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QUALITY CERTIFICATE FOR MARINE HEAVY OIL FUEL

Report Number : **OM-BG-N-24-01** Date of issue: August 6th 2024
Goods : Marine Heavy Fuel Oil < 0,5% S; LSHFO-ISO-F-RMG 380
Client/s : LNG Croatia d.o.o.
Sampled by : Davor Vitezić Date of sampling: August 2nd 2024
Place of sampling : FSRU Croatia, IMO No. 9256767, LNG Terminal Omišalj
Sample taken from : Ship tanks, mark: HFO SETTLING TANK PORT&HFO SETTLING TANK STBD
Total quantity of sampled goods : 466 mt Sample number: 565-2/24
Sampled by norm : HRN EN ISO 3170 Sample quantity: 6x2,5 lit.
Analysis conducted in : Accredited laboratory by norm EN ISO/IEC 17025, HAA certificate No. 1054
Number of laboratory report : 50001193-0511/24 Laboratory sample number: LAB 726-24

ANALYSIS PARAMETER	METHOD	UNIT	LIMITS		RESULTS
			MIN	MAX	
Density at 15°C	HRN EN ISO 3675:2001	kg/m ³	-	991,00	947,7
Flash point	HRN EN ISO 2719:2016	°C	60,00	--	88,0
Kinematic viscosity at 50°C	HRN EN ISO 3104:2020	mm ² /s	-	380,0	66,30
Sulfur content	HRN EN ISO 8754:2004	% (m/m)	--	0,50	0,40
Water content	HRN EN ISO 3733	% (V/V)	--	0,50	0,05
Amount of coke residue	HRN EN ISO 10370:2014	% (m/m)	--	18,0	7,06
Index of aromaticity (CCAI)	Calculation		--	870	830
Ash content	HRN EN ISO 6245:2003	% (m/m)	--	0,100	0,018
Vanadium content	IP 501	mg/kg	-	350	8,26
Aluminium and silicon content	HRN ISO 10478	mg/kg	--	60,00	16,0
Pour point	HRN EN ISO 3016	°C	--	30	0
The total amount of sediments-by aging	HRN ISO 10307-2	% (m/m)		0,10	0,01
Acid number	ASTM D 664	mg KOH/g	--	2,50	0,28
H ₂ S Content	IP 570	mg/kg	--	2,00	0,840
Used lubricating oil	Visually	-	-	-	does not contain
Calcium content	IP 501	mg/kg	--	30	8
Zinc content	IP 501	mg/kg	--	15	2

Conclusion: On the basis of the Regulation on the quality of liquid petroleum fuels (N.N. no.: 131/21), we performed sampling and evaluation of tests carried out in a laboratory accredited according to the requirements of the HRN EN ISO/IEC 17025 standard. The results of the laboratory test of marine fuel are within the limit values prescribed by the norm HRN ISO 8217:2022 (table no. 2) and the Regulation on the quality of liquid petroleum fuels (N.N. no.: 131/21). The quality of marine fuel complies with the requirements of the standard for marine fuel, prescribed by HRN ISO 8217:2022, table no. 2., category ISO-F-RMG 380.

Laboratory analysis confirmed the quality of heavy diesel marine fuel, with less than 0.5% (m/m) sulfur (LSHFO-ISO-F-RMG 380, Marine Heavy Fuel oil) in ship tanks.



Darko Cuzek, univ. spec. oec., dipl. ing.

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