Distillate Marine Fuels

Meets ISO 8217:2012 (E)

Characteristic	Unit	Limit	Category ISO-F-				Test method reference
			DMX	DMA	DMZ	DMB	
Kinematic viscosity at 40 oC[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 oC	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	oC	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		oC	max.	–16	—	—	—	ISO 3015
Pour point (upper)[c]	winter quality	oC	max.	—	–6	–6	0	ISO 3016
	summer quality	oC	max.	—	0	0	6	ISO 3016
Appearance		—	—	Clear and bright[h]			[d, e, f]	see 7.6

[a] 1 mm^2/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 filtrationand 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.

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 oC[h]	µm	max.	520	520	520	520[g]	ISO 12156-1

[a] 1 mm^2/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.