Methane, Compressed

1 PRODUCT AND COMPANY IDENTIFICATION

Product Identifier:	**Methane, Compressed**
Synonyms:	**Methyl Hydride, Natural Gas, Marsh Gas**
Common Name:	**Methane**
SDS Number:	**NLB 1971**
Revision Date:	**1/12/2023**
Version:	**3**
CAS Number:	**74-82-8**
EPA Number:	**Not Available**
RCRA Number:	**Not Available**
Chemical Family:	**Gas**
Chemical Formula:	**CH4**
Product Use:	**Fuel gas, Calibration Gas, other analyitical applications**
Supplier Details:	**NorLab a division of Norco 898 W. Gowen Rd. Boise, ID 83705**
Contact:	**Quality Dept.**
Phone:	**208-336-1643**
Fax:	**208-433-6160**
Internet:	**www.norlab-gas.com**

2 HAZARDS IDENTIFICATION

Classification of Substance

GHS Classification in Accordance with 29 CFR 1910 (OSHA HCS):

Physical, Flammable Gases, 1

Physical, Gases Under Pressure, Compressed Gas

GHS Label Elements, Including Precautionary Statements

GHS Signal Word: DANGER

GHS Hazard Pictograms:

GHS Hazard Statements:

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.

GHS Precautionary Statements:

P202 - Do not handle until all safety precautions have been read and understood.
P210 - Keep away from heat/sparks/open flames/hot surfaces. No smoking
P271 - Use and store only outdoors or in a well-ventilated area.
P377 - Leaking gas fire: Do not extinguish unless leak can be stopped safely.
P381 - Eliminate all ignition sources if safe to do so.
P304+340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P313 - 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-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).

Hazards not Otherwise Classified (HNOC) or not Covered by GHS

Route of Entry: **Inhalation;**

Target Organs:	**Respiratory system;**
Inhalation:	**Methane is a simple asphyxiant. Exposure to high concentrations of this gas may exclude an adequate supply of oxygen. Oxygen levels should be maintained at greater than 19.5% at normal atmospheric pressure.** **Effects of oxygen deficiency resulting from simple asphyxiants may include: rapid breathing, diminished mental alertness, impaired muscular coordination, faulty judgment, depression of all sensations, emotional instability and fatigue. As asphyxiation progresses, nausea, vomiting, prostration and loss of consciousness may result, eventually leading to convulsions, coma and death.** **Oxygen deficiency during pregnancy has produced developmental abnormalities in humans and experimental animals.** **Inhalation of high methane concentrations may cause central nervous system depression with dizziness, disorientation, in-coordination, nausea, and narcosis. High concentrations may also cause cardiac sensitization resulting in irregular heartbeat and may make the individual more susceptible to cardiac effects of substances such as epinephrine and adrenaline.**
Skin Contact:	**Non-irritating. Contact with rapidly expanding gas near the point of release may cause frostbite with redness, skin color change to gray or white, and blistering.**
Eye Contact:	**Non-irritating. Contact with rapidly expanding gas near the point of release may cause frostbite.**
Ingestion:	**Not anticipated. Product is a gas at normal conditions.**

3 COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Ingredients:

CAS#	%	Chemical Name:
74-82-8	>99.0%	Methane

4 FIRST AID MEASURES

Inhalation:	**PROMPT MEDICAL ATTENTION IS MANDATORY IN ALL CASES OF OVEREXPOSURE TO PRODUCT. RESCUE PERSONNEL SHOULD BE EQUIPED WITH SELF-CONTAINED BREATHING APPARATUS. Conscious persons 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, given assisted (artificial) respiration and supplemental oxygen. Further treatment should be symptomatic and supportive.**
Skin Contact:	**None required for gas. For frostbite, immerse skin in lukewarm water. DO NOT USE HOT WATER. Obtain medical attention.**
Eye Contact:	**None Required for gas. If frostbite is suspected, flush eyes with cool water for 15 minutes and obtain immediate medical attention.**
Ingestion:	**Not a direct hazard.**

5 FIRE FIGHTING MEASURES

Flammability:	**Flammable Gas**
Flash Point:	**Not applicable for gases and gas mixtures**
Flash Point Method:	**Not Applicable**
Burning Rate:	**Not Available**
Autoignition Temperature:	**595° C (1103° F)**
Lower Explosive Limit:	**5.0% by volume**

Upper Explosive Limit: **15% by volume**

Flammable gas. Cylinder may rupture violently from pressure when involved in a fire situation. Stop flow of gas before extinguishing fire if safe to do so. Do not extinguish the fire until the supply is shut off as otherwise an explosive re-ignition may occur. If the fire is extinguished and the flow of gas continues, use increased ventilation to prevent build-up of explosive atmosphere. Use non-sparking tools to close container valves. Keep containers cool with water spray. Continue to cool fire-exposed cylinders until well after flames are extinguished. Be cautious of a Boiling Liquid Evaporating Vapor Explosion, BLEVE, if flame is impinging on surrounding containers. Direct 500 GPM water stream onto containers above liquid level with remote monitors. Limit the number of personnel in proximity of fire and evacuate surrounding areas in all directions. Continue to cool fire-exposed cylinders until well after flames are extinguished.

