



Heating and automotive fuel PB (butane rich)

Safety Data Sheet

according to Regulation (EU) 2015/830

Date of issue: 9/25/2007

Revision date: 5/30/2017

Version: 2.0

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

1.1. Product identifier

Chemical type : Mixture
Trade name : Heating and automotive fuel PB (butane rich)
Product code : MOL_0101_006_N_MOL_0102_031_MOL_0101_014_MOL_0101_003

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

1.2.1. Relevant identified uses

Main use category : Industrial use, Consumer use, Professional use
Industrial/Professional use spec : Manufacture of substance
Distribution of substance
Use as a fuel
Blowing agents
Formulation & (re)packing of substances and mixtures
Polymer production
Polymer processing
Functional Fluids
Use as a propellant

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Manufacturer: MOL Hungarian Oil and Gas Public Limited Company, Refining

Address: 2443 Százhalombatta, POB. 1.

Telephone: +36-23-552-511,

Fax: +36-23-553-122

Distributor: MOL Hungarian Oil and Gas Public Limited Company

Address: 1117 Budapest, Október huszonharmadika utca 18.

Telephone, fax.: +36-1-209-0000

The competent person responsible for Safety Data Sheet: sds@mol.hu

1.4. Emergency telephone number

Country	Organisation/Company	Address	Emergency number	Comment
United Kingdom	National Poisons Information Service (Belfast Centre) Royal Victoria Hospital	Grosvenor Road BT12 6BA Belfast	0344 892 0111	
United Kingdom	National Poisons Information Service (Birmingham Centre) City Hospital	Dudley Road B18 7QH Birmingham	0344 892 0111	
United Kingdom	National Poisons Information Service (Cardiff Centre) Gwenwyn Ward, Llandough Hospital	Penarth CF64 2XX Cardiff	0344 892 0111	
United Kingdom	National Poisons Information Service Edinburgh Royal Infirmary of Edinburgh	Little France Crescent EH16 4SA Edinburgh	0344 892 0111	
United Kingdom	Guy's & St Thomas' Poisons Unit Medical Toxicology Unit, Guy's & St Thomas' Hospital Trust	Avonley Road SE14 5ER London	0870 243 2241	
United Kingdom	National Poisons Information Service (Newcastle Centre) Regional Drugs and Therapeutics Centre, Wolfson Unit	Claremont Place Newcastle-upon-Tyne NE1 4LP Newcastle	0344 892 0111	

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 : Liquefied gas H280

Full text of hazard classes and H-statements : see section 16

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2.2. Label elements

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

Hazard pictograms (CLP) :



Signal word (CLP) :

Danger

Hazard statements (CLP) :

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

Precautionary statements (CLP) :

P102 - Keep out of reach of children
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 - Eliminate all ignition sources if safe to do so
P410+P403 - Protect from sunlight. Store in a well-ventilated place

2.3. Other hazards

Other hazards not contributing to the classification : Can form explosive mixture with air.

This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII

This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
butane (Component)	(CAS-No.) 106-97-8 (EC-No.) 203-448-7 (EC Index-No.) 601-004-00-0 (REACH-no) 01-2119474691-32	0 - 90	Flam. Gas 1, H220 Press. Gas (Liq.), H280
isobutane (Component)	(CAS-No.) 75-28-5 (EC-No.) 200-857-2 (EC Index-No.) 601-004-00-0 (REACH-no) 01-2119485395-27-0019	0 - 90	Flam. Gas 1, H220 Press. Gas (Liq.), H280
propane (Component)	(CAS-No.) 74-98-6 (EC-No.) 200-827-9 (EC Index-No.) 601-003-00-5 (REACH-no) 01-2119486944-21	0 - 60	Flam. Gas 1, H220 Press. Gas (Liq.), H280
1,3-butadiene (Classification marker)	(CAS-No.) 106-99-0 (EC-No.) 203-450-8 (EC Index-No.) 601-013-00-X (REACH-no) 01-2119471988-16	< 0.1	Flam. Gas 1, H220 Press. Gas (Liq.), H280 Muta. 1B, H340 Carc. 1A, H350

Full text of H-statements: see section 16

Note K : The classification as a carcinogen or mutagen need not apply if it can be shown that the substance contains less than 0,1 % w/w 1,3-butadiene (EINECS No 203-450-8). If the substance is not classified as a carcinogen or mutagen, at least the precautionary statements (P102-)P210-P403 (Table 3.1) or the S-phrases (2-)9-16 (Table 3.2) should apply. This note applies only to certain complex oil-derived substances in Part 3.

