



# ISO 8217:2017

## Specifications of Marine Fuels

### Fuel Oil – Marine Residual Fuels

Characteristic	Unit	Limit	Category ISO-F-											Test method reference	
			RMA	RMB	RMD	RME	RMG				RMK				
			10	30	80	180	180	380	500	700	380	500	700		
Kinematic viscosity at 50C	mm <sup>2</sup> /s <sup>a</sup>	Max	10	30	80	180	180	380	500	700	380	500	700	ISO 3104	
Density at 15C	kg/m <sup>3</sup>	Max	920,0	960,0	975,0	991,0	991,0				1010,0			ISO 3675 or ISO 12185; see 6.1	
CCAI	–	Max	850	860	860	860	870				870			see 6.2	
Sulfur <sup>b</sup>	mass %	Max	Statutory requirements											ISO 8754 or ISO 14596 or ASTM D4294; see 6.3	
Flash point	C	Min	60,0	60,0	60,0	60,0	60,0				60,0			ISO 2719; see 6.4	
Hydrogen sulfide	mg/kg	Max	2,00	2,00	2,00	2,00	2,00				2,00			IP 570; see 6.5	
Acid number <sup>c</sup>	mg KOH/g	Max	2,5	2,5	2,5	2,5	2,5				2,5			ASTM D664; see 6.6	
Total sediment – Aged	mass %	Max	0,10	0,10	0,10	0,10	0,10				0,10			ISO 10307-2; see 6.9	
Carbon residue – Micro method	mass %	Max	2,50	10,00	14,00	15,00	18,00				20,00			ISO 10370	
Pour point (upper) <sup>d</sup>	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 6.14	
Sodium	mg/kg	Max	50	100	100	50	100				100			IP 501, IP 470; see 6.15	
Aluminium plus silicon	mg/kg	Max	25	40	40	50	60				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	

<sup>a</sup> 1 mm<sup>2</sup>/s = 1 cSt.  
<sup>b</sup> The purchaser shall define the maximum sulfur content in accordance with relevant statutory limitations. See Introduction.  
<sup>c</sup> See Annex E.  
<sup>d</sup> Purchasers should confirm that this pour point is suitable for the ship's intended area of operation.