

Article 47/1602
Butane/Propane 223 g

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Liquefied petroleum gases, usually referred to with the acronym LPG, are gaseous hydrocarbons. They have several uses; the most common ones are: fuel for home and industrial use, fuel for internal combustion engines, petrochemicals, propellants, expandants, refrigerants.



Name of the product : LIQUEFIED PETROLEUM GAS *

Commercial names or synonyms : MIX A, A01, A02, A0, A1, B1, B2, B and C **

CAS no. : 68476-85-7

CEE no. : 270-704-2

EINECS no. : 649-202-00-6

ONU no. : 1057 – lighter refills

KEMLER no. : 23

Notes:

*- In the EINECS and ELINCS several substances are identified as “petroleum gases”, differing according to their origin. Their properties and features are usually analogous and are thus subject to the same classification and labelling requirements. The identification of the product and the selection of the most suitable classification is up to the producer/importer.

** -For the above mixes, the following commercial names are allowed for the designation of the item:

Butane for Mixes A, A01,A02 and A0

Propane for Mix C

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

LPGs have several uses; the most common ones are:

fuel for home, industrial, agricultural use, fuel for internal combustion engines, petrochemicals, propellants, expandants, refrigerants.

1.3 Details of the supplier of the safety data sheet

Responsible for commercial distribution PRODONT-HOLLIGER

Full address: La Marnasse 63880 OLLIERGUES (FRANCE)

EMAIL : info@prodont-holliger.fr

1.4 Emergency telephone number: +33 04 73 95 56 42 (available 8 AM to 17 AM)

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

2.1.1 Classification according to Regulation (EC) No1272/2008 (CLP):

It is an extremely flammable liquefied gas

Classification resulting from application Regulation 1272/2008:

Class code for hazard category

PRESS. GAS

FLAM. GAS 1

CARC. 1B

MUTA. 1B

CAUTION

the classification Carc 1B and Muta. 1B are not required, according to Note K for substances that contain less than 0.1% of 1.3-butadiene weight /weight.

If the substance is not classified as a carcinogen or mutagen, at least include safety advice (P102-)P210-P403.

As a result of the above, the following is only the details of the carcinogenic and mutagenic substances not classified.

Hazards indication code:

H220

H220: Extremely flammable gas

H280: Contains gas under pressure can explode if heated

P102: Keep out of reach of children

P210: Keep away from heat / sparks / open flames / hot surfaces. Do not smoke

P410 + P403: Store in a well ventilated area and protect from sunlight.

2.2 Label elements

According to Regulation (EC) No. 1272/2008 (CLP)

Pictograms

Signal Word(s):

Hazard Statement(s):

Precautionary Statement(s)

Contains:

Marking label for substances, packaged in refillable or not-refillable cartridges conform to EN 417 is making by:

GHS 02

(Flammable gas, hazard category 1)



danger
H220: Extremely flammable gas
P102: Keep out of reach of children
P210: Keep away from heat / sparks / open flames / hot surfaces. Do not smoke
P403: Store in a well ventilated

note
* The labeling is simplified under the exemption in Annex 1, Section 1.3.2.1 of the Regulation 1272/2008.

2.3 Other hazards:

In the prescribed storage and use conditions, there is no risk for the users of the product. The following will provide information about other dangerous conditions which, although not define the classification of the substance, contributing to the danger of the same:
In case of outflow, the fluid leaking from the container quickly evaporates, mixes with air and generates a risk of fire and/or explosion.
It may create an explosive mix with air, especially in closed environments or in empty, not decontaminated vessels.
The product is not deemed toxic, yet the build up of vapours in confined environments may cause asphyxia (due to oxygen deficiency).
Vapours are invisible, yet the expansion of the fluid generates fog in presence of wet air. Vapours density is higher than air and they propagate near the ground.
A significant heating of the vessel (for instance in case of fire) causes a huge increase of the fluid volume and pressure, with danger of burst of the vessel containing it. The contact with the fluid may cause severe injuries to skin and eyes due to cold.
Combustion produces CO₂ (carbon dioxide), asphyxiating gas; in case of oxygen deficiency, due to insufficient aeration/ventilation/fume discharge, it may produce CO (carbon monoxide), a highly toxic gas.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances:

Substance: Derived from oil distillation and processing, from extraction well by separation of natural gas, from chemical processes. The LPG is essentially a mix of propane and butane. The commercial composition may contain small amounts of other saturated hydrocarbons (ethane, isobutene and pentane) or unsaturated hydrocarbons (propylene and butenes) whose dangers do not differ from those typical of the substance indicated in section 2.

