

Heavy Fuel Oil

Residual Marine Fuels
ISO 8217 2010 Specification for Marine Fuels

Characteristics	Unit	Limit	Category ISO-F-										Test method reference	
			RMA	RMB	RMD	RME	RMG			RMK				
			10 ^a	30	80	180	180	380	500	700	380	500	700	
Kinematic viscosity at 50 °C ^b	mm ² /s	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			see 7.1 ISO 3675 or ISO 12185	
CCAI	–	max.	850	860	860	860	870			870			see 6.3 a)	
Sulfur ^c	mass %	max.	Statutory requirements										see 7.2 ISO 8754 ISO 14596	
Flash point	°C	min.	60,0	60,0	60,0	60,0	60,0			60,0			see 7.3 ISO 2719	
Hydrogen sulfide ^d	mg/kg	max.	2,00	2,00	2,00	2,00	2,00			2,00			IP 570	
Acid number ^e	mg KOH/g	max.	2,5	2,5	2,5	2,5	2,5			2,5			ASTM D664	
Total sediment aged	mass %	max.	0,10	0,10	0,10	0,10	0,10			0,10			see 7.5 ISO 10307-2	
Carbon residue: micro method	mass %	max.	2,50	10,00	14,00	15,00	18,00			20,00			ISO 10370	
Pour point (upper) ^f	winter quality	°C	0	0	30	30	30			30			ISO 3016	
	Summer quality	°C	6	6	30	30	30			30			ISO 3016	
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			see 7.7 IP 501, IP 470 or ISO 14597	
Sodium	mg/kg	max.	50	100	100	150	100			100			see 7.8 IP 501 IP 470	
Aluminium plus silicon	mg/kg	max.	25	40	40	50	60			60			see 7.9 IP 501, IP 470 or ISO 10478	
Used lubricating oils (ULO): calcium and zinc; or calcium and phosphorus	mg/kg	–	The fuel shall be free from 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										see 7.10 IP 501 or IP 470 IP 500	

a This category is based on a previously defined distillate DMC category that was described in ISO 8217:2005, Table 1. ISO 8217:2005 has been withdrawn.

b 1 mm²/s = 1cSt.

c The purchaser shall define the maximum sulfur content in accordance with relevant statutory limitations.

f Purchasers shall ensure that this pour point is suitable for the equipment on board, especially if the ship operates in cold climates.