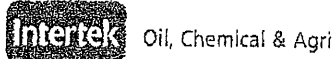


'CARGO INDICATOR V7'



CERTIFICATE OF QUALITY

VESSEL : MT " BOUGAINVILLE "  
PRODUCT : FO180 3.5  
TERMINAL : TANKSTORE, SINGAPORE  
SOURCE : SHORE TANK NO. 241  
TYPE OF SAMPLE : BEFORE LOADING  
DATE OF SAMPLE / TESTED : 19 / 09 / 2014  
SAMPLE NO. : TS 30708  
CARGO INDICATOR : V7

The above sample was tested in accordance with the test methods stipulated with the results as follows:-

Property	Unit	Limit	Test Method	Results
Density @ 15°C	kg/l	0.900-0.991	ASTM D1298	0.9899
Kinematic Viscosity @ 50°C	cSt	Max 180	ASTM D445	175.4
Flash Point	°C	Min 65	ASTM D93	70.0
Water by Distillation	vol %	Max 0.5	ASTM D95	0.20
Sulphur	wt %	Max 3.5	ASTM D4294	2.96
Ash	wt %	Max 0.10	ASTM D482	0.051
Vanadium	mg/kg	Max 200	IP 501	167
Sodium	mg/kg	Report	IP 501	25
Lead	mg/kg	Report	IP 501	< 1
CCAI		Report	Calculated	859
Strong Acid Number	mgKOH/g	Nil	ASTM D974	NI
Total Acid Number	mgKOH/g	Max 3.0	ASTM D664	0.21
Micro Carbon Residue	wt %	Max 15	ASTM D4530	13.9
Pour Point	°C	Max 10	ASTM D97	<-3
Total Sediment Existent	wt %	Max 0.10	IP 375	0.04
Total Sediment Accelerated	wt %	Max 0.10	IP 390B	0.05
Total Sediment Potential	wt %	Report	IP 390A	0.05
Differential: Total Sediment (Potential minus Existent)	wt %	Max 0.05	Calculated	0.01
Aluminium + Silicon	mg/kg	Max 70	IP 501	41 (18+23)
Calcium	mg/kg	Max 30	IP 501	8
Zinc	mg/kg	Max 15	IP 501	< 1
Phosphorus	mg/kg	Max 15	IP 501	1
Gross Calorific Value	MJ/kg	Min 41.92	ASTM D240	42.15



APPROVED SIGNATORY

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