It does not contain amounts of 1,3 butadiene over 0.1%.

If marketed for combustion it contains a denaturant product (4 g for each 100 kg of LPG, as established by M.D. 21.3.1996 of the Ministry of Finance.

The LPG may as well contain an odorizing product, in order to enable its detection with concentrations lower than the L.I.E., in compliance with Law 6 December 1971, no. 1083.

Concentration KEMLER no. : 23
Classification ONU no. : 1057 – lighter refills
Index CEE no. : 270-704-2
CAS 68476-85-7
EINECS 649-202-00-6
REACH 1907/2006

Gas odorization must be realized according to standards UNI 7133 (combustible gases) and UNI EN 589 (LPG for vehicles). The concentrations of the above products, however, are lower than the prescribed limits.

3.2 Mixtures:

Not applicable

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

In case of:

Inhalation (gas phase):

- remove the injured person from the polluted area;
- immediately treat the injured person in case of symptoms due to vapours inhalation;
- ventilate the injured person in case of respiration difficulties.

Contact with skin (fluid phase):

- wash the affected part of the skin with water; remove clothing carefully and wash the affected part with plenty of water.
- seek a doctor for the treatment of possible lesions caused by cold.

Contact with eyes (fluid phase):

- wash with plenty of water with eyelids fully open; seek a specialist as soon as possible.

Ingestion:

- not applicable.

4.2 Most important symptoms and effects, both acute and delayed

(5) FIRE-FIGHTING MEASURES

5.1 Extinguishing media

LPG minor fires can be extinguished with fire extinguishers suitable for Class C fireworks, such as type of dry chemical or carbon dioxide type.

Are not adequate to the fires of LPG water or foam extinguishers.

The use of chemical powder fire extinguishers and carbon dioxide is also suitable for extinguishing fires involving the means of transport.

5.2 Special hazards arising from the substance or mixture

The combustion of the substance produces carbon dioxide (CO₂), asphyxiating gas. In the absence of oxygen, there is insufficient ventilation / ventilation can produce toxic fumes of carbon monoxide (CO).

5.3 Advice for fire-fighters:

Do not extinguish a fire if you're not sure to be able to intercept the gas flow.

An immediate outflow is preferable to a gas cloud, which expands and may find a source of ignition.

Use water to cool canisters and tanks hit by the fire to avoid overheating (with possibility of burst).

Small fires can be extinguished with chemical dust extinguishers, or with carbon dioxide extinguishers.

Significant amounts of burning outflows, when it is not possible to extinguish them by stopping the gas flow, shall be minimized and kept under control using spread jet water nozzles.

Use nebulised or split jet water to dilute, below the explosion threshold, the concentration of gas clouds (if any).

Dangerous products of combustion: CO₂, with danger of asphyxia in confined areas.

The special equipment for fire-fighting squads shall include helmets, visors, gloves as well as, in the most difficult cases, fire repellent suits and autorespirators.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

- Do not use electric devices, unless in safety conditions (for ex. Explosion-proof);
- Stop the outflow source, if it is possible to do it without risk;
- Avoid liquid contact with skin and eyes.

6.2 Environmental precautions

In case of spills or accidental releases of substances, it's recommended:

- Wear antistatic clothing made of cotton or wool and antistatic footwear. Avoid synthetic fabrics;
- Remove ignition sources.
- Prevent the gas from flowing into underground areas (e.g.: cellars, etc.), taking into account that vapours are heavier than air.
- Isolate the outflow area
- Inform the competent authorities according to the emergency plans

6.3 Methods and material for containment and cleaning up

- Wear antistatic clothing made of cotton or wool and antistatic footwear. Avoid synthetic fabrics;
- Protect eyes with glasses or face shield
- Wear antistatic footwear
- Protect your hands with gloves

(7) HANDLING AND STORAGE

7.1 Precautions for safe handling

- Avoid dispersions into the atmosphere
- Handle the product with closed circuit systems;
- Operate in well ventilated areas;
- Do not operate near ignition sources;
- Use anti-spark devices.
- Properly ground the equipment and avoid the build up of electrostatic charges during transfer and bottling operations;

To follow hygienic purposes we recommend:

- Don't eat, drink and smoke in working areas;

- Wash hands after use;
- Remove contaminated clothing and protective equipment before entering areas where you eat.

