	SAFETY INFORMATION SHEET (according to 2001/58/CE directive and Decree of Ministry of Health 7th september 2002)	Date of issue:28:01:03 Date of revision:
	Product: Butane	Druckdatum:

1. Composition/Identification of the responsible on the market

Product name: Butane-Propane Mix: mixture of Butane and Butene

ARTICLE	GAS TYPE	
	BUTANE	BUTANE PROPANE
PL880 (G), PL740(035900), PL747 (035950) 190 gr Stechgas	X	
PL411 , TOPGAS200(035200) 210 g Ventilkartusche		X
PL411C 210g Zitronella Ventilkartusche		X
MULTIGAS300, MAXIGAS400 600ml (FLAMAL)Ventilgaskartusche		X
PL401 430 g Ventilkartusche		X

2. Composition/Product identification:

Chemical characterization

Description:

Mixture of hydrocarbons mainly composed of Butane (N- Butane and Iso-Butane), Butene and Mrcaptan odorized Propane.

No. CAS. 75-28-5 (ISO Butane) and 106-97-8 (N- Butane)

No. KEMLER: 23

No. EINACS 2709909

3. Dangers identification:

General indications: Butane and its mixtures are produced, stored, transported and distributed under pressure in liquefied phase. Under normal conditions they are never object of direct manipulation because they are confined, without interruptions, in closed systems until their final distribution for combustion (use).
Precautions to be taken are, first of all, the maintenance of the confinement. The temperature increase may cause the explosion of the article. The gas burst causes the explosion.


Physical/chemical: Extremely inflammable. In case of leakage the gas, which is heavier than the air, accumulates in the lower areas without ventilation. The intense heating of a container may cause its breaking and the product dispersion. The vapor burst may cause a deflagration or an explosion.

For man: At the gaseous state: The inhalation of vapours in high concentration may cause sleepiness, intoxication, narcosis and in extreme cases, coma due to oxygen rarefaction.

For the environment: For the environment: in normal conditions no danger is known.

4. FIRST AID INSTRUCTIONS.

General indications: In case of serious problems call a doctor or seek urgent medical help.
Eyes contact: Immediately wash with plenty of water. Seek a specialist as soon as possible.
Ingestion: Improbable
Inhalation: Bring the person in the open air, and let him take a rest. In case of respiratory difficulties or loss of consciousness, call a doctor and make artificial ventilation.
General indications: In case of serious problems call a doctor or seek urgent medical help.

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5. FIRE-FIGHTING MEASURES

Extinction equipment:	Recommended: powder CO ₂ , in some cases nebulized water Not recommended: water in a continual stream Ineffective: foam
Recommendations:	The incomplete combustion produces, in particular, toxic CO whose inhalation is dangerous. It is dangerous to extinguish a flame if you are not in a position to stop the loss completely.
Protection of stored material:	From the beginning of the fire remove the inflammable material and the exposed LPG containers. Cool the containers not evacuated with plenty of nebulized water. Do not to use jet water (<i>i.e. like hydrant</i>). Use fractionised jet water.
Fire of a container:	If a container connected to an appliance takes fire, do not to throw it or to turn it. It would increase danger (outflow of liquid gas, breaking of the container). Try to close the cock, protecting your hands and forearms with a cloth. Take people away. Never pierce a container on fire.

6. MEASURES IN CASE OF ACCIDENTAL OUTLOW

Measures to protect people:	Ventilate interiors; let the product evaporate. Inform everybody staying under wind about the fire and explosion danger; evacuate if necessary. Keep away from heat sources; avoid electric ignitions. Inform the competent authorities according to the regulations in force.
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7. HANDLING AND STORAGE


Handling:	Indications for safe handling: follow instructions on the container. Use the product only in well-ventilated areas. Use the product vertically.
Indications for fire-fighting and anti-explosion protection:	Indications for fire-fighting and anti-explosion protection: Do not smoke Avoid the accumulation of electrostatic charges. Never look for gas leaks by means of a flame; use soapy water only.
Storage	Store the product only in well-ventilated areas approved by local firemen and away from heat sources. Do not expose containers to temperatures exceeding 50 °C
Measures for the storage:	Do not store underground (cellars, taverns, etc.). Store away from low points where vapours may accumulate. Avoid contact with strong oxidizers and the proximity with other combustible materials

8. EXPOSURE CONTROL / INDIVIDUAL PROTECTION

Precautionary measures of technical nature	
Exposure control:	The odorized gas allows you to detect a 0,5% of gas content in the air In case you smell gas, before using the appliance look for the leak with soapy water. Always use in a ventilated place in order to allow the evacuation of the fumes and the combustion products (CO, CO ₂). Respect the instructions on the appliances and on the containers.
Personal protection	
Respiratory protection:	Admitted exposure limit: TLV-TWA 800 ppm (simple asphyxiating). In condition of normal exercise, no particular individual protection device is required. Avoid to enter in containers, adjacent premises or gas clouds where the presence of L.P.G. has reduced the oxygen percentage of the air under 16/17% (normally is 20/21%). In such case, even breathing normally, with a lack of oxygen, faint and the dead for asphyxia do not happen immediately if you are not recovered and subjected to artificial respiration
Hands protection	In case of liquid butane outflows protect your hands and forearms by means of thermal insulation gloves for temperatures in the order of 0 degrees centigrade.
Eyes protection:	Use protective goggles or facial screens. A sprinkling of liquid butane in the eyes may cause serious injuries.
Skin protection:	Avoid exposure skin, without adequate protection, to liquid butane jets in order to avoid lesions by cold.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state

