



ISO 8217:2017

Specifications of Marine Fuels

Marine Gas Oil – Marine Distillate Fuels

Characteristic	Unit	Limit	Category ISO-F-						Test method(s) and references	
			DMX	DMA	DFA	DMZ	DFZ	DMB		DFB
Kinematic viscosity at 40 °C	mm ² /s ^a	Max	5,500	6,000	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	ISO 3675 or ISO 12185; see 6.1			
Cetane index	–	Min	4 5	40	40	35	ISO 4264			
Sulfur ^b	mass %	Max	1,00	1,00	1,00	1,50	ISO 8754 or ISO 14596, ASTM D4294; see 6.3			
Flash point	°C	Min	43,0	60,0	60,0	60,0	ISO 2719; see 6.4			
Hydrogen sulfide	mg/kg	Max	2,00	2,00	2,00	2,00	IP 570; see 6.5			
Acid number	mg KOH/g	Max	0,5	0,5	0,5	0,5	ASTM D664; see 6.6			
Total sediment by hot filtration	mass %	Max	–	–	–	0,10 ^c	ISO 10307-1; see 6.8			
Oxidation stability	g/m ³	Max	2 5	25	25	25 ^d	ISO 12205			
Fatty acid methyl ester (FAME) ^e	volume %	Max	–	–	7,0	–	7,0	–	7,0	ASTM D7963 or IP 579; see 6.10
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 ^f	winter	°C	Max	–16	report	report	–	ISO 3015; see 6.11		
	summer	°C	Max	–16	–	–	–			
Cold filter plugging point ^f	winter	°C	Max	–	report	report	–	IP 309 or IP 612; see 6.11		
	summer	°C	Max	–	–	–	–			
Pour point (upper) ^f	winter	°C	Max	–	–6	–6	0	ISO 3016; see 6.11		
	summer	°C	Max	–	0	0	6			
Appearance			Clear and Bright ^g				^c	see 6.12		
Water	volume %	Max	–	–	–	0,30 ^c	ISO 3733			
Ash	mass %	Max	0,010	0,010	0,010	0,010	ISO 6245			
Lubricity, corrected wear scar diameter (WSD) at 60 °C ^h	m	Max	520	520	520	520 ^d	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 %).