

	SAFETY DATA SHEET PROPANE	Date of issue 30.5.2001
		Revisions: 31.3.2017 – 8 th Issue Modifik.: Supersedes: 31.5.2015 – 7 th Issue

Product name: PROPANE

SECTION 1: Identification of the substance and of the company

1.1 Product identifier

Trade name: **Propane**
Name pursuant to CLP: EC 270-681-9 Hydrocarbons C3 – C4
Alternative names: Liquefied petroleum gases; LPGs
Registration No.: **01-2119486557-22-0008**

1.2 Relevant identified uses of the substance and uses advised against

Propane is mainly used as heating fluid or also for special purposes in mechanical engineering and the chemical industry. It is also used for deasphalting and solvent refining of mineral oils.
Propane shall not be used for other purposes not specified by a relevant process documentation. The use of propane in a facility not approved for its use, is strictly prohibited.

1.3 Details on MSDS Supplier

1.3.1 Business Name and Identification No.

UNIPETROL RPA s.r.o.	Company ID: 275 97 075
RAFINÉRIE, odštěpný závod	VAT: CZ 27597075
Záluží 2	www.unipetrolrpa.cz
Litvínov	E-mail: unipetrolrpa@unipetrol.cz
Postal code 436 01	

1.3.2 Place of business

Litvínov Refinery	Kralupy Refinery
P. O. BOX 47	P. O. BOX 96
436 01 Litvínov	278 01 Kralupy n/Vlt.
Tel.: +420 476 163 567	+420 315 718 500
Fax: +420 476 165 086	+420 315 718 640

www.crc.cz info@crc.cz

1.3.3 Person responsible for the Material Safety Data Sheet

Ing. Milan Podhora	phone:	+420 476 164 308
	E-mail:	milan.podhora@unipetrol.cz

1.4 Emergency telephone number

1.4.1 TRINS (Transport Information and Emergency System)

This system provides round-the-clock professional and practical assistance in managing emergency situations associated with the transport and/or storage of hazardous chemical substances in the Czech Republic. TRINS assistance can only be sought through operational and information centres of the Czech National Rescue System (HZS, IZS). This assistance is provided based on agreement between the Czech Chemical Industry Union and the National Rescue System top management (Czech Ministry of the Interior). Contact to UNIPETROL RPA, s.r.o. Litvínov – as Regional Centre No. 1 + TRINS National Coordination Centre: +420 476 709 826.

1.4.2 Toxicological Information Centre

Address: Na Bojišti 1, 120 00 Prague 2
Telephone: +420 224 919 293, +420 224 915 402
Information on health risks only – acute poisoning of humans and animals.

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SECTION 2: Hazards identification

2.1 Classification of the substance

- a) Physico-chemical properties
- | | |
|------------------|---------------------------------|
| Flammable gas: | Flam. gas. 1, H220, GHS02, Dgr |
| Pressurized gas: | Liquefied gas, H280, GHS04, Dgr |

2.2 Label elements



Hazard indication:	GHS02	GHS04
Signal words:	Danger (Dgr)	
Standard hazard phrases (H-phrases):		
	H220	Extremely flammable gas
	H280	Contains gas under pressure; may explode if heated
Precautionary statements (P-phrases):	P102; P210; P377; P381; P410+P403	
	P102	Keep out of the reach of children
	P210	Keep away from open flames and hot surfaces. – No smoking
	P377	Leaking gas fire: Do not extinguish, unless leak can be stopped safely
	P381	Remove all sources of ignition if you can do it without risk
	P410+P403	Protect from sunlight. Store in a well-ventilated place

NOTE: For the text of the standard phrases see Section 16.

2.3 Other hazards

2.3.1 PBT Information

According to the criteria in the Annex XIII to the Regulation no. 1907/2006, the product does not contain PBT or vPvB substances.

2.3.2 Other Hazardous Impacts

Gaseous LPGs are heavier than air and may accumulate in lower-lying locations. It forms an explosive mixture with air. Higher concentrations of LPG vapours may have narcotic effects, cause headache, nausea, and eye and respiratory tract irritation. The product can accumulate static electric charge.

LPGs are kept under pressure in pressure vessels. When released into a space with atmospheric pressure, they vaporize by boiling at temperatures as low as – 45°C, therefore there is a danger of frostbite in the case of contact of the liquefied gas and skin.

