



# METHANE, COMPRESSED

## Safety Data Sheet P-4618

This SDS conforms to U.S. Code of Federal Regulations 29 CFR 1910.1200, Hazard Communication.

Issue date: 01/01/1978

Revision date: 12/17/2021 Supersedes: 01/29/2021

Version: 1.1

### SECTION 1: Product and company identification

#### 1.1. Product identifier

Product form : Substance  
Trade name : Methane  
Chemical name : Methane  
CAS-No. : 74-82-8  
Formula : CH<sub>4</sub>

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

Use of the substance/mixture : Industrial use; Use as directed.

#### 1.3. Details of the supplier of the safety data sheet

Linde Inc.  
10 Riverview Drive  
Danbury, CT 06810-6268, USA  
www.lindeus.com

Linde Inc. 1-844-44LINDE (1-844-445-4633)

#### 1.4. Emergency telephone number

Emergency number : Onsite Emergency: 1-800-645-4633

CHEMTREC, 24hr/day 7days/week  
— Within USA: 1-800-424-9300, Outside USA: 001-703-527-3887  
(collect calls accepted, Contract 17729)

### SECTION 2: Hazard identification

#### 2.1. Classification of the substance or mixture

##### GHS US classification

Flam. Gas 1 H220  
Press. Gas (Comp.) H280  
Simple asphyxiant SIAS

#### 2.2. Label elements

##### GHS US labeling

Hazard pictograms (GHS US) :



GHS02

GHS04

Signal word (GHS US) :

Danger

Hazard statements (GHS US) :

H220 - EXTREMELY FLAMMABLE GAS  
H280 - CONTAINS GAS UNDER PRESSURE; MAY EXPLODE IF HEATED  
OSHA-H01 - MAY DISPLACE OXYGEN AND CAUSE RAPID SUFFOCATION.  
CGA-HG04 - MAY FORM EXPLOSIVE MIXTURES WITH AIR

Precautionary statements (GHS US) :

P202 - Do not handle until all safety precautions have been read and understood.  
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P271+P403 - Use and store only outdoors or in a well-ventilated place.  
P377 - LEAKING GAS FIRE: Do not extinguish, unless leak can be stopped safely.  
P381 - Eliminate all ignition sources if safe to do so.  
P501 - Dispose of contents/container in accordance with local/regional/national/international regulations. Contact supplier for any special requirements.  
P304, P340, P313 - IF INHALED: Remove person to fresh air and keep comfortable for



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breathing. Get medical advice/attention.  
CGA-PG05 - Use a back flow preventive device in the piping.  
CGA-PG10 - Use only with equipment rated for cylinder pressure.  
CGA-PG12 - Do not open valve until connected to equipment prepared for use.  
CGA-PG06 - Close valve after each use and when empty.  
CGA-PG11 - Never put cylinders into unventilated areas of passenger vehicles.  
CGA-PG02 - Protect from sunlight when ambient temperature exceeds 52°C (125°F).

### 2.3. Other hazards

Other hazards which do not result in classification : None.

### 2.4. Unknown acute toxicity (GHS US)

No data available

## SECTION 3: Composition/Information on ingredients

### 3.1. Substances

Name : METHANE, COMPRESSED  
CAS-No. : 74-82-8

Name	Product identifier	%
Methane	(CAS-No.) 74-82-8	100

### 3.2. Mixtures

Not applicable

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

First-aid measures after inhalation : Remove to fresh air and keep at rest in a position comfortable for breathing. If not breathing, give artificial respiration. If breathing is difficult, trained personnel should give oxygen. Call a physician.  
First-aid measures after skin contact : If skin irritation occurs: Wash with plenty of soap and water.  
First-aid measures after eye contact : Immediately flush eyes thoroughly with water for at least 15 minutes. Hold the eyelids open and away from the eyeballs to ensure that all surfaces are flushed thoroughly. Contact an ophthalmologist immediately.  
First-aid measures after ingestion : Ingestion is not considered a potential route of exposure.

### 4.2. Most important symptoms and effects, both acute and delayed

No additional information available

### 4.3. Indication of any immediate medical attention and special treatment needed

None.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

Suitable extinguishing media : Carbon dioxide, Dry chemical, Water spray or fog.

### 5.2. Special hazards arising from the substance or mixture

Fire hazard : EXTREMELY FLAMMABLE GAS. If venting or leaking gas catches fire, do not extinguish flames. Flammable vapors may spread from leak, creating an explosive reignition hazard. Vapors can be ignited by pilot lights, other flames, smoking, sparks, heaters, electrical equipment, static discharge, or other ignition sources at locations distant from product handling point. Explosive atmospheres may linger. Before entering an area, especially a confined area, check the atmosphere with an appropriate device.  
Explosion hazard : EXTREMELY FLAMMABLE GAS. Forms explosive mixtures with air and oxidizing agents.  
Reactivity : No reactivity hazard other than the effects described in sub-sections below.