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general :

Extremely flammable liquefied gas. An asphyxiant at high concentrations, oxygen depletion can be fatal. Before attempting to rescue casualties, isolate area from all potential sources of ignition including disconnecting electrical supply. Ensure adequate ventilation and check that a safe, breathable atmosphere is present before entry into confined spaces. Use approved positive pressure air supplied breathing apparatus with a full facepiece. Show the material safety data sheet or label if possible. Do not give anything by mouth to an unconscious person.

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First-aid measures after inhalation	: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If casualty is unconscious and not breathing: Ensure that there is no obstruction to breathing and give artificial respiration by trained personnel. Immediately call a POISON CENTER or doctor/physician. If necessary, give external cardiac massage and obtain medical advice. Breathing Allow the victim to rest. Obtain medical assistance if breathing remains difficult. Rescuers must wear breathing apparatus, belt and safety rope, and follow rescue procedures. Immediately begin artificial respiration if breathing has ceased.
First-aid measures after skin contact	: Contact with product in liquid form may cause frostbite. Do not remove clothing that adheres due to freezing. Immediately flush affected area with plenty of water. If there are signs of frostbite, (blanching or redness of skin or burning or tingling sensation), do not rub, massage or compress the affected area. Get medical advice/attention.
First-aid measures after eye contact	: Irrigate eyes with copious amounts of water for at least 10-15 min, holding eyelids apart to ensure thorough rinsing. Remove contact lenses, if present and easy to do so. Continue rinsing. If there are signs of frostbite, pain, swelling, lachrimation or photophobia persists, or in case of damage from high pressure jets, the patient should be seen in a specialist health care facility.
First-aid measures after ingestion	: Not considered a likely route of exposure – frostbite to the lips and mouth may occur if in contact with the liquid. Immediately call a POISON CENTER or doctor/physician.

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

Symptoms/effects after inhalation	: Inhalation of vapours may cause headache, nausea, vomiting and an altered state of consciousness. Exposure to high concentrations may cause asphyxiation as a consequence of oxygen deficiency.
Symptoms/effects after skin contact	: Contact with product in liquid form may cause frostbite.
Symptoms/effects after eye contact	: Contact with product in liquid form may cause frostbite.
Symptoms/effects after ingestion	: Contact with product in liquid form may cause frostbite.

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

Treat symptomatically. In the event of contact with product in liquid form treat for frostbite.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	: Foam (trained personnel only). Water fog (trained personnel only). Carbon dioxide. Other inert gases (subject to regulations). Sand or earth. Dry powder.
Unsuitable extinguishing media	: Do not use direct water jets on the burning product. Simultaneous use of foam and water on the same surface is to be avoided as water destroys the foam.

5.2. Special hazards arising from the substance or mixture

Fire hazard	: Extremely flammable gas. May build up electrostatic charges: risk of ignition.
Explosion hazard	: Vapours may form explosive mixture with air. They may be ignited by heat, sparks, static electricity or flames. Contains gas under pressure; may explode if heated.
Hazardous decomposition products in case of fire	: Carbon dioxide. Carbon monoxide. Toxic fumes may be released.
Hungarian fire hazard	

5.3. Advice for firefighters

Precautionary measures fire	: Keep container closed when not in use. Eliminate all ignition sources if safe to do so. Fight fire remotely due to the risk of explosion.
Firefighting instructions	: Evacuate area. Contain the extinguishing fluids by bunding.
Protection during firefighting	: In case of a large fire or in confined or poorly ventilated spaces, wear full fire resistant protective clothing and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
Other information	: Incomplete combustion is likely to give rise to a complex mixture of airborne solid and liquid particulates, gases, including carbon monoxide. High temperature decomposition products are harmful by inhalation.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures	: Evacuate area. Stop engines and no smoking.
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6.1.1. For non-emergency personnel

Protective equipment	: a Self Contained Breathing Apparatus (SCBA) can be used according to the extent of spill and predictable amount of exposure.
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Emergency procedures : Keep upwind. Stop or contain leak at the source, if safe to do so. Avoid direct contact with released material. Keep non-involved personnel away from the area of spillage. Alert emergency personnel. A combustible gas detector can be used to check for flammable gas or vapors. If required, notify relevant authorities according to all applicable regulations. Eliminate all ignition sources if safe to do so (e.g. electricity, sparks, fires, flares). In case of large spillages, alert occupants in downwind areas. When inside buildings or confined spaces, ensure adequate ventilation. Spillages of product generate large volumes of extremely flammable gas which is heavier than air and will accumulate in low areas.

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

Prevent product from entering sewers, rivers or other bodies of water, or underground spaces (tunnels, cellars, etc.). Spillages of liquid product in the water will likely result in a quick and complete vaporization of the product. Ensure adequate ventilation of confined spaces, especially underground ones. Spillages of product generate large volumes of extremely flammable gas which is heavier than air and will accumulate in low areas. Stop leak if safe to do so.

