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

1.1. Product identifier

Trade name	Blend: Methane – CO_2 – Nitrogen – Ethane - Propane
Chemical description	Methane – CO_2 – Nitrogen – Ethane - Propane
CAS N°	-
CE N°	-
Index N°	-
Registration n°	-
Chemical formula	CH_4 – CO_2 – N_2 – C_2H_6 – C_3H_8

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

Relevant identified uses	Industrial and professional Test gas/Calibration gas Chemical reaction / Synthesis Laboratory use Contact supplier for more information on uses
Uses advised against	Consumer use not recommended

1.3. Details of the supplier of the safety data sheet

Company identification	MULTIGAS Route de l'Industrie 102 CH-1564 Domdidier
Phone number	+41 (0) 26 676 94 94
E-mail address	info@multigas.ch

1.4. Emergency telephone numbers

145 (Toxicology Centre Zurich) or +41 (0) 44 251 51 51

+41 (0) 26 676 94 94 (Multigas)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Flammable gases, Category 1	H220
Gases under pressure : Compressed gas	H280

For the complete H-sentences texts mentioned in that chapter, refer to Section 16

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

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, hot surfaces, sparks, open flames and other ignition sources. No smoking
P377	Leaking gas fire: Do not extinguish, unless leak can be stopped safely
P381	In case of leakage, eliminate all ignition sources
P410+403	Protect from sunlight. Store in a well-ventilated place

2.3. Other hazards

None

SECTION 3: Composition/information on ingredients

3.1. Substances

Name	Product identifier	Concentration	Classification
Methane	(CAS-No.) 74-82-8 (EC-No.) 200-812-7 (EC Index-No.) 601-001-00-4 (Registration-No.) 01-2119474442-39	>91.09%	Flam. Gas 1, H220 Press. Gas (Comp.), H280
Carbon dioxide	(CAS-NO.) 124-38-9 (EC-NO.) 204-696-9 (EC Index-No.) - (Registration-No.) --	5%	Press. Gas (Liq.) ;H280
Nitrogen	(CAS-NO.) 7727-37-9 (EC-NO.) 231-783-9 (EC Index-No.) - (Registration-No.) --	2.5%	Press. Gas (Comp.) ;H280

Ethane	(CAS-NO.) 74-84-0 (EC-NO.) 200-814-8 (EC Index-No.) 601-002-00-X (Registration-No.) 01-2119486765-21	1%	Flam. gas 1 ;H220 Press. Gas (Liq.) ;H280
Oxygene	(CAS-NO.) 7782-44-7 (EC-NO.) 231-956-9 (EC Index-No.) 008-001-00-8 (Registration-No.) --	0.2%	Ox. Gas 1 ;H270 Press. Gas (Comp.) ;H280
Propane	(CAS-NO.) 74-98-6 (EC-NO.) 200-827-9 (EC Index-No.) 601-003-00-5 (Registration-No.) 01-2119486944-21	0.2%	Flam. gas 1 ;H220 Press. Gas (Liq.) ;H280
Tetrahydrothiophene	(CAS-NO.) 110-01-0 (EC-NO.) 203-728-9 (EC Index-No.) - (Registration-No.) --	4 ppm (0.0004%)	Flam. Liq. 2 ;H225 Acute Tox. Inha 4 ;H332 Acute Tox. Derm 4 ;H312 Acute Tox. Oral 4 ;H302 Eye Irrit. 2 ;H319 Skin Irrit. 2 ;H315 Aquatic Chronic 3 ;H412
Hydrogen sulphide	(CAS-NO.) 7783-06-4 (EC-NO.) 231-977-3 (EC Index-No.) 016-001-00-4 (Registration-No.) 01-2119445737-29	4 ppm (0.0004%)	Flam. gas 1 ;H220 Press. Gas (Liq.) ;H280 Acute Tox. Inha 2 ;H330 Aquatic Acute 1 ;H400 STOT SE 3 ;H335
Carbonyl sulfide	(CAS-NO.) 463-58-1 (EC-NO.) 207-340-0 (EC Index-No.) -- (Registration-No.) --	4 ppm (0.0004%)	Flam. gas 1 ;H220 Acute Tox. Inha 3 ;H331 Press. Gas (Liq.) ;H280

For the complete H-sentences texts mentioned in that chapter, refer to Section 16

Contains no other components or impurities which will influence the classification of the product

3.2. Mixtures

Not established

SECTION 4: First aid measures

4.1. Description of first aid measures

General advice See a doctor. Show this safety data sheet to the attending physician

In case of inhalation In case of inhalation, remove the person from the contaminated area. In case of respiratory arrest, give artificial respiration. See a doctor

In case of skin contact Adverse effects not expected from this product

In case of eyes contact Adverse effects not expected from this product

In case of ingestion	Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. See a doctor

