Propane-Butane - LPG

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878

Date of issue: 28/02/1994 Version: 10.0

Revision date: 12/2022

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

1.1. Product identifier

Chemical type : Substance

Name : Propane-Butane - LPG

Trade name : Propane-Butane – LPG (LPG Class C, Auto Gas ECO +, Auto Gas)

Product code : 19900006, 19900130

Local code : 19900006, 19900130

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,Professional use

Industrial/Professional use spec : Manufacture of substance
Distribution of substance
Use as a fuel
Use in laboratories
Formulation & (re)packing of substances and mixtures
Intermediate
Polymer processing
Functional Fluids
Used in closed systems

Function or use category : Fuels, Intermediates, Laboratory chemicals

1.2.2. Uses advised against

No relevant data available

1.3. Details of the supplier of the safety data sheet

SLOVNAFT, a.s.
Vlčie hrdlo 1
824 12 Bratislava - Slovakia
T +421-(0)2/4055-1111 - F +421-(0)2/5859-9759
slovnaftreach@slovnaft.sk - www.slovnaft.sk

1.4. Emergency telephone number

Emergency number : Podnikový dispečing 1: ++0421(0)2/4055 3344
Podnikový dispečing 2: ++0421(0)2/4055 2244
fax: ++0421(0)2/4055 8047
E-mail: podnikovydispecing1@slovnaft.sk, podnikovydispecing2@slovnaft.sk

Country	Organisation/Company	Address	Emergency number
HUNGARY	Országos Kémiai Biztonsági Intézet (National Institute of Chemical Safety) Egészségügyi Toxikológiai Tájékoztató Szolgálat (Health Toxicological Information Service)	1437 Budapest PO Box 839 1097 Budapest, Nagyvárad tér 2	+36-80-20-11-99
SLOVAKIA	Národné toxikologické informačné centrum FN s poliklinikou University Hospital Bratislava	Limbová 5 833 05 Bratislava	+421 2 54 77 4 166
HUNGARY	Vegyipari Riasztási és Információs Központ (VERIK) FER TŰZOLTÓSÁG ÉS SZOLGÁLTATÓ KFT. (0-24 órás)	OLAJMUNKÁS ÚT. 2. 2433 Százhalombatta	+36-23-551-909
United Kingdom	National Poisons Information Service (Belfast Centre) Royal Victoria Hospital	Grosvenor Road BT12 6BA Belfast	0844 892 0111 (UK only, Monday to Friday, 08.00 to 18.00 hours)
United Kingdom	National Poisons Information Service (Birmingham Centre) City Hospital, Guy's & St Thomas' Hospital Trust	Dudley Road B18 7QH Birmingham	0844 892 0111 (UK only, Monday to Friday, 08.00 to 18.00 hours)
United Kingdom	National Poisons Information Service (Cardiff Centre) Gwenwyn Ward, Wolfson Unit	Penarth CF64 2XX Cardiff	0844 892 0111 (UK only, Monday to Friday, 08.00 to 18.00 hours)
United Kingdom	NPIS Edinburgh (Scottish Poisons Information Bureau) Royal Infirmary of Edinburgh, Centre Hospitalier Universitaire Bab el Oued	51 Little France Crescent EH16 4SA Edinburgh	0844 892 0111 (UK only, Monday to Friday, 08.00 to 18.00 hours)
United Kingdom	Guy's & St Thomas' Poisons Unit Medical Toxicology Unit, Centre Hospitalier Universitaire de Constantine	Avonley Road SE14 5ER London	0870 243 2241
United Kingdom	National Poisons Information Service (Newcastle Centre) Regional Drugs and Therapeutics Centre	Claremont Place Newcastle-upon-Tyne NE1 4LP Newcastle	0844 892 0111 (UK only, Monday to Friday, 08.00 to 18.00 hours)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Flam. Gas 1 H220

Press. Gas

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

2.1.2. Adverse physicochemical, human health and environmental effects

No relevant data available

2.2. Label elements

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

Hazard pictograms (CLP) :

GHS02 GHS04

Signal word (CLP) : Danger

Hazard statements (CLP) : H220 - Extremely flammable gas

Precautionary statements (CLP) : P210 - Keep away from heat/sparks/open flames/hot surfaces. - 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
P403 - Store in a well-ventilated place