7.2 Conditions for safe storage, including any incompatibilities

- Deposits, bottling and transfer plants must be designed, realized and managed according to the specific technical safety rules for fire avoidance issued by the Ministry of Interior and the technical standards issued by CIG and published by UNI.
- In the areas classified according to the ATEX Directive, use safety electric equipment only, with Ex execution, group II G, temperature class not lower than T2.
- Fixed tanks, being pressurized equipment, must comply with the requirements of directive 97/23/CE (PED) and undergo periodical checks;
- Mobile vessels (canisters, drums, tank trucks, etc.) must comply with the requirements of the directive 1999/36/EC (TPED) and of ADR standards
- Do not store with oxidizing gases.

7.3 Specific end use(s):

Storage and handling of the product to be used for lighters, lighter recharges, aerosol and gas cartridges with their vessels must comply with ADR standards, specifically the packing instructions P003 (P002 for lighter refill art. 10051 – ONU code 1057)

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Dangerous concentrations for professional inhalation, above which damage due to exposition is foreseeable, are included in the document by ACGIH "Threshold Limit Value (TLV's) for Chemical Substances and Physical Agents & Biological Exposure Indices (BEI's), 2006 edition.

TLV-TWA : 1000 ppm *

Average concentration weighted over time (standard working day of 8 hours, 40 weekly working hours), to which the workers can be repeatedly exposed, day after day, without negative effects.

* - The specific TLVs for the LPG were removed in 2004. The table value, in compliance with the 2006 update, refers to "Aliphatic hydrocarbons: Alkanes [C1-C4]".

8.2 Exposure controls

(a) Respiratory protection

In case of interventions in areas with gas presence, use autorespirators;

(b) Skin protection

Use complete antistatic clothes, covering both upper and lower limbs

Hands protection

Use leather gloves and thermal insulation gloves with forearm protection for emergency.

(c) Eyes protection:

Use safety goggles, visors, face shields to protect from fluid jets.

(d) Thermal protection:

Against the dangers of frostbite for jet of liquid, use goggles or face shield, gloves and clothing to cover full insulation of the trunk and limbs

8.2.2 Environmental exposure protections

No evidence.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Stabilized physical state:	pressurized liquefied gas
Colour:	colourless
Smell:	characteristic, if odorized for combustion or vehicles use (1)
Smelling point:	0.2 ÷ 0.4% with odorizer
PH:	neutral
Solvents:	methanol, ethanol, ether
* Volumic mass of the fluid at 15° C, in Kg/l:	0.508 (propane) to 0.584 (butane), (method ASTM D 1657)
* Volumic mass of steam at 15° C, in Kg/m ³	1.76 (propylene) to 1.86 (propane) to 2.45 (butane)
Density (relative to air – gas phase)	From 1,5 (propane-propylene) to 2,0 (butane)
* Steam tension (abs.) at 15°C, in bars:	10.2 (propylene at 20°C) to 7.5 (propane) to 1.8 (butane), (method ASTM D 1267)
* Boling point in °C:	-48 (propylene) to -42 (propane) to -0.5 (butane)
* Melting point in °C:	-187 (propane) to -185 (propylene) to -138 (butane)
* Flash point in °C:	-107 (propylene) -104 (propane) to -60 (butane)
* Self ignition point in °C:	From 468 (propane) to 455 (propylene) to 405 (butane)
* Critical point in °C:	From 92 (propylene) to 96.5 (propane) to 151 (butane)
Lower and higher flash point threshold in air, % in volume	Lower 1,8 ÷ 2,27 Upper 8,41 ÷ 11
Materials suitability:	It melts fat and attacks natural rubber. Not corrosive for metallic materials.
Solubility in water:	marginal
** Dynamic viscosity in fluid phase, in Pa x s	11x10 ⁻⁵ (propane) to 17x10 ⁻⁵ (butane)
** Thermal conductivity in fluid phase at 15°C in W/m x °C:	13 x 10 ⁻² to 22 x 10 ⁻²
***Electric conductivity in fluid phase (at 0° ÷ 20°C) in Ω ⁻¹ x m ⁻¹	0.1 ÷ 0.5 x 10 ⁻¹² (propane), 1 ÷ 5 x 10 ⁻¹² (butane)

Notes: * Intermediate mixes feature values proportional to their percentages.