6.3. Methods and material for containment and cleaning up

For containment : Stop or contain leak at the source, if safe to do so. Leave the product to evaporate. Ensure adequate ventilation.

6.4. Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection". For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed : Flammable gas. They may form explosive mixtures with air.

Precautions for safe handling : Ensure that all relevant regulations regarding handling and storage facilities of flammable products are followed. Keep away from heat/sparks/open flames/hot surfaces. Do not eat, drink or smoke when using this product. Prevent the build-up of electrostatic charge. Use only non-sparking tools. Do not weld, solder, drill, cut or perform similar operations on or near containers. Avoid contact with skin, eyes and clothing. A specific assessment of inhalation risks from the presence of H₂S in tank headspaces, confined spaces, product residue, tank waste and waste water, and unintentional releases must be made to help determine controls appropriate to local circumstances. Consider technical advances and process upgrades (including automation) for the elimination of releases. Use a check valve or other protective device to prevent reverse flow.

Hygiene measures : Do not eat, drink or smoke when using this product.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Before entering storage tanks and commencing any operation in a confined area, check the atmosphere for oxygen content, hydrogen sulphide (H₂S) and flammability. Empty containers may contain flammable product residues. Do not weld, solder, drill, cut or incinerate empty containers, unless they have been properly cleaned. If sulphur compounds are suspected to be present in the product, check the atmosphere for H₂S content. For maintenance work or conservation, emptied tanks should be purged, and blanketed with inert gas (i.e. nitrogen).

Storage conditions : Cylinders should be secured vertical - and only transported in a secure position in a well ventilated vehicle or hand truck. To stored only in supplied cylinders or approved vessels. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Cylinders which have been are opened must be carefully resealed and kept upright. Store in a well-ventilated place. Keep cool.

Incompatible products : Oxidizing agent.

Incompatible materials : Sources of ignition. Heat sources. Direct sunlight.

7.3. Specific end use(s)

Site documentation to support safe handling arrangements including the selection of engineering, administrative and personal protective equipment controls in accordance with risk-based management systems is available at each manufacturing site.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Exposure controls

Appropriate engineering controls : Provide local exhaust or general room ventilation. Do not enter empty storage tanks until measurements of available oxygen have been carried out.

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Personal protective equipment	: Gloves. EN 374. In case of splash hazard: safety glasses. EN 166. Full protective flameproof clothing.
Materials for protective clothing	: Protective clothing. Clothing to protect against heat and flame (EN 11612)
Hand protection	: Wear chemically resistant gloves (tested to EN374) in combination with specific activity training. Gloves must be periodically inspected and changed in case of wear, perforations or contaminations.
Eye protection	: If splashing is likely, full head and face protection (protective shield and/or safety goggles) should be used.
Skin and body protection	: For loading/unloading operations: wear safety helmet with integrated full face visor and neck protection. normal antistatic working clothes are usually adequate
Respiratory protection	: Self-contained open-circuit compressed air breathing apparatus incorporating a hood for escape (EN 1146). Change filter cartridge on respirator daily



Thermal hazard protection	: None in normal conditions.
Environmental exposure controls	: Use vapour recovery units when necessary. Store finished products in closed containers (e.g. bulk tanks, drums, cans). Carefully handle the substance to minimise releases.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Gas
Physical state (transport)	: Liquid
Colour	: Colourless.
Odour	: characteristic.
Melting point	: -187.6 - -138.3 °C
Boiling point	: -161.48 - -0.5 °C
Flash point	: -104 - -60 °C
Explosive limits (vol %)	: 5 - 15 vol % (literature data)
Vapour pressure	: <= 2100 kPa 70°C
Density	: >= 0.485 g/cm ³ 50°C
Solubility in water	: 24.4 - 60.4 mg/l
Auto-ignition temperature	: 287 - 537 °C

9.2. Other information

Gas group	: Press. Gas (Liq.)
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SECTION 10: Stability and reactivity

10.1. Reactivity

This substance is stable under all ordinary circumstances at ambient temperatures, and if released into the environment.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Contact with strong oxidizers (peroxides, chromates, etc.) may cause a fire hazard.

10.4. Conditions to avoid

They may be ignited by heat, sparks, static electricity or flames.

10.5. Incompatible materials

A mixture with nitrates or other strong oxidisers (e.g. chlorates, perchlorates, liquid oxygen) may create an explosive mass.