2.3. Other hazards

Endocrine disruptors: not yet evaluated

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier		% (w/w) Concentration (range)	Classification according to Regulation (EC) No 1272/2008 [CLP/GHS]
	CAS No	EC no		
propane	74-98-6	200-827-9	< 85	Flam. Gas 1, H220 Press. Gas
Hydrocarbons, C4;	87741-01-3	289-339-5	< 60	Carc. 1B, H350 Flam. Gas 1, H220 Press. Gas Muta. 1B, H340
butane	106-97-8	203-448-7	< 50	Flam. Gas 1, H220
Isobutane	75-28-5	200-857-2	< 50	Flam. Gas 1, H220

Full text of H- and EUH-phrases: see section 16

ECTION 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

Contact with product in liquid form may cause frostbite

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

Take care to self-protect by avoiding becoming contaminated

Use approved positive pressure air supplied breathing apparatus with a full facepiece
Move contaminated patient(s) out of the dangerous area
Seek medical assistance -
show the material safety data sheet or label if possible.

First-aid measures after inhalation : Remove casualty to fresh air as quickly as possible
Do not leave the victim unattended
Keep warm and at rest
Place in the recovery position
Seek immediate medical attention
If breathing is difficult, give oxygen if possible, or assisted ventilation
In the event of cardiac arrest, (no pulse), apply cardiopulmonary resuscitation.

First-aid measures after skin contact : Do not remove clothing that adheres due to freezing
Immediately flush affected area with plenty of water
continue for at least 15 minutes
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
Send the casualty immediately to hospital.

First-aid measures after eye contact : Remove contact lenses, if present and easy to do so
Irrigate eyes with copious amounts of water for at least 10-15 min, holding eyelids apart to ensure thorough rinsing
If there are signs of frostbite, pain, swelling, lachrymation 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.

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

Symptoms/injuries after inhalation : Exposure to high concentrations may cause asphyxiation as a consequence of oxygen deficiency.

Symptoms/injuries after skin contact : Contact with product in liquid form may cause frostbite.

Symptoms/injuries after eye contact : Contact with product in liquid form may cause frostbite.

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

A simple asphyxiant gas at normal temperatures and pressures.

There is no specific antidote.

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

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Water fog (trained personnel only). Dry chemical powder. Carbon dioxide. Sand or earth.

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 : Highly flammable.

Explosion hazard : DIRECT EXPLOSION HAZARD.

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

General measures : Spark- and explosionproof appliances and lighting equipment. Stop engines and no smoking. Exposure to fire/heat: consider evacuation.

5.3. Advice for firefighters

Firefighting instructions : Though other forms of exthinguishing agent may be used, they are considered less effective for deep seated and smouldering fires.

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 : unidentified organic and inorganic compounds. Respiratory problems or nausea by excessive exposure to hot product fumes. Incomplete combustion is likely to give rise to a complex mixture of airborne solid and liquid particulates, gases, including carbon monoxide.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

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.

Emergency procedures : Spillages of product generate large volumes of extremely flammable gas which is heavier than air and will accumulate in low areas

When the presence of dangerous amounts of H_2S around the spilled product is suspected or proved, additional or special actions may be warranted, including access restrictions, use of special protection equipment, procedures and personnel training

Stop or contain leak at the source, if safe to do so

Avoid direct contact with released material

Stay upwind

Keep non-involved personnel away from the area of spillage. Alert emergency personnel

Enter area only if strictly necessary

A combustible gas detector can be used to check for flammable gas or vapours

Eliminate all ignition sources if safe to do so (e.g. electricity, sparks, fires, flares

If required, notify relevant authorities according to all applicable regulations.

6.1.2. For emergency responders

Emergency procedures : recommended measures are based on the most likely spillage scenarios for this material.

6.2. Environmental precautions

Stop leak if safe to do so

Spillages of product generate large volumes of extremely flammable gas which is heavier than air and will accumulate in low areas

Ensure adequate ventilation of confined spaces, especially underground ones

Spillages of liquid product in the water will likely result in a quick and complete vaporization of the product

Isolate the area and prevent fire/explosion hazard for ships and other structures, taking into account wind direction and speed, until the product is completely dispersed

prevent product from entering sewers, rivers or other bodies of water.

