

Table 1 — Distillate marine fuels

Characteristic	Unit	Limit	Category ISO-F-				Test method reference	
			DMX	DMA	DMZ	DMB		
Kinematic viscosity at 40 °C ^a	mm ² /s	max.	5,500	6,000	6,000	11,00	ISO 3104	
		min.	1,400	2,000	3,000	2,000		
Density at 15 °C	kg/m ³	max.	—	890,0	890,0	900,0	see 7.1 ISO 3675 or ISO 12185	
Cetane index	—	min.	45	40	40	35	ISO 4264	
Sulfur ^b	mass %	max.	1,00	1,50	1,50	2,00	see 7.2 ISO 8754 ISO 14596	
Flash point	°C	min.	43,0	60,0	60,0	60,0	see 7.3 ISO 2719	
Hydrogen sulfide	mg/kg	max.	2,00	2,00	2,00	2,00	see 7.11 IP 570	
Acid number	mg KOH/g	max.	0,5	0,5	0,5	0,5	ASTM D664	
Total sediment by hot filtration	mass %	max.	—	—	—	0,10 ^d	see 7.4 ISO 10307-1	
Oxidation stability	g/m ³	max.	25	25	25	25 ^e	ISO 12205	
Carbon residue: micro method on the 10 % volume distillation residue	mass %	max.	0,30	0,30	0,30	—	ISO 10370	
Carbon residue: micro method	mass %	max.	—	—	—	0,30	ISO 10370	
Cloud point	°C	max.	−16	—	—	—	ISO 3015	
Pour point (upper) ^c	winter quality	°C	max.	—	−6	−6	0	ISO 3016
	summer quality	°C	max.	—	0	0	6	ISO 3016
Appearance	—	—	Clear and bright ^h			d, e, f	see 7.6	

^a 1 mm²/s = 1 cSt.

^b Notwithstanding the limits given, the purchaser shall define the maximum sulfur content in accordance with relevant statutory limitations. See Annex C.

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

^d If the sample is not clear and bright, the total sediment by hot filtration and water tests shall be required, see 7.4 and 7.6.

^e If the sample is not clear and bright, the test cannot be undertaken and hence the oxidation stability limit shall not apply.

^f If the sample is not clear and bright, the test cannot be undertaken and hence the lubricity limit shall not apply.

^g This requirement is applicable to fuels with a sulfur content below 500 mg/kg (0,050 mass %).

^h If the sample is dyed and not transparent, then the water limit and test method as given in 7.6 shall apply.

Table 1 (continued)

Characteristic	Unit	Limit	Category ISO-F-				Test method reference
			DMX	DMA	DMZ	DMB	
Water	volume %	max.	—	—	—	0,30 ^d	ISO 3733
Ash	mass %	max.	0,010	0,010	0,010	0,010	ISO 6245
Lubricity, corrected wear scar diameter (wsd 1,4) at 60 °C ^h	µm	max.	520	520	520	520 ^g	ISO 12156-1

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^f If the sample is not clear and bright, the test cannot be undertaken and hence the lubricity limit shall not apply.

^g This requirement is applicable to fuels with a sulfur content below 500 mg/kg (0,050 mass %).

^h If the sample is dyed and not transparent, then the water limit and test method as given in 7.6 shall apply.