



PetroSA

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ADDENDUM 1

LIQUEFIED PETROLEUM GAS (LPG)

<u>PROPERTY</u>	<u>MEASURE UNIT</u>	<u>TEST METHOD</u>	<u>SPECIFICATION LIMIT</u>
Density @ 20 °C	kg/m ³	IP 235 or IP432	Report
Vapour pressure @ 37,8°C	kPa (GA)	ASTM D6897 or ASTM D1267	750 min 1050 max (refer to Table 1 for indicative ratio)
Copper Corrosion (1 hr @ 37,8°C)	Classification	ASTM D1838	Class 1 max
Free Water (visible)		SANS 1774 (5.3)	None
Total Sulphur	mg/kg	ASTM D5453	200 max
Odourisation - Mercaptan Content as Ethyl Mercaptan	µl/L	ASTM D5305 (Mod)	15 min
Residual matter:			
(a) Residue on Evaporation	ml/100ml	ASTM D2158	0,05 max
(b) Oil Stain Observation (using 1,5 ml of solvent-residue mixture) ^(note 2)	ml		Pass
Composition:		ASTM D2163 (Mod)	
Total C2 Hydrocarbons	mole %		6,0 max
Total Ethylene	mole %		1,0 max
Total Dienes	mole %		1,0 max
Total C5 and Higher Hydrocarbons (calculated as n - Pentane)	mole %		2,0 max
Gross Calorific Value @ 20°C			
MJ/kg (liquid)		ISO 6976:2016	Report
MJ/l (liquid)		ISO 6976:2016	Report

Notes :

- (1) This product complies to SABS SANS 1774:2018 Edition 2.1
- (2) No oil ring shall persist, when assessed in terms of 9.2.2 of ASTM D2158.
Expression of results, observation: No oil ring = "Pass"
- (3) In case of dispute regarding the determination of a specific property the listed test method shall be used as the referee test method.

Table 1 - Indicative Vapour Pressures for Propane and Butane Blends at various temperatures

1	2	3	4	5	6
	50:50	60:40:00	70:30:00	80:20:00	90:10:00
Temperature	Propane:Butane	Propane:Butane	Propane:Butane	Propane:Butane	Propane:Butane
°C	kPa	kPa	kPa	kPa	kPa
0	195	230	250	280	308
10	312	354	381	418	452
15,6	376	431	485	541	596
20	440	499	540	593	463
30	623	705	760	833	902
37,8	800	883	947	1024	1024
40	850	933	1000	1078	1078
<p>NOTE 1: The table is a guideline only and applies to blends of propane and butane and does not take into consideration any derivatives of C3 and C4 which will impact accuracy</p> <p>NOTE 2: ASTM D2598 may also be used to estimate composition.</p> <p>NOTE 3: Table 1 indicates the allowable vapour pressure ranges for LPG.</p>					