 "LUKOIL Neftohim Burgas" AD	<b>COMPANY TECHNICAL SPECIFICATION</b>	<b>CTS 1-52</b>
<b>MARINE RESIDUAL FUELS CATEGORY ISO-F</b>		

### 1. Technical requirements and test methods

№	Properties	Unit	Value		Test Method
			min	max	
1.	Density at 15 °C	kg/m <sup>3</sup>	-	991,0	BDS EN ISO 3675 BDS EN ISO 12185
2.	Kinematic viscosity at 50 °C	mm <sup>2</sup> /s	-	380,0	BDS EN ISO 3104+AC ASTM D 445
3.	Calculated Carbon Aromaticity Index		-	870	
4.	Sulfur	% (m/m)	-	0,5	BDS EN ISO 8754 ASTM D 4294
5.	Flash point	°C	60	-	BDS EN ISO 2719 ASTM D 93 (B)
6.	Hydrogen sulfide	mg/kg	-	2,00	IP 570 Mobil M 1404
7.	Acid number	mg KOH/g	-	2,5	ASTM D 664
8.	Total sediment Determination using standard procedures for ageing ➤ thermal ageing (procedure A)*	% (m/m)	-	0,10	BDS ISO 10307-2 IP 390
9.	Carbon residue: micro method	% (m/m)	-	18,00	BDS EN ISO 10370
10.	Pour point (upper)	°C	-	30	BDS EN ISO 3016
11.	Water	% (V/V)	-	0,50	BDS EN ISO 3733
12.	Ash	% (m/m)	-	0,100	BDS EN ISO 6245
13.	Vanadium	mg/kg	-	350	IP 501, IP 470
14.	Sodium	mg/kg	-	100	IP 501, IP 470
15.	Aluminum + Silicon	mg/kg	-	60	IP 501, IP 470 ISO 10478
16.	Used lubricating oils (ULO) **: <ul style="list-style-type: none"> <li>➤ Calcium and Zinc</li> <li>or</li> <li>➤ Calcium and Phosphorus</li> </ul>	mg/kg		Calcium >30 and zinc >15 or Calcium >30 and phosphorus >15	IP 501, IP 470

Notes: \* - The method is umpire;


BDS - Bulgarian Standard;

\*\* - The fuel shall be free from ULO. A fuel shall be considered to contain ULO when either one of the following conditions is met: calcium >30 and zinc >15 or Calcium >30 and phosphorus >15.

**2. Product description:** Dark, viscous liquid.

**3. Method for production and sampling:**

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3.1 By a primary and secondary crude oil processing.

3.2 Sampling procedure corresponds to BDS EN ISO 3170.

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

**4. Storage:** Closed tanks.

**5. Transportation and documents:**

5.1 Tankers observing the transport regulation of fire hazardous materials.

5.2 The product is classified as UN № 3082 according to UNO (United Nations Organization).

5.3 Each lot shall be accompanied with Test Certificate or 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.

**end**