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

Refer to section 11

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

None

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	All known extinguishing agents can be used
Unsuitable extinguishing media	Do not use water jet to extinguish

5.2. Special hazards arising from the substance or mixture

Specific hazards	In case of fire or excessive heat, hazardous combustion products may be produced Exposure to fire may cause containers to rupture/explode
Hazardous combustion products	In case of fire or excessive heat, hazardous combustion products may be produced such as : carbon oxides

5.3. Additional information

Cool endangered receptacles with water spray jet from a protected position

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Avoid breathing vapours, spray mists or gases
Provide adequate ventilation
Beware of gas accumulating in explosive concentrations
Evacuate personnel to a safe place
Personal protective equipment, see section 8

6.2. Environmental precautions

Try to stop the leak

6.3. Methods and material for containment and cleaning up

Ventilate the area
Keep area evacuated and free from ignition sources until any spilled liquid has evaporated (ground free from frost)

6.4. Reference to other sections

See also sections 8 and 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Avoid contact with skin and eyes
Avoid breathing vapour or mist
Keep away from ignition sources (including static discharges) - No smoking
For precautions, see section 2.2

7.2. Conditions for safe storage, including any incompatibilities

Store in a cool place. Keep container tightly closed in a dry and well-ventilated place
Content under pressure

7.3. Specific end use(s)

None

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Components with occupational exposure limits

Component	CAS N°	Exposure value type	Control parameter	Source
Methane	74-82-8	TWA	10’000 ppm	SUVA: Limit values of exposure to workstations
			6’700 mg/m^3	
		OEL	-	SUVA: Limit values of exposure to workstations
			-	
Carbon dioxide	124-38-9	TWA	5'000 ppm	SUVA: Limit values of exposure to workstations
			10’000 mg/m^3	
		OEL	-	SUVA: Limit values of exposure to workstations
			-	
Nitrogen	7727-37-9	TWA	-	SUVA: Limit values of exposure to workstations
			-	
		OEL	-	SUVA: Limit values of exposure to workstations
			-	

Ethane	74-84-0	TWA	10'000 ppm 12’500 mg/m³	SUVA: Limit values of exposure to workstations
		OEL	- -	SUVA: Limit values of exposure to workstations
Oxygen	7782-44-7	TWA	- -	SUVA: Limit values of exposure to workstations
		OEL	- -	SUVA: Limit values of exposure to workstations
Propane	74-98-6	TWA	1'000 ppm 1’800 mg/m³	SUVA: Limit values of exposure to workstations
		OEL	4'000 ppm 7’200 mg/m³	SUVA: Limit values of exposure to workstations
Tetrahydrothiophene	110-01-0	TWA	50 ppm 180 mg/m³	SUVA: Limit values of exposure to workstations
		OEL	50 ppm 180 mg/m³	SUVA: Limit values of exposure to workstations
Hydrogen sulphide	7783-06-4	TWA	5 ppm 7.1 mg/m³	SUVA: Limit values of exposure to workstations
		OEL	10 ppm 14 mg/m³	SUVA: Limit values of exposure to workstations
Carbonyl sulphide	463-58-1	TWA	- -	SUVA: Limit values of exposure to workstations
		OEL	- -	SUVA: Limit values of exposure to workstations

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Provide adequate general and local exhaust ventilation

Gas detectors should be used when flammable / toxic gases / vapours are likely to be released

8.2.2. Individual protection measures, e.g. personal protective equipment

Eye/face protection

Wear goggles and a face shield when transfilling or breaking transfer connections. Standard EN 166

Skin / hand protection

Wear protective gloves when handling gas cylinders. Standard EN 388- Protective gloves against mechanical hazards Wear cold insulating gloves when transferring or disconnecting transfer lines Standard EN 511 -

	Insulating gloves against cold Wearing chemical resistant gloves Standard EN 374-Protective gloves against chemicals **For short-term use** Material: Fluororubber Penetration time:> 60 min Glove thickness: 0.4 mm **For long-term use** Material: Nitrilerubber Penetration time:> 480 min Glove thickness: 0.7 mm Have appropriate, chemical-resistant protective clothing ready for use in emergencies
Respiratory protection	Self-contained breathing apparatus (SCBA) or a positive pressure air mask must be used in oxygenated atmospheres Standard EN 137 - Self-contained compressed air breathing apparatus and full-face mask

8.2.3. Environmental exposure controls

-

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	
• **Physical state at 20°C / 101.3kPa**	Gas
• **Colour**	Colourless
Odour	No data available
Odour threshold	No data available
pH	No data available
Melting point / Freezing point	No data available
Boiling point	No data available
Flash point	No data available
Evaporation rate	No data available
Flammability (solid, gas)	Extremely flammable gas
Explosive limits	No data available
Vapour pressure [20°C]	No data available
Vapour pressure [50°C]	No data available
Vapour density	No data available
Relative density, liquid (water=1)	No data available
Relative density, gas (air=1)	0.6
Water solubility	No data available

