 LUKOIL LUKOIL Neftohim Burgas AD	COMPANY TECHNICAL SPECIFICATION	CTS 1 – 84.02
		AUTOMOTIVE FUEL. UNLEADED PETROL - (RON 100) (with a minimum biocomponent* content of 9 % (v/v)) (FOR EXPORT)

1. Technical requirements and test methods

1.1 Requirements and test methods


Table 1

№	Properties	Unit	Value		Test Method
			min	max	
1.	Research octan number, RON		100,0	-	BDS EN ISO 5164 (1)
2.	Motor octan number, MON		87,0	-	BDS EN ISO 5163 (1)
3.	Density (at 15°C)	kg/m ³	720,0	775,0	BDS EN ISO 3675 BDS EN ISO 12185 (2)
4.	Lead content	mg/l	-	5	BDS EN 237 VLMI 01-12 (3)
5.	Sulphur content	mg/kg	-	10,0	BDS EN ISO 20884 BDS EN ISO 20846
6.	Manganese content	mg/l	-	2,0	BDS EN 16135 BDS EN 16136
7.	Oxidation stability	min	360	-	BDS EN ISO 7536
8.	Existent gum content (solvent washed)	mg/100ml	-	5	BDS EN ISO 6246
9.	Copper strip corrosion (3 h at 50 °C)	rating	class 1		BDS EN ISO 2160
10.	Appearance		clear and bright liquid		BDS EN 228 BDS ISO 1998-2
11.	Hydrocarbon type content	% (V/V)			BDS EN ISO 22854 (2) BDS EN 15553
	• alkenes(olefins)		-	18,0	
	• arenes(aromatics)		-	35,0	
12.	Benzene content	% (V/V)	-	1,0	BDS EN 12177 BDS EN 238 BDS EN ISO 22854 (2)
13.	Oxygen content	% (m/m)	-	3,7	BDS EN 13132 BDS EN ISO 22854 (2)
14.	Oxygenates content	% (V/V)			BDS EN 1601 (2*)
	• Methanol		-	3,0	
	• Ethanol		-	10,0	
	• Iso-propyl alcohol		-	12,0	
	• Iso-butyl alcohol		-	15,0	
	• Tert-butyl alcohol		-	15,0	
	• Ethers (5 or more C-atoms)		-	22,0	
	• Other oxygenates		-	15,0	
15.	Content of biocomponent	% (V/V)	9,0	-	Calculated **

Notes:

* - biocomponent - bioethanol and/or ethers produced on the basis of bioethanol;

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Property 15 is according to the Energy from Renewable Sources Act – Article 47 (1), 5; SG No. 21/12.03.2021;

** - [content of biocomponent] = 1,00 x [content of ethanol] + 0,47 x [content of ETBE (ethyl-tertio-butyl-ether)], % (v/v);

(1) – A correction of 0,2 for MON and RON shall be subtracted for the calculation of the final result, before reporting according to the requirement of the BDS EN 228;

(2) - The method is umpire;

(3) - Validated method;

(2*) - The method is umpire only for methanol determination ;

BDS - Bulgarian standard

1.2 Volatility requirements and test methods

Table 2

№	Properties	Unit	Value		Test Method
			min	max	
1.	Vapour pressure (VP)				BDS EN 13016-1
	– Class A	kPa	45,0	60,0	
	– Class C	kPa	50,0	80,0	
2.	Distillation range				BDS EN ISO 3405
	% evaporated at 70°C, E70				
	– Class A	% (V/V)	22,0	50,0	
	– Class C	% (V/V)	24,0	52,0	
	% evaporated at 100°C, E100				
	– Class A	% (V/V)	46,0	72,0	
	– Class C	% (V/V)	46,0	72,0	
	% evaporated at 150°C, E150				
– Class A	% (V/V)	75,0	-		
– Class C	% (V/V)	75,0	-		
	Final Boiling Point FBP	°C	-	210	
	Distillation residue	% (V/V)	-	2	
3.	Vapour Lock Index (VLI) - Winter	index	-	1064	10 VP+7 E70

Notes:

Seasons: Class A - Summer 16.04 – 15.10

Class C - Winter 16.10 – 15.04

2. Product description

Highly flammable liquid with specific odour. Fuel for gasoline combustion engines.

When the fuel is dispatched as brand „ECTO”, improving performance additives are added.


3. Method for production and sampling

3.1 Blending of gasoline fraction and adding of at least 9 % biocomponent –bioethanol and/or bioether. Unleaded Petrol can contains additives that improve their performance parameters.

3.2 Sampling procedure corresponds to BDS EN ISO 3170.

Batch is the quantity of one kind or brand liquid fuel, with same qualitative indices, produced by the same technologies, stored in one or more tanks and accompanied by a test document.

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4. Storage

4.1. Closed tanks.

4.2. Only dedicated tanks, pipelines, tank cars, etc. shall be used for unleaded gasoline. No mixing with leaded gasoline is allowed.

5. Transportation and documents

5.1 Tankers, tank lorry and rail tanks, observing the transport regulation of fire hazardous materials.

5.2 The product has UN № 1203 according to UNO (United Nations Organization).

5.3 Each shipment shall be accompanied by Quality Certificate of the test results according to point 1.

5.4 Product SDS (Safety Data Sheet) is submitted to the user prior or at the time of first delivery.

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