

REQUIREMENTS FOR MARINE RESIDUAL FUELS

Characteristic	Unit	Limit	Category ISO-F-RMG		Test method reference
			180	380	
Kinematic viscosity at 50 °C	mm ² /s ^a	Max	180,0	380,0	ISO 3104
Density at 15 °C	kg/m ³	Max	991,0		ISO 3675 or ISO 12185; see 6.1
CCAI	–	Max	870		see 6.2
Sulfur ^b	mass %	Max	0,5		ISO 8754 or ISO 14596 or ASTM D4294; see 6.3
Flash point	°C	Min	60,0		ISO 2719; see 6.4
Hydrogen sulfide	mg/kg	Max	2,00		IP 570; see 6.5
Acid number ^c	mg KOH/g	Max	2,5		ASTM D664; see 6.6
Total sediment – Aged	mass %	Max	0,10		ISO 10307-2; see 6.9
Carbon residue – Micro method	mass %	Max	18,00		ISO 10370
Pour point (upper) ^d	winter	°C	Max 30		ISO 3016
	summer	°C	Max 30		
Water	volume %	Max	0,50		ISO 3733
Ash	mass %	Max	0,1		ISO 6245
Vanadium	mg/kg	Max	350		IP 501, IP 470 or ISO 14597; see 6.14
Sodium	mg/kg	Max	100		IP 501, IP 470; see 6.15
Aluminium plus silicon	mg/kg	Max	60		IP 501, IP 470 or ISO 10478; see 6.16
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 6.17

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 Purchasers should confirm that this pour point is suitable for the ship's intended area of operation.