual unconsciousness. Methane is relatively inactive biologically and essentially nontoxic: therefore, the major hazard is the exclusion of an adequate supply of oxygen to the lungs.

### **MISCELLANEOUS TOXICOLOGICAL INFORMATION**

Carcinogenicity –NTP: No IARC: No OSHA: No

## **12. ECOLOGICAL INFORMATION**

NO DATA GIVEN

## **13. DISPOSAL INFORMATION**

Do not attempt to dispose of waste or unused quantities. Return in the shipping container PROPERLY LABELED, WITH ANY VALVE OUTLET PLUGS OR CAPS SECURED AND VALVE PROTECTION CAP IN PLACE to Advanced Gas Technologies for proper disposal.

## **14. TRANSPORT INFORMATION**

**PROPER SHIPPING NAME:** Methane.

**HAZARD CLASS:** Flammable Gas

**DOT IDENTIFICATION NUMBER:** UN1971

**DOT SHIPPING LABEL:** Flammable Gas

## **15 REGULATORY INFORMATION**

### **SARA TITLE III NOTIFICATION AND INFORMATION**

**SARA TITLE III - HAZARD CLASSES:** Acute Health Hazard  
Fire Hazard  
Sudden Release of Pressure Hazard

## **16. OTHER INFORMATION**

**Hazard Rating -**

HEALTH	1	Slight
FIRE	4	Extreme

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REACTIVITY 0 Negligible

**PAGE 5: Methane Continued**

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**REFERENCE DOCUMENTATION**

Methane is non-corrosive and may be used with any common structural material.

Earth ground and bond all lines and equipment associated with the hydrogen system. Electrical equipment should be non-sparking or explosion-proof.

Compressed gas cylinders should not be refilled except by qualified producers of compressed gases. Shipments of a compressed gas cylinder, which has not been filled by the owner or with his (written) consent, it is in violation of Federal Law (49CFR).

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