

Marine fuel oil

Test	Unit	Test method			Limits	Grade										
		ASTM	IP	ISO		RMA 10	RMB 30	RMD 80	RME 180	RMG 180	RMG 380	RMG 500	RMG 700	RMK 380	RMK 500	RMK 700
Viscosity at 50°	mm ² /s (cSt)	D445	71	3104	max.	10.00	30.00	80.00	180.0	180.0	380.0	500.0	700.0	380.0	500.0	700.0
Density at 15°	kg/m ³	D1298	160	3675 or 12185	max.	920.00	960.0	975.0	991.0	991.0	991.0	991.0	991.0	1010.0	1010.0	1010.0
CCAI	-	Calculated			max.	850	860	860	860	870	870	870	870	870	870	870
Sulfur	mass %	D4294	336	8754, 14596	max.	Statutory requirements										
Flash point	°C	D93	34	2719	min.	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0
Hydrogen sulfide	mg/kg	-	570	-	max.	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Acid Number	mg KOH/g	D664	-	-	max.	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Total sediment aged	mass %	-	390	10307-2	max.	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Carbon residue, micro	mass %	D4530	398	10370	max.	2.50	10.00	14.00	15.00	18.00	18.00	18.00	18.00	20.00	20.00	20.00
Pour point Winter quality	°C	D97	15	3016	max.	0	0	30	30	30	30	30	30	30	30	30
Summer quality	°C	D97	15	3016	max.	6	6	30	30	30	30	30	30	30	30	30
Water	volume %	D95	74	3733	max.	0.30	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Ash	mass %	D482	4	6245	max.	0.040	0.070	0.070	0.070	0.100	0.100	0.100	0.100	0.150	0.150	0.150
Vanadium	mg/kg	-	501, 470	14597	max.	50	150	150	150	350	350	350	350	450	450	450
Sodium	mg/kg	-	501, 470	-	max.	50	100	100	50	100	100	100	100	100	100	100
Aluminium + Silicon	mg/kg	D5184	501, 470	10478	max.	25	40	40	50	60	60	60	60	60	60	60
Used lubricating oil Calcium + Zinc Calcium + Phosphorus	mg/kg mg/kg	- -	501 or 470 500	- -	- -	The fuel shall be free of 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										

