Unleaded Petrol

Meets IS EN 228:2012

Table 1

Property	**Units**	**Limits**		**Test Method** [a] (See 2. Normative references)
		Min.	**Max.**	
Research octane number, RON		**95,0**	--	EN ISO 5164 [b]
Motor octane number, MON		**85,0**	--	EN ISO 5163 [b]
Lead content	**mg/l**	--	**5,0**	EN 237
Density (at 15 °C) [c]	kg/m^3	720,0	775,0	EN ISO 3675 EN ISO 12185
Sulfur content [c]	**mg/kg**	--	**10,0**	EN ISO 20846 EN ISO 13032 EN ISO 20884
		--	**10,0**	EN ISO 20846 EN ISO 20884
Manganese Content	Mg/l	-	2,0	EN 16135, EN 16136
Oxidation stability	minutes	360	--	EN ISO 7536
Existent gum content (solvent washed)	mg/100 ml	--	5	EN ISO 6246
Copper strip corrosion (3 h at 50 °C)	rating	class 1		EN ISO 2160
Appearance		clear and bright		visual inspection
Hydrocarbon type content [c]	**% *(V/V)***			EN ISO22854 and 15553
- olefins		--	**18,0**	
- aromatics		--	**35,0**	
Benzene content [c]	**% *(V/V)***	--	**1,00**	EN 238, EN 12177, EN ISO 22854
Oxygen content [c]	**% *(m/m)***	--	**2,7**	EN 1601, 13132 and EN SO 22854
Oxygenates content [c]	**% *(V/V)***			EN 1601 EN 13132
- methanol [d]		--	**3,0**	EN ISO 22854
- ethanol [e]		--	**10,0**	
		--		
- iso-propyl alcohol			**Vol blending**	
- iso-butyl alcohol			**Restricted to**	
- tert-butyl alcohol			**2,7 % (m/m)**	
- ethers (5 or more C atoms)			**Max Oxygen content**	
- other oxygenates [f]				

NOTE Requirements in bold refer to the European Fuels Directive 98/70/EC [1], including Amendment 2003/17/EC [2].
A See also 5.7.1
B A correction factor of 0,2 for MON and RON shall be subtracted for the calculation of the final result, before reporting according to the requirements of the European Directive 98/70/EC [1], including Amendment 2,3 and 4 For advice on reporting see 5.6 and 5.7.2.
c See also 5.7.2
d See also 5.3.3

E Appearance shall be determined at ambient temperature.

f A CEN study found EN ISO 22854 applicable for analysis of samples having an oxygen content of Max 3,7% (m/m)
g Stabilising agents shall be added.

h Ethanol when used as a blending component shall confirm to EN 15376 (see 5.1) Stabilising agents may be added.

I Other mono-alcohols and ethers with a final boiling point no higher than prescribed in table

K The test methods cited do not have a precision statement for an oxygen content above 3% (m/m). Based on the round robin data from the last six years, CEN/TR 19 accepts an average reproducibility value of R=0,37 for all test methods

Table 2 - Volatility classes

Property	Units	class A	class C/C1	class F/F1	Test Method (a)
Vapour pressure (VP)	kPa, min. **kPa, max.**	45,0 **60,0**	50,0 80,0	70,0 100,0	EN 13016-1 [b]
% evaporated at 70°C, E70	% (*V/V*), min. % (*V/V*), max.	20,0 48,0	22,0 50,0	22,0 50,0	EN ISO 3405
% evaporated at 100°C, E100	**% (*V/V*), min.** % (*V/V*), max.	**46,0** 71,0	**46,0** 71,0	**46,0** 71,0	EN ISO 3405
% evaporated at 150°C, E150	**% (*V/V*), min.**	**75,0**	**75,0**	**75,0**	EN ISO 3405
Final Boiling Point (FBP)	°C, max.	210	210	210	EN ISO 3405
Distillation residue	% (*V/V*), max.	2	2	2	EN ISO 3405
Vapour Lock Index (VLI) (10 VP + 7 E70)	index, max.	--	C --	F --	
Vapour Lock Index (VLI) (10 VP + 7 E70)	index, max.		C1 1050	F1 1250	

NOTE Requirements in bold refer to the European Fuels Directive 98/70/EC [1], including Amendment 2003/17/EC [2]

A See also 5.8.1

b Dry Vapour Pressure Equivalent (DVPE) shall be reported


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