

PROPYLENE

Issue date: 2001-05-30

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Product name: PROPYLENE

SECTION 1. Identification of the substance and of the company

1.1 Product identifier

Trade name: **Propylene**
Name pursuant to Directive 67/548/EEC: EC 204-062-1 Propene; Propylene
Alternative names: Propene
Registration No.: **01-2119447103-50-XXXX**

1.2 Relevant identified uses of the substance and uses advised against

Propylene is used as a raw material for further processing in the chemical industry, particularly in the manufacture of plastics.

Propylene shall not be used for other purposes not specified by a relevant process documentation. The use of propylene 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.

ČESKÁ RAFINÉRSKÁ, a.s.	Company ID: 62741772
Záluží 2	Tax ID: CZ62741772
Litvínov	www.ceskarafinerska.cz
Postcode 436 70	E-mail: info@crc.cz

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. Václav Pražák	tel.:	+420 476 164 308
	E-mail:	vaclav.prazak@crc.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.

SECTION 2. Hazards identification

2.1 Classification of the substance

2.1.1 Pursuant to Regulation (EC) No 1272/2008 (CLP)

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

2.1.2 Pursuant to Council Directive 67/548/EEC (DSD)

- a) Physico-chemical properties: extremely flammable liquid, F+; R12

2.2 Label elements

2.2.1 Pursuant to Regulation (EC) No 1272/2008



Hazard indication:	GHS02	GHS04
Signal words:		Danger (Dgr)
Standard hazard phrases (H-phrases):	H220, H280	
Precautionary statements (P-phrases):	P102; P210; P377; P381; P410+P403	

2.2.2 Pursuant to Council Directive 67/548/EEC



Hazard indication:	F+
Specific risks (R-phrases):	R12
Safety phrases (S-phrases):	S2; S9; S16; S33

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 propylene is heavier than air and may accumulate in lower 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.

Propylene is 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>
Propene; Propylene	> 99	115-07-1	204-062-1	01-2119447103-50-XXXX

3.2 Mixtures

The product is not a mixture.

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

SECTION 4. First aid instructions

4.1 General instructions

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

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

4.2 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.

4.3 Skin contact

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

4.4 Contact with Eye

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

4.5 Ingestion

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

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

Product vapours form an explosive mixture with air. It burns with a sooty flame in air. Carbon monoxide may be released. Liquefied propylene 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 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 building must be equipped as stipulated by ČSN 75 3415. Keep in a well-ventilated area away from ignition sources. Electrical equipment must conform to the respective regulations. Protect from electrostatic charge. Do not smoke.

7.3 Specific final uses

Propylene is used for further processing in the chemical industry, particularly as a raw material in the manufacture of plastics.

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.

Not specified. The use of limits for propane is recommended.

		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 the product. 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 16.3.

SECTION 9. *Physical and Chemical Properties*

9.1 *Basic physical and chemical properties*

<i>Appearance (at 20°C):</i>	liquid
<i>Colour:</i>	colourless
<i>Odour:</i>	characteristic hydrocarbon odour
<i>Density at 15°C:</i>	510 to 520 kg/m ³
<i>Boiling point range:</i>	-45°C to -50°C
<i>Relative vapour density:</i>	approx 2 (air=1)
<i>Solubility in water:</i>	negligible
<i>Vapour pressure at 20°C:</i>	<1.1 MPa
<i>Flash point:</i>	<-40°C
<i>Explosion limits:</i>	<i>lower:</i> 2.0% (V/V) <i>upper:</i> 10.3% (V/V)
<i>Maximum experimental safe gap:</i>	>0.9 mm

9.2 *Other information*

<i>Pour point:</i>	<-40°C
<i>Ignition point:</i>	<-40°C
<i>Flash point:</i>	approx 455°C to 465°C
<i>Critical pressure:</i>	approx. 3.7 MPa
<i>Heat of combustion:</i>	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 Acute toxicity

N/A

11.2 Skin causticity / irritation

N/A

11.3 Serious Damage / Irritation to Eyes

N/A

11.4 Respiratory / skin sensitisation

N/A

11.5 Mutagenic Impacts in Elementary Cells

N/A

11.6 Carcinogenic effects

N/A

11.7 Toxicity for reproduction

N/A

11.8 STOT Single Exposure

N/A

11.9 STOT Repeated Exposure

N/A

11.10 Aspiration hazard

N/A

SECTION 12. Ecological Information

12.1 Toxicity

N/A

12.2 Persistency and Degradability

N/A

12.3 Bio-Accumulative Potential

N/A

12.4 Mobility in soil

N/A

12.5 PBT and vPvB Assessment Results

N/A

12.6 Other Adverse Effects

N/A

SECTION 13. Disposal considerations

13.1 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

13.2 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.

13.3 Contaminated container disposal

Propylene is supplied in road and railway car tanks. Decontamination and disposal of such containers are governed by applicable ADR/RID provisions.

SECTION 14. Transport information

The product is usually transported using railway and road tank cars.

Nomenclature and labelling in accordance with the European Agreement on Dangerous Goods (RID/ADR) (as amended):

PROPENE

Hazard No.: 23

Classification code: 2F

UN No.: 1077

Class: 2

Packing group: N/A



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
- Council Directive 67/548/EEC of 27 June 1967 on the approximation of laws, regulations and administrative provisions relating to the classification, packaging and labelling of dangerous substances (DSD) (as amended)
- Directive 1999/45/EC of the European Parliament and of the Council of 31 May 1999 concerning the approximation of the laws, regulations and administrative provisions relating to the classification, packaging and labelling of dangerous preparations (DPD) (as amended)
- Act No. 111/1994 Coll., on road transport, as amended, including the 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 75 3415 Protection of Water from Petroleum Products – Facilities for Petroleum Products Handling and Storage

15.2 Chemical safety assessment

Has been performed.

15.3 Other Regulatory Information

15.3.1 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.

15.3.2 ČSN 65 0201 Flammable Liquids – Plants and Storage Facilities

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

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

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

SECTION 16. Other information

16.1 List of the relevant R-phrases, H-phrases, S-phrases and P-phrases

16.1.1 Hazard phrases (H-phrases):

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

16.1.2 Instructions for Safe Handling (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 |

16.1.3 Standards risk phrases (R-Phrases)

- | | |
|-----|---------------------|
| R12 | Extremely flammable |
|-----|---------------------|

16.1.4 Standard safety phrases (S-Phrases)

- | | |
|-----|---|
| S2 | Keep out of the reach of children |
| S9 | Keep container in a well-ventilated place |
| S16 | Keep away from sources of ignition - No smoking |
| S33 | Take precautionary measures against static discharges |

16.2 Instructions for training

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

16.3 Information on changes

Changes in this Safety Data Sheet were made in accordance with the requirements of Regulation 1907/2006/EC (as amended) and Regulation No 1272/2008 (as amended), taking into account new information on the hazards of the substance gained during the registration procedure. The changes effected mainly concern formal aspects of the document.

16.4 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.