

CHARACTERISTICS	COMMERCIAL BUTANE	COMMERCIAL PROPANE
<ul style="list-style-type: none"> <li>• Chemical formula</li> <li>• Physical state at suitable environmental conditions (760 mm.Hg., atm. pressure at 15°C amb. temperature).</li> </ul>	<ul style="list-style-type: none"> <li>• <math>C_4H_{10}</math></li> <li>• Gaseous</li> </ul>	<ul style="list-style-type: none"> <li>• <math>C_3H_8</math></li> <li>• Gaseous</li> </ul>
Average density: at Liquid state at 15°C at gaseous state at 15°C and 1013 mbar	0.58 kg/dm <sup>3</sup> 2.44 kg/m <sup>3</sup>	0.51 kg/dm <sup>3</sup> 1.87 kg/m <sup>3</sup>
Density ratio to air	2.07	1.54
Boiling temperature at 1013 mbar	0°C	-44°C
Freezing point (pure product)	-138.5°C	-187.7°C
Critical point: Temperature Pressure	150.8°C 3.88 MPa - 38.8 bar	97.5°C 4.56 MPa - 45.6 bar
Relative vapour pressure: <ul style="list-style-type: none"> <li>• at + 5°C</li> <li>• at + 15°C</li> </ul>	0.08 MPa (0.8 bar) 0.17 MPa (1.7 bar)	0.52 MPa (5.2 bar) 0.75 MPa (7.5 bar)
Latent heat of vaporization at + 15°C per kg	362 kJ or 100.5 Wh (86.5 Cal)	356 kJ or 98.8 Wh (85 Cal)
Higher calorific value: <ul style="list-style-type: none"> <li>• each kg</li> <li>• per m<sup>3</sup> at 15°C and 1013 mbar</li> </ul>	13.7 kWh (11.800 Cal) 33.5 kWh (28.800 Cal)	13.8 kWh (11.900 Cal) 24.9 kWh (22.300 Cal)
Lower calorific value: <ul style="list-style-type: none"> <li>• each kg</li> <li>• per m<sup>3</sup> at 15°C and 1013 mbar</li> </ul>	12.66 kWh (10.900 Cal) 30.45 kWh (26.200 Cal)	12.78 kWh (11.000 Cal) 23.70 kWh (20.400 Cal)
Calorific energy	29.5 m <sup>3</sup> /m <sup>3</sup>	23 m <sup>3</sup> /m <sup>3</sup>
Smoke energy	31.8 m <sup>3</sup> /m <sup>3</sup>	24.8 m <sup>3</sup> /m <sup>3</sup>
Flammability limit in air: <ul style="list-style-type: none"> <li>• lower</li> <li>• upper</li> </ul>	1.8% 8.8%	2.4% 9.3%
Theoretical composition of the products of a neutral combustion (condensed water) <ul style="list-style-type: none"> <li>• CO<sub>2</sub></li> <li>• N<sub>2</sub></li> </ul>	14% 86%	13.7% 86.3%
Self-ignition temperature in the air (mixture corresponding to a complete combustion).	490°C	515°C
Flame propagation speed in cm/second	33	32
Maximum temperature, so called flame in air	1915°C	1920°C
<ul style="list-style-type: none"> <li>• Litres of gas at 1013 mbar (760 mmHg) and 15°C</li> <li>• from 1 L of Liquid are obtained about</li> <li>• from 1 kg of liquid are obtained about</li> </ul>	235 l 435 l	270 l 535 l