SECTION 3: Composition / Information on ingredients

3.1 Substances

The product contains the following hazardous substance(s):

<i>Substance (name)</i>	<i>Content, % (V/V)</i>	<i>CAS No.</i>	<i>EC No.</i>	<i>Registration No.</i>
Hydrocarbons C3 – C4; Refinery gas	>99	68476-40-4	270-681-9	01-2119486557-22-0008

3.2 Mixtures

The product is not a mixture.

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SECTION 4: First aid instructions

4.1 Description of first aid measures

4.1.1 General instructions

When handling this product, comply with requirements for health and safety at work in accordance with applicable legislation and this Material Safety Data Sheet.

If the danger of loss of consciousness exists, transport the victim in the recovery position.

4.1.2 Inhalation Hazards

Move the victim to fresh air, provide rest, do not allow the victim to walk. If breathing has stopped, apply mouth-to-mouth resuscitation. Seek medical attention.

4.1.3 Skin contact

Wash skin with water and soap, rinse, change clothes. In the case of frostbite, do not use any ointments or powders; cover the frostbite with sterile gauze and seek medical attention.

4.1.4 Contact with Eye

Flush eyes thoroughly with plenty of water and seek medical attention.

4.1.5 Ingestion

Have the victim drink water. Do not induce vomiting. Seek medical attention.

4.2 Most important symptoms and effects, both acute and delayed

Higher concentrations of LPG vapours may have narcotic effects, cause headache, nausea, and eye and respiratory tract irritation. The product can accumulate static electric charge. LPGs are kept under pressure in pressure vessels. When released into a space with atmospheric pressure, they vaporize by boiling at temperatures as low as – 45°C, therefore there is a danger of frostbite in the case of contact of the liquefied gas and skin..

4.3 Indication of any immediate medical attention and special treatment needed

In case of contact with eyes or if swallowed seek medical attention promptly

SECTION 5: Fire fighting measures

5.1 Extinguishing media

5.1.1 Suitable extinguishing media

Foam, powder, carbon dioxide.

5.1.2 Unsuitable extinguishing media

Water (only suitable for cooling).

5.2 Special hazards arising from the substance or mixture

Product vapours form an explosive mixture with air. It burns with a sooty flame in air. Carbon monoxide may be released. LPG vaporizes quickly and forms cool mists; the gas is heavier than air and may form explosive mixtures in lower locations or above water surfaces. When released into the space with atmospheric pressure, it vaporizes by boiling at temperatures as low as -45°C.

5.3 Special Protective Equipment for Fire Fighters

Fire-resistant clothing, self-contained breathing apparatus.

SECTION 6: Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

Prevent contamination of clothes and shoes, prevent skin and eye contact. To escape a contaminated area, use a

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respirator fitted with an organic vapour cartridge. Do not smoke. Remove all potential sources of ignition. Evacuate all persons who are not participating in salvage operations.

6.2 Environmental Precautions

Prevent further leakage. Keep unauthorized persons out of the area. Do not drain the product into sewers. Prevent the product from leaking into soil and/or water.

6.3 Methods and material for containment and cleaning up

Pump the product off or absorb it into a suitable porous material and dispose of it in compliance with applicable legislation on wastes.

6.4 Reference to Other Sections

See sections 8 and 13

SECTION 7: Handling and storage

7.1 Safe handling precautions

Any person handling hazardous chemical substances and chemical preparations is obliged to protect human health and the environment and observe hazard symbols, standard phrases describing specific risks and standard safe handling instructions.

7.2 Conditions for safe storage of substances and mixtures, including any incompatibilities

Store in accordance with ČSN 65 0201. The design, construction, testing and operation of any equipment with LPG are subject to ČSN 38 6462. The building must be equipped as stipulated by ČSN 75 3415. Store the product in a well-ventilated area beyond the reach of ignition sources. Electrical equipment must conform to applicable regulations. Protect from electrostatic charge. Do not smoke.

7.3 Specific final uses

Propane is used as industrial heating fluid especially for household, laboratory or industrial heating. It is also used for deasphalting and solvent refining of mineral oils.

It may only be used for such purposes and in such facility that is approved for its use. Never drain into sewers.

SECTION 8: Exposure controls / Personal protection

8.1 Exposure limits

8.1.1 According to Government Resolution no. 361/2007 Coll.

		propane
PEL	mg/m ³	900
NPK-P	mg/m ³	1,800

8.1.2 DNEL according to CSR

N/A.