6.3. Methods and material for containment and cleaning up

For containment : Local regulations may also prescribe or limit actions to be taken

This situation is especially relevant for those operations which involve direct exposure to the vapours in the tank

For this reason, local experts should be consulted when necessary.

Methods for cleaning up : If possible, control the spreading of the spillage, and collect the solid product by skimming or other suitable mechanical means.

Other information : Use only non-sparking tools.

6.4. Reference to other sections

Contaminated material should be disposed of as hazardous waste according to chapter 13

See also item 8 (personal protective equipment) and 13 (disposal).

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Risk of explosive mixtures of vapour and air. A specific assessment of inhalation risks from the presence of H_2S 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. Clean/flush equipment, where possible, prior to maintenance. Consider the need for risk based health surveillance. Regularly inspect, test and maintain all control measures. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Avoid all sources of ignition, oxidising agents, chlorine and hydrogen chloride or hydrogen fluoride. Take precautionary measures against static electricity. Cleaning, inspection and maintenance of internal structure of storage tanks must be done only by properly equipped and qualified personnel as defined by national, local or company regulations. Handle empty containers with care; vapour residue may be flammable. Do not weld, solder, drill, cut or perform similar operations on or near containers. Dispose of rinse water in accordance with local and national regulations. The vapour is heavier than air. Beware of accumulation in pits and confined spaces. Use piping and equipment designed to withstand the pressures to be encountered. Use a check valve or other protective device to prevent reverse flow. Ensure that all relevant regulations regarding handling and storage facilities of flammable products are followed.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Do not eat, drink or smoke when using this product. For maintenance work or conservation, emptied tanks should be purged, and blanketed with inert gas (i.e. nitrogen).

Storage conditions : To stored only in supplied cylinders or approved vessels. Cylinders should be secured vertical - and only transported in a secure position in a well ventilated vehicle or hand truck. Cylinders which have been are opened must be carefully resealed and kept upright.

Storage area : Store in a designated cool and well-ventilated place.

7.3. Specific end use(s)

No relevant data available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No relevant data available

DNEL : DNEL canot be derived due to absence of adverse effect relevant to humans

PNEC : not applicable

8.2. Exposure controls

Appropriate engineering controls : Do not enter empty storage tanks until measurements of available oxygen have been carried out.

Personal protective equipment : Gloves. Protective goggles.

Materials for protective clothing : GIVE EXCELLENT RESISTANCE:

Hand protection : Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.

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, if necessary integrated full face visor. normal antistatic working clothes are usually adequate. Wear suitable coveralls to prevent exposure to the skin.

Respiratory protection : Respirable dust.

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.

Consumer exposure controls : This substance is handled under Strictly Controlled Conditions in accordance with REACH regulation Article 17(3) for on-site isolated intermediates. In case the substance is transported to other sites for further processing, the substance should be handled at these sites under the Strictly Controlled Conditions as specified in REACH regulation Article 18(4). 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. Written confirmation of application of Strictly Controlled Conditions has been received from every affected Distributor and Downstream Processor/User of the Registrant's intermediate.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance : Gas, dissolved in a liquid under pressure.

Physical state : Gas

Colour : Colourless.

Odour : ethylmerkaptane

Boiling point : - 42 °C

Explosive limits (vol %) : 1.8 - 9.5 vol %

Density : 510 - 570 kg/m³ liquid state at 15°C

Log Pow : 2.8

Auto-ignition temperature : 450 °C

9.2. Other information

Gas group : Liquefied gas

Any other additional information about the quality of the product will be indicated on the test report.

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

Combustion (incomplete) will likely generate oxides of carbon, sulphur and nitrogen, as well as additional undetermined organic compounds of the same elements.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

Propane-Butane - LPG	
LC50 inhalation rat (mg/l)	658 - 1443 ml/m³ for butane, for propane
LC50 inhalation rat (ppm)	800000 ppm for propane

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

Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified

SECTION 12: Ecological information

12.1. Toxicity

Propane-Butane - LPG	
LC50 fish 1	24.11 - 49.9 mg/l for butane, for propane
LC50 other aquatic organisms 1	7.71 - 27.14 mg/l for butane, for propane
EC50 other aquatic organisms 1	11.89 - 14.22 mg/l for propane, for butane

12.2. Persistence and degradability

Propane-Butane - LPG	
Persistence and degradability	Easily biodegradable (concerning to the criteria of the OECD).