** Technical Data Book – A.P.I. (2nd edition, 1970)

*** Encyclopédie des gaz – ELSEVIER (1976)

(1) When not fragrant enough, the GPL will be stench to be detected before reaching dangerous concentrations in case

of disturbances in the air. (6.12.1971Law, No. 1083, and UNI 7133).

(10) STABILITY AND REACTIVITY

10.1 Reactivity

May form explosive mixture with air

10.2 Chemistry stability

No instability condition.

10.3 Possibility of hazardous reactions

No condition giving rise to dangerous reactions

10.4 Conditions to avoid

Avoid significant heating of product and vessels.

Avoid quick decompression of the vessels since it generates significant cooling, with temperatures well below 0 °C.

10.5 Incompatible materials

Incompatible with oxidizing agents.

10.6 Hazardous decomposition products

In case of trigger, it burns with exothermal reaction and production of carbon monoxides (CO₂, CO)

No possibility of degradation with formation of unstable products.

No stabilizer is required.

(11) TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity: slightly narcotic product; in high concentrations can cause asphyxia.

The quick evaporation of the product in fluid phase in contact with eyes and skin causes burns due to cold.

There are no evidences related to the following effects:

- chronic toxicity
- sensitizing power
- carcinogenesis
- mutagenesis
- teratogenesis

(12) ECOLOGICAL INFORMATION

12.1 Toxicity: N/A

12.2 Persistence and degradability: N/A

12.3. Bioaccumulative potential: N/A

12.4. Mobility in soil: N/A

12.5. Results of PBT and vPvB assessment: N/A

12.6 Other adverse effects: N/A

the undermentioned informations should be distributed between subsections 12.1 - 12.2 - 12.3 and 12.4

There are no data of ecotoxicity and biodegradability due to the high volatility of the product: it doesn't persist in aqueous means therefore it is not possible to perform the tests.

The release of big quantities of the product in the environment can increase the air content in volatile organic compounds (V.O.C.).

Therefore it is necessary to avoid outflows by carrying out the handling in a closed cycle.
The product is classified in danger class “0 – generally non polluting waters” – (sources BASF and HUELS – IUCLID, Existing Chemicals – 1996)

Ozone depletion potential (O.D.P.): 0 zero
Immiscible in water.

12.5. Results of PBT and vPvB assessment
12.6 Other adverse effects

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Take all the measures necessary to avoid product dispersion into the atmosphere.
Do not dispose of the product in sewers and in the environment.
In case of product disposal due to emergency, we recommend burning supervised by qualified technician.
There is no problem related to the disposal of vessels for use, transport and storage, because the vessels (canisters, drums, etc.) usually can be recharged.
The vessels which can no longer be used must be decommissioned according to standard UNI EN 12816 and disposed of according to Law Decree 152/2006 and s.m.e.i.

(14) TRANSPORT INFORMATION

14.1 UN-Number

UN1950: AEROSOL, flammable gas

14.2 UN proper shipping name

UN1950: AEROSOL, flammable gas

14.3 Transport hazard classes

Class: 2
Classification code: 5F
Danger Label: 2.1

14.4 Packing group

Not applicable

14.5 Environmental hazard

Transport by sea - I.M.D.G. Subsection 2.1 UN1950: AEROSOL, flammable gas
Marine pollutant:
EMS-Nr.: F-D,S-U for pierceable cartridges
MFAG: table no. 620
Air transport I.C.A.O. / I.A.T.A. Subsection 2.1 UN1950: AEROSOL, flammable gas
Air Cargo: Yes
Airliner: No

14.6 Special precautions for users:

Before starting transport of gas cylinders:
Ensure that containers are firmly secured;

Ensure that the valve is close thight;
Make sure the cap is properly applied to the output of the tap.