Partition coefficient n-octanol/water (Log Kow)	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Viscosity	No data available
Explosive properties	No data available
Oxidising properties	No data available

9.2. Other information

Molar mass	17.93 g/mol
Critical temperature [°C]	No data available
Relative vapour density	0.6

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 recommended storage conditions

10.3. Possibility of hazardous reactions

Can form explosive mixture with air.
May react violently with oxidants

10.4. Conditions to avoid

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

10.5. Incompatible materials

Strong oxidisers
For additional information on compatibility refer to ISO 11114

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced

SECTION 11: Toxicological information

11.1. Chemical safety assessment

Acute toxicity	Toxicological effects not expected from this product if occupational exposure limit values are not exceeded
Skin corrosion/irritation	No adverse effects expected with this product
Serious eye damage/irritation	In case of direct contact with the eyes, consult a doctor
Respiratory or skin sensitisation	No data available
Germ cell mutagenicity	No data available
Carcinogenicity	No data available
Reproductive toxicity	No data available
STOT-single exposure – Target organ(s)	No data available
STOT-repeated exposure	No data available
Ingestion hazard	No data available
Inhalation hazard	Inhalation can have an effect on the central nervous system. May cause asphyxiation at high concentrations. Symptoms may include loss of consciousness or motor skills. Victim may not be warned of asphyxiation. Asphyxiation can cause unconsciousness without warning and may be so rapid that the victim will be unable to protect himself or herself

SECTION 12: Ecological information

12.1. Toxicity

Assessment Classification criteria are not met

12.2. Persistence and degradability

No data available

12.3. Bioaccumulative potential

No data available

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

PBT / vPvB assessment is not available because the chemical safety assessment is not required / is not conducted

12.6. Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product

Must not be released into the atmosphere

Burn in a chemical incinerator equipped with an afterburner and scrubber

Return to the supplier the product not consumed in its original container

Contaminated container

Eliminate as unused product

Contact the supplier if instructions are needed

OMoD Code

16 05 04

Gases in pressure containers (including halons) containing dangerous substances

SECTION 14: Transport information

14.1. UN number

Transport par road/rail ADR / RID	Transport by sea IMDG	Transport by air IATA
1954	1954	1954

14.2. UN proper shipping name

Transport par road/rail ADR / RID	Transport by sea IMDG	Transport by air IATA
Compressed gas, flammable, N.O.S., (Methane, Hydrogen sulphide)	COMPRESSED GAS, FLAMMABLE, N.O.S., (Methane, Hydrogen sulphide)	compressed gas, flammable, N.O.S., (Methane, Hydrogen sulphide)

14.3. Transport hazard class(es)

Labelling

ADR/RID
IMDG
IATA

2.1 : Flammable gases

14.4. Packing group

ADR/RID
IMDG
IATA

Not established

14.5. Environmental hazards

ADR/RID

None

IMDG

None

ICAO-TI / IATA-DGR None

14.6. Special precautions for user

No data available

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

SECTION 15: Regulatory information

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

This safety data sheet complies with the requirements of Regulation (CE) No. 1907/2006

15.2. Chemical safety assessment

A CSA has been carried out

SECTION 16: Other information

Indication of changes Revised safety data sheet in accordance with commission regulation (EU) No 2015/830

Abbreviations and acronyms

ADR :	European Agreement concerning the International Carriage of Dangerous Goods by Road
CAS :	Chemical Abstract Service number (USA)
CLP :	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
CSA :	Chemical Safety Assessment
EIGA :	European Industrial Gases Association
EINECS :	European Inventory of Existing Commercial Chemical Substances
EN :	European Standard
ATE :	Acute Toxicity Estimate
IATA :	International Air Transport Association
IMDG Code :	International Maritime Dangerous Goods Code
LC50 :	Lethal Concentration to 50 % of a test population
OMoD :	Swiss Ordinance on the movement of waste
PBT :	Persistent, Bioaccumulative and Toxic
PPE:	Personal Protection Equipment
REACH :	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
RID :	Regulations concerning the international carriage of dangerous goods by rail
RMM :	Risk Management Measures

STOT-SE :	Specific Target Organ Toxicity - Single Exposure
UN :	United Nations
vPvB :	Very Persistent and Very Bioaccumulative
WGK:	Water Hazards Class

Full text of H, EUH and P statements used in sections 2 and 3

Hazard statements

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

Precautionary statements

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
P377	Leaking gas fire: Do not extinguish, unless leak can be stopped safely
P381	In case of leakage, eliminate all ignition sources
P410+403	Protect from sunlight. Store in a well-ventilated place

Disclaimer of liability

Details given in this document have been prepared based on the most available reliable documents and are believed to be correct at the time of going to press

They do not claim to be exhaustive and should be considered as a guide