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### 5.3. Advice for firefighters

- Firefighting instructions : **Danger! FLAMMABLE, HIGH PRESSURE GAS.**
- Evacuate all personnel from the danger area. Use self-contained breathing apparatus (SCBA) and protective clothing. Immediately cool containers with water from maximum distance. Stop flow of gas if safe to do so, while continuing cooling water spray. Remove ignition sources if safe to do so. Remove containers from area of fire if safe to do so. On-site fire brigades must comply with OSHA 29 CFR 1910.156 and applicable standards under 29 CFR 1910 Subpart L—Fire Protection.
- Special protective equipment for fire fighters : Standard protective clothing and equipment (Self Contained Breathing Apparatus) for fire fighters.
- Other information : Containers are equipped with a pressure relief device. (Exceptions may exist where authorized by DOT.).

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

- General measures : **Danger: EXTREMELY FLAMMABLE GAS.** Forms explosive mixtures with air and oxidizing agents. See section 5. Evacuate personnel to a safe area. Appropriate self-contained breathing apparatus may be required. Approach suspected leak area with caution. Remove all sources of ignition, if safe to do so. Reduce gas with fog or fine water spray. Stop flow of product if safe to do so. Ventilate area or move container to a well-ventilated area. Flammable gas may spread from leak. Before entering the area, especially a confined area, check the atmosphere with an appropriate device.

#### 6.1.1. For non-emergency personnel

No additional information available

#### 6.1.2. For emergency responders

No additional information available

### 6.2. Environmental precautions

Prevent waste from contaminating the surrounding environment. Prevent soil and water pollution. Dispose of contents/container in accordance with local/regional/national/international regulations. Contact supplier for any special requirements.

### 6.3. Methods and material for containment and cleaning up

No additional information available

### 6.4. Reference to other sections

See also sections 8 and 13.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

- Precautions for safe handling : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use only non-sparking tools. Use only explosion-proof equipment.
- Wear leather safety gloves and safety shoes when handling cylinders. Protect cylinders from physical damage; do not drag, roll, slide or drop. While moving cylinder, always keep in place removable valve cover. Never attempt to lift a cylinder by its cap; the cap is intended solely to protect the valve. When moving cylinders, even for short distances, use a cart (trolley, hand truck, etc.) designed to transport cylinders. Never insert an object (e.g. wrench, screwdriver, pry bar) into cap openings; doing so may damage the valve and cause a leak. Use an adjustable strap wrench to remove over-tight or rusted caps. Slowly open the valve. If the valve is hard to open, discontinue use and contact your supplier. Close the container valve after each use; keep closed even when empty. Never apply flame or localized heat directly to any part of the container. High temperatures may damage the container and could cause the pressure relief device to fail prematurely, venting the container contents. For other precautions in using this product, see section 16.



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### 7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store only where temperature will not exceed 125°F (52°C). Post "No Smoking/No Open Flames" signs in storage and use areas. There must be no sources of ignition. Separate packages and protect against potential fire and/or explosion damage following appropriate codes and requirements (e.g. NFPA 30, NFPA 55, NFPA 70, and/or NFPA 221 in the U.S.) or according to requirements determined by the Authority Having Jurisdiction (AHJ). Always secure containers upright to keep them from falling or being knocked over. Install valve protection cap, if provided, firmly in place by hand when the container is not in use. Store full and empty containers separately. Use a first-in, first-out inventory system to prevent storing full containers for long periods. For other precautions in using this product, see section 16.

**OTHER PRECAUTIONS FOR HANDLING, STORAGE, AND USE:** When handling product under pressure, use piping and equipment adequately designed to withstand the pressures to be encountered. Never work on a pressurized system. Use a back flow preventive device in the piping. Gases can cause rapid suffocation because of oxygen deficiency; store and use with adequate ventilation. If a leak occurs, close the container valve and blow down the system in a safe and environmentally correct manner in compliance with all international, federal/national, state/provincial, and local laws; then repair the leak. Never place a container where it may become part of an electrical circuit.

### 7.3. Specific end use(s)

None.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

METHANE, COMPRESSED (74-82-8)	
ACGIH	Not established
USA OSHA	Not established
Methane (74-82-8)	
ACGIH	Not established
USA OSHA	Not established

### 8.2. Exposure controls

Appropriate engineering controls : Use an explosion-proof local exhaust system with sufficient flow velocity to maintain an adequate supply of air in the worker's breathing zone. Mechanical/General measures: Use in a closed system.