8.2 Exposure Controls

General safety and hygienic measures: Do not drink, eat or smoke while handling LPGs. Before meals and drinks and after work wash your skin with soap and warm water and apply a suitable moisturizing cream.

8.2.1 Worker exposure controls

<i>Respiratory protection:</i>	Escape mask with a filter against organic gases and vapours.
<i>Eye protection:</i>	Chemical type goggles.
<i>Hand protection:</i>	Protective gloves.
<i>Skin protection:</i>	Protective clothing

8.2.2 Environmental exposure controls

See also Clauses 2.1, 6.2 and 16.1.

SECTION 9: Physical and Chemical Properties**9.1 Basic physical and chemical properties**

Appearance (at 20°C):	liquid
Colour:	colourless
Odour:	characteristic hydrocarbon odour
Density at 15°C:	500 to 530 kg/m ³
Boiling point range:	-42°C to 0°C
Relative vapour density:	approx. 2 (air=1)
Solubility in water:	negligible
Vapour pressure at 20°C:	<0.9 MPa
Flash point:	<-40°C
Explosion limits:	lower: 1.5% (V/V) upper: 11.0% (V/V)
Maximum experimental safe gap:	>0.9 mm

9.2 Other information

Pour point:	<-40°C
Ignition point:	<-40°C
Flash point:	approx. 450°C to 465°C
Critical pressure:	approx. 3.7 MPa
Heat of combustion:	approx. 50 MJ/kg

SECTION 10: Stability and reactivity**10.1 Reactivity**

The product is stable under normal use conditions.

10.2 Chemical stability

The product is stable under normal use conditions.

10.3 Possibility of Hazardous Chemical Reactions

When burning with limited air carbon monoxide can be released.

10.4 Conditions to avoid

Concentrations within explosion limits, presence of ignition sources, contact with naked flames.

10.5 Incompatible materials

Oxidants.

10.6 Hazardous Decomposition Products

None under normal conditions; incomplete burning can produce carbon monoxide and soot.

SECTION 11: Toxicological Information**11.1 Information on toxicological effects****11.1.1 Acute toxicity**

Not reported..

11.1.2 Skin causticity / irritation

Not reported..

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11.1.3 Serious Damage / Irritation to Eyes

Not reported..

11.1.4 Respiratory / skin sensitisation

Not reported..

11.1.5 Mutagenic Impacts in Elementary Cells

Not reported..

11.1.6 Carcinogenic effects

Not reported..

11.1.7 Toxicity for reproduction

Not reported..

11.1.8 STOT Single Exposure

Not reported..

11.1.9 STOT Repeated Exposure

Not reported..

11.1.10 Aspiration hazard

Not reported..

SECTION 12: Ecological information

12.1 Toxicity

Not reported.

12.2 Persistency and Degradability

Not reported.

12.3 Bio-Accumulative Potential

Not reported.

12.4 Mobility in soil

Not reported.

12.5 PBT and vPvB Assessment Results

Not reported.

12.6 Other adverse effects

Not reported.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

13.1.1 Legal regulations on wastes

The product is categorized as follows pursuant to Act No. 185/2001 Coll., on wastes, as amended, and related regulations:

Not applicable

13.1.2 Product disposal methods

Wastes and unused residues are disposed of in compliance with the applicable legislation on wastes, usually by incineration in the reserved incinerators. Dumping is inappropriate.

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13.1.3 Contaminated container disposal

LPGs are supplied in road and railway tank cars. Decontamination and disposal of such containers are governed by applicable ADR/RID provisions.

SECTION 14: Transport information

14.1 UN number

1965

14.2 UN proper shipping name

HYDROCARBON GAS, LIQUEFIED, MIXTURE, N.O.S. (C mixture – propane)

14.3 Transport hazard class

2

14.4 Packing group

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14.5 Environmental hazards

NON.

14.6 Special precaution for user

Non.

14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

N/A. Vacuum residue is usually supplied by road and railway tank cars..

