

SAFETY DATA SHEET

Based upon Regulation (EC) No. 1907/2006, as amended by Regulation (EC) No. 453/2010

methane, compressed

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier:

Product name : methane, compressed

Synonyms : biogas, compressed; carburetted hydrogen, compressed; hydrogenbicarbide, compressed; light carburetted hydrogen,

compressed; methane; methyl hydride, compressed; natural gas, compressed; process stream (=methane),

compressed; pro stream (=methane), compressed; R50

Registration number REACH : 01-2119474442-39

Product type REACH : Substance/mono-constituent

 CAS number
 : 74-82-8

 EC index number
 : 601-001-00-4

 EC number
 : 200-812-7

 RTECS number
 : PA1490000

 Molecular mass
 : 16.04 g/mol

 Formula
 : CH4

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

1.2.1 Relevant identified uses

Industrial and professional use. Before use: carry out a risk assessment

1.2.2 Uses advised against

No uses advised against known

1.3 Details of the supplier of the safety data sheet:

Supplier of the safety data sheet

BALCHEM NV Westvaartdiik 85

B-1850 Grimbergen Belgium

****** +32 2 251 60 87

= +32 2 252 17 51

info.grimbergen@balchem.com

Distributor of the product

BALCHEM NV

Westvaartdijk 85

B-1850 Grimbergen Belgium

****** +32 2 251 60 87

(- +32 2 252 17 51

info.grimbergen@balchem.com

1.4 Emergency telephone number:

24h/24h (Telephone advice: English, French, German, Dutch):

+32 14 58 45 45 (BIG)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture:

Classified as dangerous according to the criteria of Regulation (EC) No 1272/2008

Class	Category	Hazard statements
Flam. Gas	category 1	H220: Extremely flammable gas.
Press. Gas	Compressed gas	H280: Contains gas under pressure; may explode if heated.

2.2 Label elements:





Signal word

Danger

Created by: Brandweerinformatiecentrum voor gevaarlijke stoffen vzw (BIG)

Technische Schoolstraat 43 A, B-2440 Geel

http://www.big.be

Revision number: 0000

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H-statements

H220 Extremely flammable gas.

H280 Contains gas under pressure; may explode if heated.

P-statements

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P381 Eliminate all ignition sources if safe to do so.

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

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

2.3 Other hazards:

May build up electrostatic charges: risk of ignition

May be ignited by sparks

Large spills/in enclosed spaces: risk of oxygen deficiency

SECTION 3: Composition/information on ingredients

3.1 Substances:

	CAS No EC No	Conc. (C)	Classification according to CLP	Note	Remark
methane	74-82-8	100 %	Flam. Gas 1; H220	(1)(10)(2)	Mono-constituent
01-2119474442-39	200-812-7		Press. Gas - Compressed gas;		
			H280		

- (1) For H-statements in full: see heading 16
- (2) Substance with a Community workplace exposure limit
- (10) Subject to restrictions of Annex XVII of Regulation (EC) No. 1907/2006

3.2 Mixtures:

Not applicable

SECTION 4: First aid measures

4.1 Description of first aid measures:

General:

Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with laboured breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital.

After inhalation:

Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.

After skin contact:

Not applicable.

After eye contact:

Rinse with water. Take victim to an ophthalmologist if irritation persists.

After ingestion:

Not applicable.

4.2 Most important symptoms and effects, both acute and delayed:

4.2.1 Acute symptoms

After inhalation:

EXPOSURE TO HIGH CONCENTRATIONS: Nausea. Headache. Dizziness. Feeling of weakness. Coordination disorders.

After skin contact:

No effects known.

After eye contact:

No effects known.

After ingestion:

Not applicable.

4.2.2 Delayed symptoms

No effects known.

4.3 Indication of any immediate medical attention and special treatment needed:

If applicable and available it will be listed below.

SECTION 5: Firefighting measures

5.1 Extinguishing media:

5.1.1 Suitable extinguishing media:

BC powder. Carbon dioxide.

5.1.2 Unsuitable extinguishing media:

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Solid water jet ineffective as extinguishing medium.

5.2 Special hazards arising from the substance or mixture:

Upon combustion: CO and CO2 are formed.

