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# Certificate of Analysis

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<b>Client</b>	BV Lebanon	<b>Sampled By</b>	Tecnomar
<b>Client Ref No.</b>	Assigned by Ministry of Energy & Water/ Directorate General of Oil. By letter Ref:137/T/92,Dated-12-Feb-2025	<b>Date Sampled</b>	14-Feb-2025
<b>Operation Subject</b>	MT MINERVA ANTONIA	<b>Date Received</b>	16-Feb-2025
<b>Product</b>	Fuel Grade B	<b>Analysis Date</b>	16-Feb-2025
<b>Location</b>	Zouk Power Plant-Jieh Power Plant	<b>Date Reported</b>	17-Feb-2025
		<b>Seal No.</b>	Tecnomar-18803/Lebanese Customs-013118

FUEL OIL, MT MINERVA ANTONIA SHIP TANK COMPOSITE				
AEDLA-25-00122-002				
Test	Method	Unit	Result	Specification Min/Max
Potential Total Sediment	IP 390	% (m/m)	0.04	0.10 Max
Accelerated Total Sediment	IP 390	% (m/m)	0.03	0.10 Max
Total Sediment Existent	IP 375	% (m/m)	0.04	0.10 Max
Kinematic Viscosity at 50°C	ASTM D445	mm <sup>2</sup> /s	226.3	380 Max
Density at 15°C	ASTM D4052	kg/m <sup>3</sup>	939.5	991.0 Max
Micro Method Carbon Residue	ASTM D4530	% (m/m)	6.61	18 Max
Ash	ASTM D482	% (m/m)	0.021	0.10 Max
CCAI	ISO 8217	-	806	870 Max
Water Content	ASTM D95	% (V/V)	0.10	0.50 Max
Pour Point	ASTM D97	°C	+12	30 Max
Flash Point (Proc. B)	ASTM D93	°C	>110	60 Min
Total Sulfur Content	ASTM D4294	% (m/m)	0.918	1.0 Max
Total Acid Number	ASTM D664	mg KOH/g	0.40	2.5 Max
Vanadium	IP 501	mg/kg	30	350 Max
Sodium	IP 501	mg/kg	10	100 Max
Aluminum + Silicon	IP 501	mg/kg	11	60 Max
Free from used lubricating oils (ULO)	IP 501	-	Yes	Yes Max
Calcium	IP 501	mg/kg	4	30 Max
Zinc	IP 501	mg/kg	<1	15 Max
Phosphorus	IP 501	mg/kg	<1	15 Max
Hydrogen Sulfide	IP 570	mg/kg	<0.40	2.0 Max
Gross Heat of Combustion	ASTM D4868	MJ/kg	43.78	41 Min
Water and Sediment	ASTM D1796	% (V/V)	0.10	1.0 Max
Bromine Number	ASTM D1159	g Br/100g	8.2	12 Max
Ration of Asphaltenes content / Conderson Carbon Residue	Calculation	-	0.46	0.66Max
P-Value	SMS 1600	-	2.8	1.5 Min
Cleanliness Rating	ASTM D4740	-	1.0	3.0 Max
Heptane Insoluble	ASTM D6560	% (m/m)	3.0	0.5 – 30
Wax Content	UOP 46	% (m/m)	<5	5 Max

## AUTHORIZED SIGNATURE

*Crissent*

Crissent Varghese, Team Leader

End of Report

It is the responsibility of the end user to determine conformance appropriate to your end application, user should note the full provision of ASTM D3244, IP 367, ISO 4259 and UOP 999 whichever is applicable. Sample information and thereafter validity of test results relates to the sample as received unless otherwise stated, results relate only to the sample tested. Lab uses latest version of test methods unless otherwise stated in the report. Precision Statement of each test method will be applicable on the below results. This document is issued by the Company under its General Terms & Conditions of Service accessible at <https://commodities.bureauveritas.com/general-conditions-of-service>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be executed to the fullest extent of the law. This Test Report cannot be reproduced, except in full, without prior written permission of the Company.



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