Eye protection : Wear safety glasses when handling cylinders; vapor-proof goggles and a face shield during cylinder changeout or whenever contact with product is possible. Select eye protection in accordance with OSHA 29 CFR 1910.133.

Skin and body protection : Wear metatarsal shoes and work gloves for cylinder handling, and protective clothing where needed. Wear appropriate chemical gloves during cylinder changeout or wherever contact with product is possible. Select per OSHA 29 CFR 1910.132, 1910.136, and 1910.138.

Respiratory protection : When workplace conditions warrant respirator use, follow a respiratory protection program that meets OSHA 29 CFR 1910.134, ANSI Z88.2, or MSHA 30 CFR 72.710 (where applicable). Use an air-supplied or air-purifying cartridge if the action level is exceeded. Ensure that the respirator has the appropriate protection factor for the exposure level. If cartridge type respirators are used, the cartridge must be appropriate for the chemical exposure. For emergencies or instances with unknown exposure levels, use a self-contained breathing apparatus (SCBA).

## SECTION 9: Physical and chemical properties

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

Physical state : Gas

Appearance : Colorless gas.

Molecular mass : 16.04 g/mol

Color : Colorless

Odor : odorless



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Odor threshold	: No data available
pH	: Not applicable.
Relative evaporation rate (butyl acetate=1)	: No data available
Relative evaporation rate (ether=1)	: Not applicable.
Melting point	: -182 °C
Freezing point	: No data available
Boiling point	: -161.5 °C
Flash point	: No data available
Critical temperature	: -82.5 °C
Auto-ignition temperature	: 600 °C
Decomposition temperature	: No data available
Flammability (solid, gas)	: 5 – 15 vol %
Vapor pressure	: Not applicable.
Critical pressure	: 45.99 bar
Relative vapor density at 20 °C	: No data available
Relative density	: 0.56
Density	: 0.66 kg/m <sup>3</sup> Vapor density @15.6°C, 1 atm
Relative gas density	: 0.7 @15.6°C, 1 atm
Solubility	: Water: No data available
Partition coefficient n-octanol/water (Log Pow)	: Not applicable.
Partition coefficient n-octanol/water (Log Kow)	: Not applicable.
Viscosity, kinematic	: Not applicable.
Viscosity, dynamic	: Not applicable.
Explosive properties	: Not applicable.
Oxidizing properties	: None.
Explosion limits	: No data available

### 9.2. Other information

Gas group	: Compressed gas
Additional information	: None.

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

No reactivity hazard other than the effects described in sub-sections below.

### 10.2. Chemical stability

Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

May occur.

### 10.4. Conditions to avoid

Keep away from heat/sparks/open flames/hot surfaces. – No smoking.

### 10.5. Incompatible materials

Oxidizing agents. May explode: Bromine pentafluoride. Chlorine. Mercury oxide. Nitrogen trifluoride. Liquid Oxygen. Oxygen difluoride.

### 10.6. Hazardous decomposition products

Thermal decomposition may produce : Carbon dioxide. Carbon monoxide. Hydrogen.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects



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Acute toxicity	: Not classified
Skin corrosion/irritation	: Not classified pH: Not applicable.
Serious eye damage/irritation	: Not classified pH: Not applicable.
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
STOT-repeated exposure	: Not classified
Aspiration hazard	: Not classified

### SECTION 12: Ecological information

#### 12.1. Toxicity

Ecology - general : No known ecological damage caused by this product.

#### 12.2. Persistence and degradability

##### METHANE, COMPRESSED (74-82-8)

Persistence and degradability	The substance is biodegradable. Unlikely to persist.
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##### Methane (74-82-8)

Persistence and degradability	The substance is biodegradable. Unlikely to persist.
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#### 12.3. Bioaccumulative potential

##### METHANE, COMPRESSED (74-82-8)

Partition coefficient n-octanol/water (Log Pow)	Not applicable.
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Partition coefficient n-octanol/water (Log Kow)	Not applicable.
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Bioaccumulative potential	No ecological damage caused by this product.
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##### Methane (74-82-8)

Partition coefficient n-octanol/water (Log Pow)	1.09
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Bioaccumulative potential	Not expected to bioaccumulate due to the low log Kow (log Kow < 4). Refer to section 9.
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#### 12.4. Mobility in soil

##### METHANE, COMPRESSED (74-82-8)

Mobility in soil	No data available.
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Ecology - soil	Because of its high volatility, the product is unlikely to cause ground or water pollution.
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##### Methane (74-82-8)

Ecology - soil	Because of its high volatility, the product is unlikely to cause ground or water pollution.
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#### 12.5. Other adverse effects

Effect on ozone layer : None.