12.3. Bioaccumulative potential

Propane-Butane - LPG	
Log Pow	2.8
Bioaccumulative potential	Based on the n-octanol/water partition coefficient accumulation in organisms is not expected.

12.4. Mobility in soil

No relevant data available

12.5. Results of PBT and vPvB assessment

Propane-Butane - LPG	
Results of PBT assessment	LPG is not considered PBT or vPvB

12.6. Other adverse effects

No relevant data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

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

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. Wastewater emission controls are not applicable as there is no direct release to wastewater. Dispose of waste or used sacks/containers according to local regulations.

Ecology - waste materials : No special regulations.

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.	HYDROCARBON GAS MIXTURE, LIQUEFIED, N.O.S.	HYDROCARBON GAS MIXTURE, LIQUEFIED, N.O.S.	HYDROCARBON GAS MIXTURE, LIQUEFIED, N.O.S.	HYDROCARBON GAS MIXTURE, LIQUEFIED, N.O.S.
Transport document description				
UN 1965 HYDROCARBON GAS MIXTURE, LIQUEFIED, N.O.S. (MIXTURE C), 2.1, (B/D)	UN 1965 HYDROCARBON GAS MIXTURE, LIQUEFIED, N.O.S., (MIXTURE C), 2.1	UN 1965 HYDROCARBON GAS MIXTURE, LIQUEFIED, N.O.S. (MIXTURE C), 2.1	UN 1965 HYDROCARBON GAS MIXTURE, LIQUEFIED, N.O.S. (MIXTURE C), 2.1	UN 1965 HYDROCARBON GAS MIXTURE, LIQUEFIED, N.O.S. (MIXTURE C), 2.1
14.3. Transport hazard class(es)				
2.1 	2.1 	2.1	2.1	2.1 
14.4. Packing group				
Not applicable	Not applicable	Not applicable	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. Classification code :				
2F	2F	2F		
14.7. Hazard identification number (Kemler No.)				
23	23			
14.8. Additional information				
Tunnel restriction code (ADR) : B/D		Number of blue cones/lights (ADN) : 1	EmS-No. (Fire) : F-D EmS-No. (Spillage) : S-U	PCA packing instructions (IATA) : Forbidden CAO packing instructions (IATA) : 200
No supplementary information available				

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

The following restrictions are applicable according to Annex XVII of the REACH Regulation (EC) No 1907/2006:

40. Substances classified as flammable gases category 1 or 2, flammable liquids categories 1, 2 or 3, flammable solids category 1 or 2, substances and mixtures which, in contact with water, emit flammable gases, category 1, 2 or 3, pyrophoric liquids category 1 or pyrophoric solids category 1, regardless of whether they appear in Part 3 of Annex VI to Regulation (EC) No 1272/2008 or not.	Propane-Butane - LPG - propane - butane - Isobutane - Hydrocarbons, C4;

15.1.2. National regulations

Regional legislation : 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), REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), COMMISSION REGULATION (EU) No 605/2014 of 5 June 2014 amending, for the purposes of introducing hazard and precautionary statements in the Croatian language and its adaptation to technical and scientific progress, Regulation (EC) No 1272/2008 of the European Parliament and of the Council on classification, labelling and packaging of substances and mixtures, COMMISSION REGULATION (EU) 2015/830 of 28 May 2015, amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

15.2. Chemical safety assessment

Chemical Safety Assessment : For this substance a chemical safety assessment has been carried out

SECTION 16: Other information

SDS changed items : Added new product code

Data sources : CONCAWE registration dossier.

Training advice : Before handling, storing or using the present substance for the first time, employees must be informed.

Full text of H- and EUH-phrases::

Carc. 1B	Carcinogenicity, Category 1B
Flam. Gas 1	Flammable gases, Category 1
Muta. 1B	Germ cell mutagenicity, Category 1B
Press. Gas	Gases under pressure
H220	Extremely flammable gas
H340	May cause genetic defects
H350	May cause cancer

Precautionary statements (CLP):

P210	Keep away from heat/sparks/open flames/hot surfaces. - 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
P403	Store in a well-ventilated place

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