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Shape: Liquefied gas under pressure (in containers) or gaseous at atmospheric pressure
Colour: colourless
Smell: characteristic (if odorized)
Smelling point: 0,2- 0,4%
 Safety data
PH: neutral
Self-ignition temperature: 405 C°
Flammable point: lower 1,8% v/v higher 8,41% v/v
Flash point: lower than -50°C

	Butane	Butane-Propane Mix
Boiling temperature (about 1 atm):	- 5°C	-25°
Vapour pressure		
Max. at about 15 °C	1,7 bar	2,8 bar
Max. at about 50°C	6,9 bar	8,6 bar
Liquid volume mass		
Density (15°C, 1 atm)	0,513kg/l at 50C°	0,50 kg/l at 50C°
Solubility in water:	2,01 kg/Nm3	1,95 kg/Nm3
Solvents	marginal	
	methanol, ethanol, ether, alcohol, chloroform	
Materials suitability	it melts fat and attacks natural rubber. Not corrosive for metallic materials.	

10. STABILITY AND REAKTIVITÄT

Decomposition due to fire: CO-CO2

Stability: Stable product
Dangerous reactions: They do not happen
Incompatible substances: strong oxidants

N.B.: avoid strong heating of the product and the unexpected, contemporary and fast decompression.

11. TOXICOLOGICAL INFORMATION

LC 50 (ratto) mg/mc/4h 658

Acute toxicity: slightly narcotic product; in high concentrations can cause asphyxia. Short exposures to concentrations of 10.000 ppm do not cause dangerous effects on man: exposures to 100.000 ppm (10%) can cause a light sense of vertigo in a few minutes.

Chronic toxicity: cases of such effect have not been noticed.

Corrosiveness/irritating power:

Skin: contact with liquid causes lesions by cold; it is not irritating at the gaseous state.

Eyes: contact with liquid causes possible lesions by cold; it is not irritating at the gaseous state.

Experience on man: there are no evidences to the following effects:

- chronic toxicity
- Sensitivity power
- carcinogenesis
- mutagenesis
- teratogenesis

12. ECOLOGICAL INFORMATION

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 close 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.) and then helping the formation of atmospheric polluting substances like ozone or nitric oxide by means of radical and phytochemical reactions. Therefore you have to avoid releases by carrying out the handling in a closed cycle.

Potential ozone reduction (O.D.P.): zero.

13. CONSIDERATIONS CONCERNING DISPOSAL

Uncleaned containers **Warnings:** unusable containers must be cleaned with water or inert gas

Cleaning material: water or inert gas


Product **Warnings:** LPG containers always contain inflammable vapours: do not pierce or burn a cartridge, even if it is empty.

The emptying of a container, which is not empty, must be carried out only by skilled staff and following the appropriate procedures.

Disposal: respect the regulations in force concerning the waste disposal of empty cartridges

PL401: aluminium

Other cartridges: steel

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Refillable bottles: steel

14. TRANSPORT INFORMATION

General remarks:

All containers conform to the requirements of the transport regulations. For the transport in quantity follow the prescriptions of the relevant regulations (road, sea or air).

Road transport ADR/RID and GGVS/GGVE

Class ADR: 2
Classification code: 5F
Danger label: No. 2.1
No. ONU: □ 2037 for piercing cartridges □ 1950 for cartridges with valve
Additions: place containers vertically. Do not park under the sun

Sea transport IMDG/GGVsea:

Class IATA: 2.1
No. ONU: □ 2037 for piercing cartridges □ 1950 for cartridges with valve

Air transport ICAO-TI and IATA-DGR:

Marine pollutant:
EMS-Nr.: F-D, S-U
MFAG: table no. 620

Class / UN-No. / PG: 2.1. □ 2037 or piercing cartridges □ 1950 for cartridges with valve
Air Cargo: Yes
Air Passengers: No

15. REGULATIONS INFORMATION

According to Decree 3 February 1997 no. 52 and Decree Ministry of Health 28 April 1997 (concerning the packing and labelling of the dangerous substances) L.P.G. labelling is codified as follows:

Symbol: F+ extremely inflammable

Danger phrases: R 12 extremely inflammable

Precaution suggestions:

S 2 Keep away from children
 S 9 Keep the container in a well ventilated area
 S 16 Keep away from flames or sparks. Do not smoke
 S 33 Avoid the constitution of electrostatic charges. It contains butadiene 1-3

16. OTHER INFORMATION

All information are based on our present state of knowledge. The material safety data sheet is designed to inform on the essential requirements of safety and right handling of the product. However, it shouldn't constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.