

1 Identification

Product identifier

Product name: Methane

Stock number: 20919

CAS Number:
74-82-8

EC number:
200-812-7

Index number:
601-001-00-4

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

Identified use: SU24 Scientific research and development

Details of the supplier of the safety data sheet

Manufacturer/Supplier:

Alfa Aesar
Thermo Fisher Scientific Chemicals, Inc.
30 Bond Street
Ward Hill, MA 01835-8099
Tel: 800-343-0660
Fax: 800-322-4757
Email: tech@alfa.com
www.alfa.com

Information Department: Health, Safety and Environmental Department

Emergency telephone number:

During normal business hours (Monday-Friday, 8am-7pm EST), call (800) 343-0660. After normal business hours, call Carechem 24 at (866) 928-0789.

2 Hazard(s) identification

Classification of the substance or mixture in accordance with 29 CFR 1910 (OSHA HCS)



GHS02 Flame

Flam. Gas 1 H220 Extremely flammable gas.



GHS04 Gas cylinder

Press. Gas H280 Contains gas under pressure; may explode if heated.

Hazards not otherwise classified No information known.

Label elements

GHS label elements The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)

Hazard pictograms



GHS02 GHS04

Signal word

Danger

Hazard statements

H220 Extremely flammable gas.

H280 Contains gas under pressure; may explode if heated.

Precautionary statements

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.

P377 Leaking gas fire: Do not extinguish, unless leak can be stopped safely.

P381 Eliminate all ignition sources if safe to do so.

P410+P403 Protect from sunlight. Store in a well-ventilated place.

P403 Store in a well-ventilated place.

WHMIS classification

A - Compressed gas

B1 - Flammable gas



Classification system

HMIS ratings (scale 0-4)

(Hazardous Materials Identification System)

HEALTH 1 Health (acute effects) = 1

FIRE 4 Flammability = 4

REACTIVITY 0 Physical Hazard = 0

Other hazards

Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

3 Composition/information on ingredients

Chemical characterization: Substances

CAS# Description:

74-82-8 Methane

Identification number(s):

EC number: 200-812-7

Index number: 601-001-00-4

Product name: **Methane**

(Contd. of page 1)

4 First-aid measures

Description of first aid measures
After inhalation
Supply fresh air. If required, provide artificial respiration. Keep patient warm.
Seek immediate medical advice.
After skin contact
Immediately wash with water and soap and rinse thoroughly.
Seek immediate medical advice.
After eye contact Rinse opened eye for several minutes under running water. Then consult a doctor.
After swallowing Seek medical treatment.
Information for doctor
Most important symptoms and effects, both acute and delayed No further relevant information available.
Indication of any immediate medical attention and special treatment needed No further relevant information available.

5 Fire-fighting measures

Extinguishing media
Suitable extinguishing agents Stop flow of gas. Do not extinguish fire unless flow of gas can be stopped. Use water spray to keep container cool.
Special hazards arising from the substance or mixture If this product is involved in a fire, the following can be released:
Advice for firefighters
Protective equipment:
Wear self-contained respirator.
Wear fully protective impervious suit.

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation
Keep away from ignition sources
Environmental precautions: Do not allow material to be released to the environment without proper governmental permits.
Methods and material for containment and cleaning up:
Keep away from ignition sources.
Ensure adequate ventilation.
Prevention of secondary hazards: Keep away from ignition sources.
Reference to other sections
See Section 7 for information on safe handling
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

Handling
Precautions for safe handling
Keep container tightly sealed.
Store in cool, dry place in tightly closed containers.
Keep away from heat and direct sunlight.
Ensure good ventilation at the workplace.
Open and handle container with care.
Information about protection against explosions and fires:
Protect against electrostatic charges.
Keep ignition sources away.
Conditions for safe storage, including any incompatibilities
Storage
Requirements to be met by storerooms and receptacles: Store in a cool location.
Information about storage in one common storage facility:
Store away from oxidizing agents.
Store away from halogens.
Further information about storage conditions:
Keep container tightly sealed.
Store in cool, dry conditions in well sealed containers.
Protect from heat and direct sunlight.
Maximum storage temperature: 52 degrees C
Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

Additional information about design of technical systems:
Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Control parameters

Components with limit values that require monitoring at the workplace:

74-82-8 Methane (100.0%)

| | |
|-------------|---|
| TLV (USA) | refer to Appendix F: minimal oxygen content |
| EL (Canada) | Long-term value: 1000 ppm |
| EV (Canada) | Long-term value: 1.000 ppm |

Additional information: No data

Exposure controls
Personal protective equipment
General protective and hygienic measures
The usual precautionary measures for handling chemicals should be followed.
Keep away from foodstuffs, beverages and feed.
Remove all soiled and contaminated clothing immediately.
Wash hands before breaks and at the end of work.
Maintain an ergonomically appropriate working environment.
Breathing equipment:
Use suitable respirator when high concentrations are present.
Use suitable respiratory protective device in case of insufficient ventilation.
Protection of hands:
Impervious gloves
Check protective gloves prior to each use for their proper condition.
The selection of suitable gloves not only depends on the material, but also on quality. Quality will vary from manufacturer to manufacturer.

