

REQUIREMENTS FOR MARINE DISTILLATE FUELS

Characteristic	Unit	Limit	Category ISO-F-DMA	Test method(s) and references	
Kinematic viscosity at 40 °C	mm ² /s ^a	Max Min	6,000 2,000	ISO 3104	
Density at 15 °C	kg/m ³	Max	890,0	ISO 3675 or ISO 12185; see 6.1	
Cetane index	–	Min	40	ISO 4264	
Sulfur ^b	mass %	Max	1,00	ISO 8754 or ISO 14596, ASTM D4294; see 6.3	
Flash point	°C	Min	60,0	ISO 2719; see 6.4	
Hydrogen sulfide	mg/kg	Max	2,00	IP 570; see 6.5	
Acid number	mg KOH/g	Max	0,5	ASTM D664; see 6.6	
Total sediment by hot filtration	mass %	Max	–	ISO 10307-1; see 6.8	
Oxidation stability	g/m ³	Max	25	ISO 12205	
Fatty acid methyl ester (FAME) ^e	volume %	Max	–	ASTM D7963 or IP 579; see 6.10	
% volume distillation residue	mass %	Max	0,30	ISO 10370	
Carbon residue – Micro method	mass %	Max	–	ISO 10370	
Cloud point ^f	winter	°C	Max	report	ISO 3015; see 6.11
	summer	°C	Max		
Cold filter plugging point ^f	winter	°C	Max	report	IP 309 or IP 612; see 6.11
	summer	°C	Max		
Pour point (upper) ^f	winter	°C	Max	– 6 0	ISO 3016; see 6.11
	summer	°C	Max		
Appearance			Clear and Bright ^g	see 6.12	
Water	volume %	Max	–	ISO 3733	
Ash	mass %	Max	0,01	ISO 6245	
(WSD) at 60 °C ^h	µm	Max	520	ISO 12156-1	

^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 Introduction.

^c If the sample is not clear and bright, the total sediment by hot filtration and water tests shall be required, see 6.8 and 6.12.

^d If the sample is not clear and bright, the test cannot be undertaken and therefore, compliance with this limit cannot be shown.

^e See 5.1 and Annex A.

^f Pour point cannot guarantee operability for all ships in all climates. The purchaser should confirm that the cold flow characteristics (pour point, cloud point, cold filter, plugging point) are suitable for the ship's design and intended voyage. See 6.11.

^g If the sample is dyed and not transparent, then the water limit and test method as given in 6.12 shall apply.

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