

Heavy Fuel Oil

Residual Marine Fuels
ISO 8217 2017 Specification for Marine Fuels

Characteristics	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 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
CCAI	—	max.	850	860	860	860	870				870			
Sulfur ^b	mass %	max.	Statutory requirements											ISO 8754, ISO 14596 or ASTM D4294
Flash point	°C	min.	60,0	60,0	60,0	60,0	60,0				60,0			ISO 2719
Hydrogen sulfide	mg/kg	max.	2,00	2,00	2,00	2,00	2,00				2,00			IP 570
Acid number ^c	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			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) ^d	winter	°C	0	0	30	30	30				30			ISO 3016
	summer	°C	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
Sodium	mg/kg	max.	50	100	100	50	100				100			IP 501, IP 470
Aluminium plus silicon	mg/kg	max.	25	40	40	50	60				60			IP 501, IP 470 or ISO 10478
Used lubricating oils (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

- a 1 mm²/s = 1cSt.
b The purchaser shall define the maximum sulfur content in accordance with relevant statutory limitations.
c See Annex E ISO 8217:2017
d The purchaser should confirm that this pour point is suitable for the ship's intended area of operation.