



LPG OPERATIONS MANUAL

HINDUSTAN PETROLEUM CORPORATION LIMITED



SECTION 1
SUBJECT

PROPERTIES & CHARACTERISTICS OF LIQUIFIED PETROLEUM GAS

Table 5
Property values for Propane & Butane

Description	Propane	Butane
Formula	C3H8	C4H10
Liquid Density @ 15 deg. centigrade	0.508	0.584
Co-efficient of Volumetric Expansion per degree C		
Mean Value Between : -20 degrees and + 20 degrees C	0.0028	0.0018
0 degrees and + 40 degrees C	0.0033	0.0020
Melting Point (degrees C)	-187	-137
Critical Temp. degrees C	97	152
Auto Ignition Temp. degrees C	481	441
Critical Pressure ata. (kg/cm ²)	43	39
Boiling Point at 760 mm of Hg, degrees C	-42.1	-0.5
Vapour Pressure ata. (Kg/cm ²)		
At -40 degrees C	1.11	0.17
At -20 degrees C	2.4	0.45
At 0 degrees C	4.8	1.04
At +20 degrees C	8.3	2.1
At +40 degrees C	14.0	3.9
Latent heat of Vapourization Kcal/kg		
At -20 degrees C	96	96
At 0 degrees C	90	92
At +20 degrees C	82	87
Specific Heat at 0 degrees C (Kcal/kg/degrees C)	0.57	0.54
Relative Density w.r.t. AIR (Air =1)	1.561	2.091
Ratio Gas/liquid	274	230
Flammability limit	2.2 - 9.5%	1.8 - 8.5%

The above values for LPG will depend upon the proportion of Butane & Propane in the mixture.