5.3 Advice for firefighters:

5.3.1 Instructions:

If no hazard for/from the surroundings: controlled burning. If hazardous substances are nearby: consider extinguishment. Extinguish only if gas supply/leak can be shut afterwards. Cool tanks/drums with water spray/remove them into safety. Physical explosion risk: extinguish/cool from behind cover. Do not move the load if exposed to heat. After cooling: persistant risk of physical explosion.

5.3.2 Special protective equipment for fire-fighters:

Gloves. Protective clothing. Large spills/in enclosed spaces: compressed air apparatus. Heat/fire exposure: compressed air/oxygen apparatus.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures:

Keep upwind. Close doors and windows of adjacent premises. Stop engines and no smoking. No naked flames or sparks. Spark- and explosion proof appliances and lighting equipment.

6.1.1 Protective equipment for non-emergency personnel

See heading 8.2

6.1.2 Protective equipment for emergency responders

Gloves. Protective clothing. Large spills/in enclosed spaces: compressed air apparatus.

Suitable protective clothing

See heading 8.2

6.2 Environmental precautions:

Contain released substance, pump into suitable containers. Plug the leak, cut off the supply.

6.3 Methods and material for containment and cleaning up:

Damaged/cooled tanks must be emptied. Do not use compressed air for pumping over spills. Take collected spill to manufacturer/competent authority. Wash clothing and equipment after handling.

6.4 Reference to other sections:

See heading 13.

SECTION 7: Handling and storage

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

7.1 Precautions for safe handling:

Use spark-/explosionproof appliances and lighting system. Use earthed equipment. Keep away from naked flames/heat. Keep away from ignition sources/sparks. Gas/vapour lighter than air at 20°C. Observe normal hygiene standards.

7.2 Conditions for safe storage, including any incompatibilities:

7.2.1 Safe storage requirements:

Storage temperature: < 50 °C. Store below 50°C. Keep out of direct sunlight. Keep container in a well-ventilated place. Fireproof storeroom. Keep locked up. Provide for an automatic sprinkler system. Provide the tank with earthing. Keep only in the original container. Under a shelter/in the open. Meet the legal requirements.

7.2.2 Keep away from:

Heat sources, ignition sources, combustible materials, oxidizing agents, halogens.

7.2.3 Suitable packaging material:

Metal, stainless steel, aluminium.

7.2.4 Non suitable packaging material:

No data available

7.3 Specific end use(s):

If applicable and available, exposure scenarios are attached in annex. See information supplied by the manufacturer.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters:

8.1.1 Occupational exposure

a) Occupational exposure limit values

If limit values are applicable and available these will be listed below.

Belgium

Hydrocarbures aliphatiques sous forme gazeuse : (Alcanes C1-	Time-weighted average exposure limit 8 h	1000 ppm
C4)		

b) National biological limit values

If limit values are applicable and available these will be listed below.

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8.1.2 Sampling methods

If applicable and available it will be listed below.

8.1.3 Applicable limit values when using the substance or mixture as intended

If limit values are applicable and available these will be listed below.

8.1.4 DNEL/PNEC values

If applicable and available it will be listed below.

8.1.5 Control banding

If applicable and available it will be listed below.

8.2 Exposure controls:

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

8.2.1 Appropriate engineering controls

Use spark-/explosionproof appliances and lighting system. Use earthed equipment. Keep away from naked flames/heat. Keep away from ignition sources/sparks. Measure the concentration in the air regularly. Work under local exhaust/ventilation.

8.2.2 Individual protection measures, such as personal protective equipment

Observe normal hygiene standards. Do not eat, drink or smoke during work.

a) Respiratory protection:

High vapour/gas concentration: self-contained respirator.

b) Hand protection:

Gloves.

c) Eye protection:

Safety glasses.

d) Skin protection:

Protective clothing.

