

Table 2 — Residual marine fuels

Characteristics	Unit	Limit	Category ISO-F-											Test method(s) and references	
			RMA	RMB	RMD	RME	RMG				RMK				
			10	30	80	180	180	380	500	700	380	500	700		
Kinematic viscosity at 50 °C	mm ² /s ^a	Max	10,00	30,00	80,00	180,0	180,0	380,0	500,0	700,0	380,0	500,0	700,0	ISO 3104	
Density at 15 °C	kg/m ³	Max	920,0	960,0	975,0	991,0	991,0				1010,0			ISO 3675 or ISO 12185; see 7.1	
CCAI		Max	850	860	860	860	870				870			See 7.2	
Sulfur ^b	mass %	Max	Statutory requirements											ISO 8754 or ISO 14596 or ASTM D4294; see 7.3	
Flash point	°C	Min	60,0	60,0	60,0	60,0	60,0				60,0			ISO 2719; see 7.4	
Hydrogen sulfide	mg/kg	Max	2,00	2,00	2,00	2,00	2,00				2,00			IP 570; see 7.5	
Acid number ^c	mg KOH/g	Max	2,5	2,5	2,5	2,5	2,5				2,5			ASTM D664; see 7.6	
Total sediment – Aged	mass %	Max	0,10	0,10	0,10	0,10	0,10				0,10			ISO 10307-2; see 7.9	
Carbon residue – Micro method	mass %	Max	2,50	10,00	14,00	15,00	18,00				20,00			ISO 10370	
Pour point (upper) ^d	winter	°C	Max	0	0	30	30	30				30			ISO 3016
	summer	°C	Max	6	6	30	30	30				30			
Water	volume %	Max	0,30	0,50	0,50	0,50	0,50				0,50			ISO 3733	
Ash	mass %	Max	0,040	0,070	0,070	0,070	0,100				0,150			ISO 6245	
Vanadium	mg/kg	Max	50	150	150	150	350				450			IP 501, IP 470 or ISO 14597; see 7.14	

^a 1 mm²/s = 1 cSt.

^b The purchaser shall define the maximum sulfur content in accordance with relevant statutory limitations. See Introduction.

^c See [Annex E](#).

^d The purchaser should confirm that this pour point is suitable for the ship's intended area of operation.

Table 2 (continued)

Characteristics	Unit	Limit	Category ISO-F-											Test method(s) and references
			RMA	RMB	RMD	RME	RMG				RMK			
			10	30	80	180	180	380	500	700	380	500	700	
Sodium	mg/kg	Max	50	100	100	50	100				100			IP 501, IP 470; see 7.15
Aluminium plus silicon	mg/kg	Max	25	40	40	50	60				60			IP 501, IP 470 or ISO 10478; see 7.16
Used lubricating oil (ULO): Calcium and zinc or Calcium and phosphorus	mg/kg		Calcium >30 and zinc >15 or Calcium >30 and phosphorus >15											IP 501 or IP 470, IP 500; see 7.17

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^c See [Annex E](#).

^d The purchaser should confirm that this pour point is suitable for the ship's intended area of operation.