(Contd. on page 3)
USA

| | |
|---|--|
| Product name: Methane | |
| <div>Penetration time of glove material (in minutes) Not determined Eye protection: Safety glasses Body protection: Protective work clothing.</div> <div>(Contd. of page 2)</div> | |
| 9 Physical and chemical properties | |
| <div>Information on basic physical and chemical properties General Information Appearance: Form: Gaseous Color: Colorless Odor: Odorless Odor threshold: Not determined. pH-value: Not determined.</div> <div>Change in condition Melting point/Melting range: -182.48 °C (-296 °F) Boiling point/Boiling range: -164 °C (-263 °F) Sublimation temperature / start: Not determined</div> <div>Flash point: -221 °C (-366 °F) Flammability (solid, gaseous) Extremely flammable Ignition temperature: 536 °C (997 °F) Decomposition temperature: Not determined Auto igniting: Not determined.</div> <div>Danger of explosion: Not determined. Explosion limits: Lower: 5 Vol % Upper: 15 Vol % Vapor pressure: Not determined Density at 20 °C (68 °F): 0.717 g/cm³ (5.983 lbs/gal) Relative density: Not determined. Vapor density: Not determined. Evaporation rate: Not applicable. Solubility in / Miscibility with Water: Not determined Partition coefficient (n-octanol/water): Not determined. Viscosity: dynamic: Not determined. kinematic: Not determined. Other information: No further relevant information available.</div> | |
| 10 Stability and reactivity Reactivity No information known. Chemical stability Stable under recommended storage conditions. Thermal decomposition / conditions to be avoided: Decomposition will not occur if used and stored according to specifications. Possibility of hazardous reactions Reacts with halogenated compounds Reacts violently with interhalogens. Reacts with oxidizing agents Reacts with oxygen Conditions to avoid No further relevant information available. Incompatible materials: Oxidizing agents Halogens Interhalogens Oxygen Hazardous decomposition products: None known. | |
| 11 Toxicological information Information on toxicological effects Acute toxicity: No effects known. LD/LC50 values that are relevant for classification: No data Skin irritation or corrosion: Generally the product does not irritate the skin. Eye irritation or corrosion: No irritant effect. Sensitization: No sensitizing effects known. Germ cell mutagenicity: No effects known. Carcinogenicity: No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH. Reproductive toxicity: No effects known. Specific target organ system toxicity - repeated exposure: No effects known. Specific target organ system toxicity - single exposure: No effects known. Aspiration hazard: No effects known. Subacute to chronic toxicity: Methane gas acts as an asphyxiant, displacing air. Exposure can cause nausea, headache and vomiting. Subacute to chronic toxicity: No effects known. Additional toxicological information: To the best of our knowledge the acute and chronic toxicity of this substance is not fully known. | |
| 12 Ecological information Toxicity Aquatic toxicity: No further relevant information available. Persistence and degradability No further relevant information available. Bioaccumulative potential No further relevant information available. Mobility in soil No further relevant information available. Additional ecological information: General notes: Do not allow material to be released to the environment without proper governmental permits. Do not allow undiluted product or large quantities to reach ground water, water course or sewage system. Avoid transfer into the environment. Results of PBT and vPvB assessment PBT: Not applicable. vPvB: Not applicable. | |

Product name: Methane

Other adverse effects No further relevant information available.

(Contd. of page 3)

13 Disposal considerations

Waste treatment methods

Recommendation Consult state, local or national regulations to ensure proper disposal.

Uncleaned packagings:

Recommendation: Disposal must be made according to official regulations.

14 Transport information

UN-Number

DOT, IMDG, IATA

UN1971

UN proper shipping name

DOT Methane, compressed
IMDG, IATA METHANE, COMPRESSED

Transport hazard class(es)

DOT



Class 2.1
Label 2.1
Class 2 1F Gases
Label 2.1
IMDG, IATA



Class 2.1
Label 2.1

Packing group

DOT, IMDG, IATA Not applicable

Environmental hazards: Not applicable.

Special precautions for user Warning: Gases

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code Not applicable.

Transport/Additional information:

DOT
Marine Pollutant (DOT): No

UN "Model Regulation": UN1971, Methane, compressed, 2.1

15 Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

GHS label elements The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)

Hazard pictograms



GHS02 GHS04

Signal word Danger

Hazard statements

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

Precautionary statements

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P377 Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
P381 Eliminate all ignition sources if safe to do so.
P410+P403 Protect from sunlight. Store in a well-ventilated place.
P403 Store in a well-ventilated place.

National regulations

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

All components of this product are listed on the Canadian Domestic Substances List (DSL).

SARA Section 313 (specific toxic chemical listings) Substance is not listed.

California Proposition 65

Prop 65 - Chemicals known to cause cancer Substance is not listed.

Prop 65 - Developmental toxicity Substance is not listed.

Prop 65 - Developmental toxicity, female Substance is not listed.

Prop 65 - Developmental toxicity, male Substance is not listed.

Information about limitation of use: For use only by technically qualified individuals.

Other regulations, limitations and prohibitive regulations

Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006. Substance is not listed.

The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the market and use must be observed.

Substance is not listed.

Annex XIV of the REACH Regulations (requiring Authorisation for use) Substance is not listed.

Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing SDS: Global Marketing Department

Date of preparation / last revision 11/23/2015 / -

(Contd. on page 5)
USA

| | |
|--|--------------------|
| Product name: Methane | |
| <div>Abbreviations and acronyms: RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail) ICAO: International Civil Aviation Organization ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road) IMDG: International Maritime Code for Dangerous Goods DOT: US Department of Transportation IATA: International Air Transport Association EINECS: European Inventory of Existing Commercial Chemical Substances CAS: Chemical Abstracts Service (division of the American Chemical Society) HMIS: Hazardous Materials Identification System (USA) WHMIS: Workplace Hazardous Materials Information System (Canada) LC50: Lethal concentration, 50 percent LD50: Lethal dose, 50 percent vPvB: very Persistent and very Bioaccumulative ACGIH: American Conference of Governmental Industrial Hygienists (USA) OSHA: Occupational Safety and Health Administration (USA) NTP: National Toxicology Program (USA) IARC: International Agency for Research on Cancer EPA: Environmental Protection Agency (USA)</div> | (Contd. of page 4) |
| USA | |