8.2.3 Environmental exposure controls:

See headings 6.2, 6.3 and 13

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties:

Physical form	Compressed gas
Odour	Odourless
Odour threshold	200 ppm
	131 mg/m³
Colour	Colourless
Particle size	Not applicable (gas)
Explosion limits	5 - 15.4 vol %
Flammability	Extremely flammable gas.
Log Kow	1.09 ; Experimental value ; 20 °C
Dynamic viscosity	No data available
Kinematic viscosity	No data available
Melting point	-182 °C
Boiling point	-162 °C
Flash point	No data available
Evaporation rate	No data available
Relative vapour density	0.55
Vapour pressure	1470 hPa ; 20 °C
Solubility	water ; < 0.1 g/100 ml
Relative density	0.47 ; -164 °C
Decomposition temperature	No data available
Auto-ignition temperature	595 ℃
Explosive properties	No chemical group associated with explosive properties
Oxidising properties	No chemical group associated with oxidising properties
рН	No data available

9.2 Other information:

Minimum ignition energy	0.28 mJ
Critical temperature	-82 °C
Critical pressure	46000 hPa
Absolute density	466 kg/m³: -164 °C

SECTION 10: Stability and reactivity

10.1 Reactivity:

May build up electrostatic charges: risk of ignition. May be ignited by sparks.

10.2 Chemical stability:

Stable under normal conditions.

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10.3 Possibility of hazardous reactions:

Reacts with (strong) oxidizers: (increased) risk of fire/explosion. Violent to explosive reaction with (some) halogens.

10.4 Conditions to avoid:

Use spark-/explosionproof appliances and lighting system. Use earthed equipment. Keep away from naked flames/heat. Keep away from ignition sources/sparks.

10.5 Incompatible materials:

Combustible materials, oxidizing agents, halogens.

10.6 Hazardous decomposition products:

Upon combustion: CO and CO2 are formed.

SECTION 11: Toxicological information

11.1 Information on toxicological effects:

11.1.1 Test results

Acute toxicity

methane, compressed

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value	Remark
						determination	
Oral						Data waiving	
Dermal						Data waiving	
Inhalation (gases)	LC50		1237 mg/l	2 h	Mouse (male)	Experimental value	

Conclusion

Not classified for acute toxicity

Corrosion/irritation

methane, compressed

Route of exposure	Result	Method	Exposure time	Time point	Species	Value	Remark
						determination	
Eye						Data waiving	
Skin						Data waiving	

Conclusion

Not classified as irritating to the skin

Not classified as irritating to the eyes

Not classified as irritating to the respiratory system

Respiratory or skin sensitisation

methane, compressed

Route of exposure	Result	Method	 Observation time point	Species	Value determination	Remark
Skin					Data waiving	
Inhalation					Data waiving	

Conclusion

Not classified as sensitizing for skin

Not classified as sensitizing for inhalation

Specific target organ toxicity

methane, compressed

				_				
Route of exposure	Parameter	Method	Value	Organ	Effect	Exposure time	Species	Value
								determination
Oral								Data waiving
Dermal								Data waiving
Inhalation (gases)			21394 mg/m ³		No effect	28 day(s)	Rat (male/female)	Experimental value
	systemic		air					
	effects							

Conclusion

Not classified for subchronic toxicity

Mutagenicity (in vitro)

methane, compressed

ethane, compressed								
Result	Method	Test substrate	Effect	Value determination				
Negative	OECD 473	Human lymphocytes		Experimental value				
Negative	OECD 471	Bacteria (S.typhimurium)		Experimental value				

Mutagenicity (in vivo)

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methane, compressed

Result	Method	Exposure time	Test substrate	Organ	Value determination
Negative	OECD 474	13 week(s)	Rat (male/female)		Read-across

Carcinogenicity

methane, compressed

Route of	Parameter	Method	Value	Exposure time	Species	Value	Organ	Effect
exposure						determination		
Inhalation						Data waiving		
Dermal						Data waiving		
Oral			·			Data waiving		·

Reproductive toxicity

methane, compressed

	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value
								determination
Developmental toxicity	NOAEC	OECD 422	21641 mg/m ³	6 week(s)	Rat	No effect		Experimental
			air		(male/female)			value
Maternal toxicity	NOAEC	OECD 422	21641 mg/m ³	6 week(s)	Rat (female)	No effect		Experimental
			air					value
Effects on fertility	NOAEC (P/F1)	OECD 422	21394	5 weeks	Rat	No effect		Experimental
				(6h/day, 7	(male/female)			value
				days/week)				

Conclusion CMR

Not classified for carcinogenicity

Not classified for mutagenic or genotoxic toxicity

Not classified for reprotoxic or developmental toxicity

Toxicity other effects

methane, compressed

No (test)data available

Chronic effects from short and long-term exposure

methane, compressed

No effects known.

