Table 2 — Residual marine fuels

Characteristic		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	max.	0	0	30	30	30				30			ISO 3016
	summer quality	°C	max.	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	50	100				100			see 7.8 IP 501 IP 470

Table 2 (*continued*)

Characteristic	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	
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 ISO 8217:2005 has been withdrawn.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 mm^2/s = 1cSt.

[c] The purchaser shall define the maximum sulfur content in accordance with relevant statutory limitations. See 0.3 and Annex C.

[d] Due to reasons stated in Annex D, the implementation date for compliance with the limit shall be 1 July 2012. Until such time, the specified value is given for guidance.

[e] See Annex H.

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