14.8 Other information

Hazard No.: 23
Classification code: 2F
Labels: 2

SECTION 15: Regulatory information

15.1 Regulations relating to safety, health and environment / Specific legislation applicable to the substance / mixture

- Regulation (EC) No. 1907/2006 of the European Parliament and the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended) and related rules and regulations
- Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (CLP) (as amended) and related rules and regulations
- Act No. 111/1994 Coll., on road transport, as amended, and related regulations and provisions (ADR)
- Act No. 185/2001 Coll., on wastes, as amended, including the related regulations and provisions
- Act No. 201/2012 Coll., on air protection, as amended, and related regulations
- Act No. 254/2001 Coll., Water Act, as amended, and related regulations
- Act No. 266/1994 Coll., on railways, as amended, and related regulations and provisions (RID)
- Act No. 350/2011 Coll., Chemical Act, as amended, and related regulations
- Government Decree No. 361/2007 Coll., on occupational safety, as amended, and related regulations
- ČSN 33 0371 Explosion-proof electrical apparatus. Explosive mixtures. Classification and testing methods
- ČSN 65 0201 Flammable Liquids – Production, processing and stocking areas
- ČSN 75 3415 Protection of Water from Petroleum Products – Facilities for Petroleum Products Handling and Storage

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15.2 Chemical safety assessment

Has been performed.

SECTION 16: Other information

16.1 Other Regulatory Information

16.1.1 Act No. 201/2012 Coll., on air conservation

The product is subject to the respective provisions of Act No. 86/2002 Coll., on air conservation, as amended, including the related regulations and provisions. Pursuant to Section 2 Para n) of the aforesaid Act, the product is a volatile organic substance.

16.1.2 ČSN 65 0201 Flammable Liquids – Production, processing and stocking areas

In normal conditions the product is a gas, which is not covered by this standard. In the liquefied state, the product is classified as Class I flammability product as defined by this standard.

16.1.3 ČSN 33 0371 Non-explosive Electrical Equipment – Explosive Mixtures – Classification and Test Methods

The product is categorized in the T1 temperature class and IIA explosion group as defined by this standard.

16.2 List of the relevant H-phrases and P-phrases

16.2.1 Hazard phrases (H-phrases):

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

16.2.2 Precautionary statements (P-phrases):

P102 Keep out of the reach of children
P210 Keep away from open flames and hot surfaces. – No smoking
P377 Leaking gas fire – do not extinguish unless leak can be stopped safely
P381 Remove all sources of ignition if you can do it without risk
P410+P403 Protect from sunlight. Store in a well-ventilated place

16.3 Instructions for training

Training sessions are organized in accordance with the requirements of the Labour Code and Act No. 258/2000 Coll.

16.4 Information on changes

Change the header and footer of the document caused by mergers Czech Refinery Inc. to Unipetrol RPA Ltd.

1.3.1 Trade name and identification number - a new identity caused merger Czech Refinery Inc. to Unipetrol RPA Ltd.

1.3.3 Person responsible for BL - change of responsible person

16.5 Selected abbreviations and acronyms

PBT persistent, bioaccumulative and toxic substance
vPvB very persistent and very bioaccumulative substance
CAS registration number substance form Chemical Abstracts Service.
EINECS official number of substance from European Inventory of Existing Commercial Substances
PEL exposure limit, long time (8 h)
NPK-P maximum allowable concentration, short-term limit
DNEL Derived No Effect Level
CSR Chemical Safety Report

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16.6 Other information

Information contained in this Material Safety Data Sheet applies to the specific product only. It is based on our current knowledge and experience and may not be comprehensive. Responsibility for proper product handling in accordance with applicable legislation lies with the user.

ANNEX OF MATERIAL SAFETY DATA SHEET

EXPOSURE SCENARIOS ACCORDING TO ARTICLE 31 OF REGULATION (EC) NO 1907/2006 (REACH) OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

The Chemical Safety Report (CSR) presented by the main registrant at the product registration shows that no exposure scenarios need to be processed and annexed to the safety sheet.

Justification: Propane does not fulfill the criteria for classification as dangerous for the environment, is not carcinogenic, mutagenic or toxic for reproduction (CMR) and is not persistent, bioaccumulating and toxic (PBT) or very persistent and very bioaccumulating (vPvB). Narcotic effects have been demonstrated in propane, however these only occur at concentrations of circa 80% (i.e. 800 000 ppm or 917 857 mg/m³), which highly exceed the values of any work exposure. Thus it follows that propane is not dangerous for human health and there is no associated risk which would require the designation of suitable precautions for its control. Thus there is no need to process and assess exposure scenarios.