6 ACCIDENTAL RELEASE MEASURES

Immediately extinguish all ignition sources and evacuate all personnel from affected area. No smoking, flares, sparks, or flames in hazard area. Use appropriate protective equipment. Stop the flow of gas or remove cylinder to outdoor location if this can be done without risk. Provide maximum explosion proof ventilation and ventilate enclosed areas. If leak is in container or container valve contact the appropriate emergency telephone number listed in Section 1 or call your closest Norco/NorLab location. If leak is in user's equipment, be certain to purge piping with inert gas prior to attempting repairs.

7 HANDLING AND STORAGE

Handling Precautions:

Separate flammable mixture from oxygen and other oxidizers by a minimum distance of 20 ft. or by a 5ft. high barrier with a minimum fire resistance rating of a half hour.

Use only in well-ventilated areas. Valve protection caps must remain in place unless container is secured with valve outlet piped to use point. Do not drag, slide or roll cylinders. Use a suitable hand truck for cylinder movement. Use a pressure regulator when connecting cylinder to lower pressure piping or systems. Do not heat 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. Do not insert any object (i.e.: screwdriver) into valve cap openings as this can damage the valve causing leakage.

Methane is a Flammable Gas! Store and use only in appropriate locations as specified by the NEC (National Electrical Code). Containers and all piping and associated material handling equipment must be Grounded /Bonded according to NEC during use to prevent the accumulation of static electricity which can act as an ignition source.

Storage Requirements:

Protect cylinders from physical damage. Store in cool, dry, well-ventilated area away from heavy traffic areas and emergency exits. Do not allow the temperature where cylinders are stored to exceed 125 degrees F (52 degrees 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. Post "NO SMOKING OR OPEN FLAMES" sign in the storage or use area.

For additional recommendations consult Compressed Gas Association Pamphlet P-1.

Never carry a compressed gas cylinder or a container of a gas in cryogenic liquid form in an enclosed space such as a car trunk, van or station wagon. A leak can result in a fire, explosion, asphyxiation or a toxic exposure.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls:

Provide general room ventilation and local exhaust to prevent accumulation above the exposure limit and to maintain oxygen levels above 19.5%. Mechanical ventilation should be designed in accordance with electrical codes.

Personal Protective Equipment:

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Personal protective equipment

Respiratory protection: Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type AXBEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection: Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching gloves outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. Full contact Material: Fluorinated rubber Minimum layer thickness: 0.7 mm Break through time: 480 min Material tested:Vitoject (KCL 890 / Aldrich Z677698, Size M)

Splash protection: Material: Nitrile rubber Minimum layer thickness: 0.4 mm Break through time: 60 min Material tested:Camatril (KCL 730 / Aldrich Z677442, Size M) data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374 If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an Industrial Hygienist familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Eye protection: Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection: impervious clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures: General industrial hygiene practice.

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Components with workplace control parameters

TWA 1,000 ppm USA. ACGIH Threshold Limit Values (TLV)
Central Nervous System impairment Cardiac sensitization

9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	**Colorless Gas**		
Physical State:	**Gas**	**Odor:**	**Odorless**
Odor Threshold:	**Not Available**	**Molecular Formula:**	**CH4**
Particle Size:	**Not Applicable**	**Solubility:**	**Not Determined**
Specific Gravity or Density:	**Not Applicable**	**Softening Point:**	**Not Applicable**
Viscosity:	**Not Determined**	**Percent Volatile:**	**100%**
Boiling Point:	**-161° C (-259° F)**	**Heat Value:**	**Not Available**
Flammability:	**Flammable Gas**	**Freezing or Melting Point:**	**-188° C (-306° F) (Melting Point)**
Vapor Pressure:	**Not Applicable**	**Flash Point:**	**Not Applicable**
Potentia Hydrogenii:	**Not Applicable**	**Octanol:**	**Not Applicable**
Evaporation Rate:	**Not Applicable**	**Vapor Density:**	**0.6 (Air=1)**
Molecular weight:	**16.043**	**Volatile organic compound:**	**Not Applicable**
Decompression Temperature:	**Not Applicable**	**Bulk Density:**	**Not Applicable**
		Autoignition Temperature:	**595° C (1103° F)**
		Upper Flammability Limit	**15% / 5%**

and Lower Flammability Limit:

10 STABILITY AND REACTIVITY

Reactivity:	**N/A**
Chemical Stability:	**Stable**
Conditions to Avoldentification:	**Avoid heat, sparks, and flame.**
Materials to Avoldentification:	**Oxygen and other oxidizers, Halogens**
Hazardous Decomposition:	**Oxides of Carbon**
Hazardous Polymerization:	**Will not occur.**

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11 TOXICOLOGICAL INFORMATION

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Information on toxicological effects

Acute toxicity:
Oral LD50 no data available
Inhalation LC50
Dermal LD50
Other information on acute toxicity

Skin corrosion/irritation: no data available

Serious eye damage/eye irritation: no data available

Respiratory or skin sensitization: no data available

Germ cell mutagenicity: no data available

Carcinogenicity:
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity: no data available

Teratogenicity: no data available

Specific target organ toxicity - single exposure (Globally Harmonized System):
no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System):
no data available

Aspiration hazard: no data available

Potential health effects: Inhalation May be harmful if inhaled. May cause respiratory tract irritation. Ingestion May be harmful if swallowed. Skin May be harmful if absorbed through skin. May cause skin irritation. Eyes May cause eye irritation.

Signs and Symptoms of Exposure: To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Synergistic effects: no data available

Additional Information:

RTECS: PA1490000

High concentrations of aliphatic hydrocarbon gases may cause CNS depression. Recent information suggests that C1 - C4 aliphatic (alkane) hydrocarbon gases can cause potentially fatal cardiac arrhythmias. Cardiac sensitization to adrenalin in dogs has been noted following inhalation. In dogs, the heart was more sensitive to epinephrine induced ventricular fibrillations following exposure to 15 - 90% propane for 10 minutes. Ventricular fibrillations have been reported in a 15 year old girl and a 14 year old boy following inhalation of n-butane (concentration not reported).

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12 ECOLOGICAL INFORMATION

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Information on ecological effects
Toxicity: no data available
Persistence and degradability: no data available
Bioaccumulative potential: no data available
Mobility in soil: no data available
PBT and vPvB assessment: no data available
Other adverse effects: no data available

13 DISPOSAL CONSIDERATIONS

Do not attempt to dispose of residual waste or unused quantities in returnable containers. Return in shipping container, properly labeled, with any valve outlet plugs or caps secured and valve protection cap in place to Norco for proper disposal.

14 TRANSPORT INFORMATION

UN1971, Methane, compressed or Natural gas, compressed (with high methane content), 2.1
UN Proper Shipping Name US:
UN1971, Methane, Compressed, 2.1

Proper Shipping Name Canada:
UN1971, Methane, Compressed, 2.1

15 REGULATORY INFORMATION

[%] RQ (CAS#) Substance - Reg Codes

[>99.0%] Methane (74-82-8) MASS, NJHS, PA, TSCA, TXAIR

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Regulatory Code Legend
-----------------------------------------------------------------
MASS = MA Massachusetts Hazardous Substances List
NJHS = NJ Right-to-Know Hazardous Substances
PA = PA Right-To-Know List of Hazardous Substances
TSCA = Toxic Substances Control Act
TXAIR = TX Air Contaminants with Health Effects Screening Level
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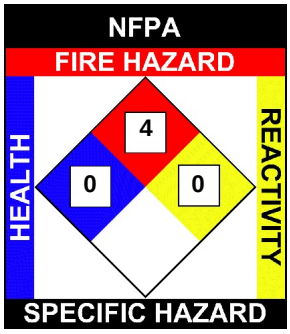
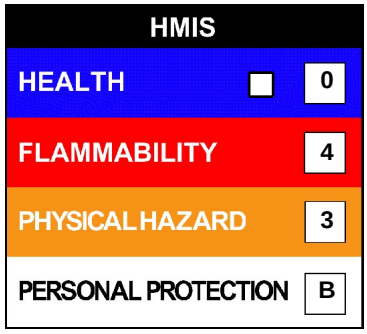
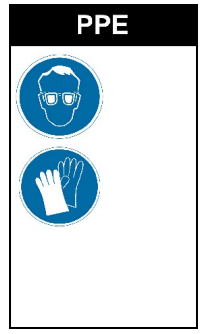
16 OTHER INFORMATION

NFPA: **Health = 0, Fire = 4, Reactivity = 0, Specific Hazard = n/a**
HMIS III: **Health = 0, Fire = 4, Physical Hazard = 3**
HMIS PPE: **B - Safety Glasses, Gloves**







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