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

14.8 Information for each of the UN Model Regulations



Transport label: 2.1

flame and number symbol can be black or white alternatively on red background

SECTION 15: REGULATORY INFORMATION

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

Law Decree 17 August 1999, No 334 “Implementation of Directive 96/82/EC on the control of major accident hazards involving dangerous substances”

Law Decree 21, 2005, No 238 “Implementation of Directive 2003/105/EC that modify Directive 96/82/EC on the control of major accident hazards involving dangerous substances”

Decree of August 9, 2000 “Guidelines for the implementation of of safety system management” (Environment Ministry).

Ministerial Decree 26 May 2009, No 138 “Regulations on the rules of the forms of consultation for staff working at the plant on the internal emergency plans, according to art. 11, paragraph 5, of Legislative Decree 17 August 1999, Ranked # 334. “(TAF Min)

Decree 24 July 2009, No 139 “Regulations on the rules of the form of consulting the public about emergency plans, according to art. 20, paragraph 6, of Legislative Decree 17 August 1999, Ranked # 334. “(TAF Min)

Ministerial Decree October 13, 1994 ““Fire avoidance technical rule for design, building, installation and operation of LPG deposits in fixed vessels with overall capacity over 5 m³ and/or in mobile vessels with overall capacity over 5,000 kg”.

Decree 14 May 2004 ““Approval of the fire avoidance technical rule for installation and operation of LPG deposits with overall capacity not over 13 m³.” (Internal Min)

Circular of September 20, 1956, No 74 of the Ministry of the Interior, for the following parts:

Part Two “Safety for the construction and operation of deposits of LPG in cylinders, up to 5,000 kg”

Third Party “Safety standards for the resale of LPG, up to 70 kg”

Part Four “Safety standards for the centralized systems of distribution of LPG cylinders for domestic use, up to 2,000 kg”

Legislative Decree 2 February 2002, No 23 “ Implementation of the directives 1999/36/EC, 2001/2/EC and of deliberation 2001/107/EC concerning transportable pressure equipment”

15.2 Chemical safety assessment:

There are no evidence in this regard

(16) OTHER INFORMATION

Risk indications:

Workers must be informed and trained based on their specific jobs, according to applicable laws. Here is a list of the major laws and technical rules containing the applicable dispositions.

D.M. 13 October 1994

Ministry of Interior

“Training of the persons in charge of LPG deposits.”

D.M. 15 May 1996

Ministry of the Environment

“Safety procedures for transfer of LPG into deposits”

D.M. 13 March 1998

Ministry of Interior

“Obligation to train fire fighting and emergency management squads for all the activities subject to fire avoidance certificate”

D.M. 15 March 1998

Ministry of the Environment

“Methods to inform, train and equip workers on site”.

Decree 14 May 2004

Ministry of Interior

“Training of drivers in charge of filling LPG tanks with capacity up to 13 m³ ADR 2011 / Part 1

Ministry of Transport

1.3 Training of workers involved into dangerous shipping

1.4 Safety obligations of the operators

1.10 Rules concerning safety

Legen – abbreviations and acronyms:

ACGIH American Conference of Governmental Industrial Hygienists (USA);

ADR International Agreement dangerous transport by road

CLP Classification – Labeling and packaging

DM Ministerial Decree

D.Lgs Legislative Decree

RID International Agreement for dangerous shipment by rail

TLV-TWA weighted average concentration in 8 hours-working-day for 40 hours in week.

Source of the data used:

Handbook butane-propane gases - Denny, Luxon and Hall (4th ed. 1962)

Engineering Data Book – Gas Processors Suppliers Association (fifth revision, 1981)

Technical Data Book – A.P.I. (2nd edition, 1970)

Encyclopédie des gaz – ELSEVIER (1976)

ECB - ESIS - European Chemicals Substances Information System

ACGIH “Threshold Limit Value (TLV’s) for Chemical Substances and Physical Agents & Biological Exposure Indices (BEI’s), edition 2006.

The current Sheet is drafted in compliance with Annex II of Regulation (EC) no. 1907/2006.

The information contained in this sheet refer to the identified product only and may not be applicable if the product is used in conjunction with others or for uses different from those foreseen.

The information herein is based on the knowledge in our possession as of “1 January 2016”.

Downstream users and distributors concerned by this Sheet must draft their safety data according to applicable scenarios and information.