10.6. Hazardous decomposition products

No decomposition if stored normally.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity	: Not classified
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propane (74-98-6)	
LC50 inhalation rat (mg/l)	1443 mg/l literature data
butane (106-97-8)	
LC50 inhalation rat (mg/l)	658 mg/l literature data
isobutane (75-28-5)	
LC50 inhalation rat (mg/l)	974 mg/l (mouse), literature data
Skin corrosion/irritation	: Not classified
Serious eye damage/irritation	: Not classified
Respiratory or skin sensitisation:	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
STOT-repeated exposure	: Not classified
Aspiration hazard	: Not classified

SECTION 12: Ecological information

12.1. Toxicity

propane (74-98-6)	
LC50 fish 1	49.47 mg/l literature data
LC50 other aquatic organisms 1	27.14 mg/l literature data
EC50 72h algae (1)	11.89 mg/l literature data
butane (106-97-8)	
LC50 fish 1	24.11 mg/l literature data
LC50 other aquatic organisms 1	14.22 mg/l literature data
EC50 96h algae (1)	7.71 mg/l literature data
isobutane (75-28-5)	
LC50 fish 1	27.98 mg/l literature data
LC50 other aquatic organisms 1	16.33 mg/l literature data
EC50 96h algae (1)	8.57 mg/l literature data

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

propane (74-98-6)	
Log Kow	1.09 - 2.8 literature data
butane (106-97-8)	
Log Kow	1.09 - 2.8 literature data
isobutane (75-28-5)	
Log Kow	1.09 - 2.8 literature data

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

Heating and automotive fuel PB (butane rich)	
This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII	
This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII	

12.6. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional legislation (waste) : 2012. évi CLXXXV. törvény a hulladékról. DIRECTIVE 2008/98/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 19 November 2008 on waste and repealing certain Directives.

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Sewage disposal recommendations	: Not applicable as there is no release to wastewater. Soil emission controls are not applicable as there is no direct release to soil.
Waste disposal recommendations	: Clear up spills immediately and dispose of waste safely. Dispose of waste and used sacks/containers according to local regulations.
Additional information	: Handle empty containers with care because residual vapours are flammable.
Ecology - waste materials	: Hazardous waste.
EWC (EURAL) code	: 16 05 04* - gases in pressure containers (including halons) containing dangerous substances

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

ADR	RID	ADN	IMDG	IATA
14.1. UN number				
1965	1965	1965	1965	1965
14.2. UN proper shipping name				
HYDROCARBON GAS MIXTURE, LIQUEFIED, N.O.S. (A1 MIXTURE)	HYDROCARBON GAS MIXTURE, LIQUEFIED, N.O.S. (A1 MIXTURE)	HYDROCARBON GAS MIXTURE, LIQUEFIED, N.O.S. (A1 MIXTURE)	HYDROCARBON GAS MIXTURE, LIQUEFIED, N.O.S. (A1 MIXTURE)	Hydrocarbon gas mixture, liquefied, n.o.s. (A1 MIXTURE)
14.3. Transport hazard class(es)				
2.1 	2.1 (13)  	2.1	2.1	2.1 
14.4. Packing group				
Not applicable			Not applicable	
14.5. Environmental hazards				
Dangerous for the environment : No	Dangerous for the environment : No	Dangerous for the environment : No	Dangerous for the environment : No Marine pollutant : No	Dangerous for the environment : No
14.6. Special precautions for user				
23	23		EmS-No. (Fire) F-D EmS-No. (Spillage) S-U	
No supplementary information 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

15.1.1. EU-Regulations

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006. 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, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Contains no REACH substances with Annex XVII restrictions

Contains no substance on the REACH candidate list

Contains no REACH Annex XIV substances

15.1.2. National regulations

15.2. Chemical safety assessment

A chemical safety assessment has been carried out

SECTION 16: Other information

Indication of changes:

1.-16.	All Sections	updated	All Sections have been updated
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Abbreviations and acronyms:

ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC50	Median effective concentration
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
OECD	Organisation for Economic Co-operation and Development
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
STP	Sewage treatment plant
TLM	Median Tolerance Limit
vPvB	Very Persistent and Very Bioaccumulative

Data sources : 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, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006. <http://echa.europa.eu/>. CONCAWE registration dossier. Data arise from reference works and literature. Data relies on practical experience.

Training advice : Normal use of this product shall imply use in accordance with the instructions on the packaging.

Classification for mixtures and used evaluation method according to regulation (EC) 1272/2008 (CLP)

Flammable gases, Category 1 H220

Gases under pressure : Liquefied gas H280

Full text of H- and EUH-statements:

Carc. 1A	Carcinogenicity, Category 1A
Flam. Gas 1	Flammable gases, Category 1
Muta. 1B	Germ cell mutagenicity, Category 1B
Press. Gas (Liq.)	Gases under pressure : Liquefied gas
H220	Extremely flammable gas
H280	Contains gas under pressure; may explode if heated
H340	May cause genetic defects
H350	May cause cancer

SDS EU (REACH Annex II) MOL

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product