

Marine Gas Oil

Distillate Marine Fuels
ISO 8217 2017 Specification for Marine Fuels

Characteristics	Unit	Limit	Category ISO-F-						Test method reference	
			DMX	DMA	DFA	DMZ	DFZ	DMB		DFB
Kinematic viscosity at 40 °C	mm ² /s ^a	max.	5,500	6,000		6,000		11,000	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 6.1 ISO 3675 or ISO 12185	
Cetane index	–	min.	45	40		40		35	ISO 4264	
Sulfur ^b	mass %	max.	1,00	1,00		1,00		1,50	see 6.3 ISO 8754, ISO 14596, ASTM D4294	
Flash point	°C	min.	43	60		60		60	see 6.4 ISO 2719	
Hydrogen sulfide	mg/kg	max.	2,00	2,00		2,00		2,00	see 6.5 IP 570	
Acid number	mg KOH/g	max.	0,5	0,5		0,5		0,5	see 6.6 ASTM D664	
Total sediment by hot filtration	mass %	max.	–	–		–		0,10 ^c	see 6.8 ISO 10307-1	
Oxidation stability	g/m ³	max.	25	25		25		25 ^d	ISO 12205	
Fatty acid methyl ester (FAME)	volume %	max.	–	–	7,0	–	7,0	–	7,0	see 6.10 ASTM D7963 or IP 579
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		–	see 6.11 ISO 3015	
	summer	°C	max.	-16	–	–		–		
Cold filter winter Plugging point ^e	winter	°C	max.	–	report	report		–	see 6.11 IP 309 or IP 612	
	summer	°C	max.	–	–	–		–		
Pour point (upper)	winter	°C	max.	–	-6	-6		0	see 6.11 ISO 3016	
	summer	°C	max.	–	0	0		6		
Appearance	Clear and bright ^f							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 ^g	µm	max.	520	520		520		520 ^d	ISO 12156-1	

a 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 If 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.

f If the sample is dyed and not transparent, then the water limit and test method as given in ISO8217:2017 6.12 shall apply.

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