

Table 1 – Distillate Marine Fuels

Characteristics	Unit	Limit	Category ISO-F				Test methods	
			DMX	DMA	DMZ	DMB		
Kinematic Viscosity at 40°C ^a	mm ² /s	max.	5,500	6,000	6,000	11,00	ISO3104	
		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 ISO3675 or ISO12185	
Cetane Index	-	min.	45	40	40	35	ISO4264	
Sulfur ^b	mass%	max.	1.00	1.50	1.50	2.00	see 7.2 ISO8754 ISO14596	
Flash Point	°C	min.	43.0	60.0	60.0	60.0	see 7.3 ISO 2719	
Hydrogen sulfide ^c	mg/kg	max.	2.00	2.00	2.00	2.00	IP570	
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 ^e	see 7.4 ISO 10307-1	
Oxidation stability	g/m ³	max.	25	25	25	25 ^f	ISO12205	
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	ISO10370	
Cloud point	°C	max.	-16	-	-	-	ISO3015	
Pour point (upper) ^d	winter quality	°C	max.	-	-6	-6	0	ISO3016
	summer quality	°C	max.	-	0	0	6	ISO3016
Appearance	-	-	clear and bright ^j			e,f,g	see 7.6	
Water	volume%	max.	-	-	-	0.30 ^e	ISO3733	
Ash	mass%	max.	0.010	0.010	0.010	0.010	ISO6245	
Lubricity, corrected wear scar diameter (wsd 1.4) at 60 °C ^h	µm	max.	520	520	520	520 ^g	ISO12156-1	

Characteristics	Unit	Limit	Category ISO-F				Test Method reference
			DMX	DMA	DMZ	DMB	
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							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. For distillate fuels the precision data are currently being developed.
d							Purchasers should ensure that this pour point is suitable for the equipment on board, especially if the ship operates in cold climates.
e							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.
f							If the sample is not clear and bright the test cannot be undertaken and hence the oxidation stability limit shall not apply.
g							If the sample is not clear and bright, the test cannot be undertaken and hence the lubricity limit shall not apply.
h							This requirement is applicable to fuels with a sulfur content below 500 mg/kg (0.050 mass %).
j							If the sample is dyed and not transparent, then the water limit and test method as given in 7.6 shall apply.