SECTION 12: Ecological information

12.1 Toxicity:

methane, compressed

No (test)data available

Conclusion

Not classified as dangerous for the environment according to the criteria of Regulation (EC) No 1272/2008

12.2 Persistence and degradability:

methane, compressed

Biodegradation water

Method	Value	Duration	Value determination
OECD 301E: Modified OECD Screening Test	70 %		Experimental value

Phototransformation air (DT50 air)

Method	Value	Conc. OH-radicals	Value determination
	1906 day(s)	5E5 /cm³	Calculated value

Half-life soil (t1/2 soil)

Method	Primary degradation/mineralisation	Value determination
		Not applicable (gas)

Conclusion

Readily biodegradable in water

12.3 Bioaccumulative potential:

methane, compressed

Log Kow

	la 1		-	Value determination
Method	Remark	Value	Temperature	Value determination

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		20 °C	Experimental value
l .	1.05	20 C	LXPEHILIEHLAI VAIUE

Conclusion

Low potential for bioaccumulation (Log Kow < 4)

12.4 Mobility in soil:

No (test)data on mobility of the substance available

12.5 Results of PBT and vPvB assessment:

Substance does not meet the criteria of PBT, nor the criteria of vPvB according to Annex XIII of Regulation (EC) No 1907/2006, so is neither PBT nor vPvB.

12.6 Other adverse effects:

methane, compressed

Global warming potential (GWP)

Included in the list of substances which may contribute to the greenhouse effect (IPCC)

Ozone-depleting potential (ODP)

Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009)

SECTION 13: Disposal considerations

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

13.1 Waste treatment methods:

13.1.1 Provisions relating to waste

Waste material code (Directive 2008/98/EC, Decision 2000/0532/EC).

16 05 04* (gases in pressure containers and discarded chemicals: gases in pressure containers (including halons) containing dangerous substances). Depending on branch of industry and production process, also other waste codes may be applicable. Hazardous waste according to Regulation (EU) No 1357/2014.

13.1.2 Disposal methods

Refer to manufacturer/supplier for information on recovery/ recycling. Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Do not discharge into the sewer.

13.1.3 Packaging/Container

Waste material code packaging (Directive 2008/98/EC).

15 01 10* (packaging containing residues of or contaminated by dangerous substances).

SECTION 14: Transport information

Road (ADR)

14.1 UN number:		
UN number	1971	
14.2 UN proper shipping name:		
Proper shipping name	Methane, compressed	
14.3 Transport hazard class(es):		
Hazard identification number	23	
Class	2	
Classification code	1F	
14.4 Packing group:		
Packing group		
Labels	2.1	
14.5 Environmental hazards:		
Environmentally hazardous substance mark	no	
14.6 Special precautions for user:		
Special provisions	660	
Special provisions		
Special provisions	662	
Limited quantities	none.	
ail (RID)		
14.1 UN number:		
UN number	1971	
14.2 UN proper shipping name:		
Proper shipping name	Methane, compressed	
14.3 Transport hazard class(es):		
Hazard identification number	23	
Class	2	
Classification code	1F	

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methane, compressed 14.4 Packing group: Packing group 2.1 (+13) Labels 14.5 Environmental hazards: Environmentally hazardous substance mark no 14.6 Special precautions for user: 660 Special provisions Special provisions 662 Limited quantities none. 14.1 UN number:

n	and	water	ways	(ADN)

1112 011 1101110 011	
UN number	1971
14.2 UN proper shipping name:	
Proper shipping name	Methane, compressed
14.3 Transport hazard class(es):	
Class	2
Classification code	1F
14.4 Packing group:	
Packing group	
Labels	2.1
14.5 Environmental hazards:	
Environmentally hazardous substance mark	no
14.6 Special precautions for user:	
Special provisions	660
Special provisions	662
Limited quantities	none.