Global warming potential [CO<sub>2</sub>=1] : 21

Effect on the global warming : When discharged in large quantities may contribute to the greenhouse effect.

### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods

Product/Packaging disposal recommendations : Do not attempt to dispose of residual or unused quantities. Return container to supplier.



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### SECTION 14: Transport information

In accordance with DOT

Transport document description (DOT)	: UN1971 Methane, compressed, 2.1
UN-No.(DOT)	: UN1971
Proper Shipping Name (DOT)	: Methane, compressed
Class (DOT)	: 2.1 - Class 2.1 - Flammable gas 49 CFR 173.115
Hazard labels (DOT)	: 2.1 - Flammable gas



#### Additional information

Emergency Response Guide (ERG) Number	: 115 (UN1971)
Other information	: No supplementary information available.
Special transport precautions	: 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. Before transporting product containers: - Ensure there is adequate ventilation. - Ensure that containers are firmly secured. - Ensure cylinder valve is closed and not leaking. - Ensure valve outlet cap nut or plug (where provided) is correctly fitted. - Ensure valve protection device (where provided) is correctly fitted.

#### Transport by sea

UN-No. (IMDG)	: 1971
Proper Shipping Name (IMDG)	: METHANE, COMPRESSED
Class (IMDG)	: 2 - Gases
Division (IMDG)	: 2.1 - Flammable gases
MFAG-No	: 115

#### Air transport

UN-No. (IATA)	: 1971
Proper Shipping Name (IATA)	: Methane, compressed
Class (IATA)	: 2 - Gases
Civil Aeronautics Law	: Gases under pressure/Gases flammable under pressure

### SECTION 15: Regulatory information

#### 15.1. US Federal regulations

##### METHANE, COMPRESSED (74-82-8)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

All components of this product are listed on the Toxic Substances Control Act (TSCA) inventory.

#### 15.2. International regulations

##### CANADA

##### METHANE, COMPRESSED (74-82-8)

Listed on the Canadian DSL (Domestic Substances List)

##### Methane (74-82-8)

Listed on the Canadian DSL (Domestic Substances List)



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### Methane (74-82-8)

#### EU-Regulations

##### METHANE, COMPRESSED (74-82-8)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

#### 15.2.2. National regulations

##### METHANE, COMPRESSED (74-82-8)

Listed introduction on Australian Industrial Chemicals Introduction Scheme (AICIS Inventory)  
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)  
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory  
Listed on KECL/KECI (Korean Existing Chemicals Inventory)  
Listed on NZIoC (New Zealand Inventory of Chemicals)  
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)  
Listed on INSQ (Mexican National Inventory of Chemical Substances)  
Listed on CICR (Turkish Inventory and Control of Chemicals)

#### 15.3. US State regulations

##### METHANE, COMPRESSED(74-82-8)

U.S. - California - Proposition 65 - Carcinogens List	No
U.S. - California - Proposition 65 - Developmental Toxicity	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Female	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No
State or local regulations	U.S. - Massachusetts - Right To Know List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List

##### Methane (74-82-8)

U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)
No	No	No	No	

##### Methane (74-82-8)

U.S. - Massachusetts - Right To Know List  
U.S. - New Jersey - Right to Know Hazardous Substance List  
U.S. - Pennsylvania - RTK (Right to Know) List





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### SECTION 16: Other information

#### Other information

: When you mix two or more chemicals, you can create additional, unexpected hazards. Obtain and evaluate the safety information for each component before you produce the mixture. Consult an industrial hygienist or other trained person when you evaluate the end product. Before using any plastics, confirm their compatibility with this product.

Linde asks users of this product to study this SDS and become aware of the product hazards and safety information. To promote safe use of this product, a user should (1) notify employees, agents, and contractors of the information in this SDS and of any other known product hazards and safety information, (2) furnish this information to each purchaser of the product, and (3) ask each purchaser to notify its employees and customers of the product hazards and safety information.

The opinions expressed herein are those of qualified experts within Linde Inc. We believe that the information contained herein is current as of the date of this Safety Data Sheet. Since the use of this information and the conditions of use are not within the control of Linde Inc, it is the user's obligation to determine the conditions of safe use of the product.

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#### NFPA health hazard

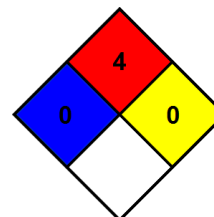
: 0 - Materials that, under emergency conditions, would offer no hazard beyond that of ordinary combustible materials.

#### NFPA fire hazard

: 4 - Materials that rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air and burn readily.

#### NFPA instability

: 0 - Material that in themselves are normally stable, even under fire conditions.



SDS US (GHS HazCom 2012) - Praxair OR Linde

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.*