Sea (IMDG/IMSBC)

14.1 UN number:	-1
UN number	1971
14.2 UN proper shipping name:	
Proper shipping name	methane, compressed
14.3 Transport hazard class(es):	
Class	2.1
14.4 Packing group:	
Packing group	
Labels	2.1
14.5 Environmental hazards:	
Marine pollutant	-
Environmentally hazardous substance mark	no
14.6 Special precautions for user:	
Special provisions	
Limited quantities	none.
14.7 Transport in bulk according to Annex II of Marpol and the IBC Code:	
Annex II of MARPOL 73/78	Not applicable

Air (ICAO-TI/IATA-DGR)

14.1 UN number:

UN number	1971
14.2 UN proper shipping name:	
Proper shipping name	Methane, compressed
14.3 Transport hazard class(es):	
Class	2.1
14.4 Packing group:	
Packing group	
Labels	2.1
14.5 Environmental hazards:	
Environmentally hazardous substance mark	no
14.6 Special precautions for user:	
Special provisions	A1
Passenger and cargo transport: limited quantities: maximum net quantity	

SECTION 15: Regulatory information

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

European legislation:

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VOC content Directive 2010/75/EU

VOC content	Remark
100 %	

REACH Annex XVII - Restriction

Subject to restrictions of Annex XVII of Regulation (EC) No. 1907/2006: restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles.

	Designation of the substance, of the group of substances or of the mixture	Conditions of restriction
· methane	2 or 3, flammable solids category 1 or 2,	1. Shall not be used, as substance or as mixtures in aerosol dispensers where these aerosol dispensers are intended for supply to the general public for entertainment and decorative purposes such as the following: — metallic glitter intended mainly for decoration, — artificial snow and frost, — "whoopee" cushions, — silly string aerosols, — imitation excrement, — horns for parties, — decorative flakes and foams, — artificial cobwebs, — stink bombs.2. Without prejudice to the application of other Community provisions on the classification, packaging and labelling of substances, suppliers shall ensure before the placing on the market that the packaging of aerosol dispensers referred to above is marked visibly, legibly and indelibly with: "For professional users only".3. By way of derogation, paragraphs 1 and 2 shall not apply to the aerosol dispensers referred to Article 8 (1a) of Council Directive 75/324/EEC.4. The aerosol dispensers referred to in paragraphs 1 and 2 shall not be placed on the market unless they conform to the requirements indicated.

National legislation The Netherlands

Waste identification (the	LWCA (the Netherlands): KGA category 06
Netherlands)	
Waterbezwaarlijkheid	11

National legislation Germany

	nwg; Classification non-water polluting in compliance with Verwaltungsvorschrift wassergefährdender Stoffe (VwVwS) o	
	27 July 2005 (Anhang 1)	
TA-Luft	5.2.5	

National legislation France

No data available

National legislation Belgium

No data available

Other relevant data

No data available

15.2 Chemical safety assessment:

A chemical safety assessment has been performed.

SECTION 16: Other information

Full text of any H-statements referred to under headings 2 and 3:

H220 Extremely flammable gas.

H280 Contains gas under pressure; may explode if heated.

(*) = INTERNAL CLASSIFICATION BY BIG

PBT-substances = persistent, bioaccumulative and toxic substances

CLP (EU-GHS) Classification, labelling and packaging (Globally Harmonised System in Europe)

The information in this safety data sheet is based on data and samples provided to BIG. The sheet was written to the best of our ability and according to the state of knowledge at that time. The safety data sheet only constitutes a guideline for the safe handling, use, consumption, storage, transport and disposal of the substances/preparations/mixtures mentioned under point 1. New safety data sheets are written from time to time. Only the most recent versions may be used. Old versions must be destroyed. Unless indicated otherwise word for word on the safety data sheet, the information does not apply to substances/preparations/mixtures in purer form, mixed with other substances or in processes. The safety data sheet offers no quality specification for the substances/preparations/mixtures in question. Compliance with the instructions in this safety data sheet does not release the user from the obligation to take all measures dictated by common sense, regulations and recommendations or which are necessary and/or useful based on the real applicable circumstances. BIG does not guarantee the accuracy or exhaustiveness of the information provided and cannot be held liable for any changes by third parties. This safety data sheet is only to be used within the European Union, Switzerland, Iceland, Norway and Liechtenstein. Any use outside of this area is at your own risk. Use of this safety data sheet is subject to the licence and liability limiting conditions as stated in your BIG licence agreement or when this is failing the general conditions of BIG. All intellectual property rights to this sheet are the property of BIG and its distribution and reproduction are limited. Consult the mentioned agreement/conditions for details.

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