ISO 8217:2017

MARINE DISTILLATE FUELS

Parameter (Unit)	Limit	DMX	DMA [DFA]	DMZ [DFZ]	DMB [DFB]	Test Method
Density at 15 °C (kg/m^3)	Max	-	890	890	900	ISO 3675/12185
Viscosity at 40 °C[a] (mm2/s)	Max Min	5.5 1.4	6.0 2.0	6.0 3.0	11.0 2.0	ISO 3104
Micro Carbon Residue at 10% (% m/m)	Max	0.3	0.3	0.3	-	ISO 10370
Micro Carbon Residue (% m/m)	Max	-	-	-	0.3	ISO 10370
Water (% V/V)	Max	-	-	-	0.3[c]	ISO 3733
Sulphur[b] (% m/m)	Max	1.0	1.0	1.0	1.5	ISO 14596/8754 ASTM D4294
Total Sediment by hot filtration (% m/m)	Max	-	-	-	0.1[c]	ISO 10307-1
Ash (% m/m)	Max	0.01	0.01	0.01	0.01	ISO 6245
Flash point (°C)	Min	43	60	60	60	ISO 2719
Pour point in Summer[f] (°C)	Max	-	0	0	6	ISO 3016
Pour point in Winter[f] (°C)	Max	-	-6	-6	0	ISO 3016
Cloud point[f] (°C)	Max	-16	(report in winter)	(report in winter)	-	ISO 3015
Cold Filter Plugging Point[f] (°C)	Max	-	(report in winter)	(report in winter)	-	IP 309/612
Cetane Index (-)	Min	45	40	40	35	ISO 4264
Acid number (mg KOH/g)	Max	0.5	0.5	0.5	0.5	ASTM D664
Oxidation stability (g/m^3)	Max	25	25	25	25[d]	ISO 12205
Lubricity, corrected wear scar diameter (WSD) at 60°C[h] (µm)	Max	520	520	520	520[d]	ISO 12156-1
Hydrogen sulphide (mg/kg)	Max	2.0	2.0	2.0	2.0	IP 570
Fatty acid methyl ester (FAME)[e] (% V/V)	Max	-	- [7.0]	- [7.0]	- [7.0]	ASTM D7963/IP 579
Appearance (-)	-	Clear & Bright[g]			-[c]	-

(1) 1 mm^2/s = 1 CST.
(2) Notwithstanding the limits given, the purchaser shall define the maximum sulphur content in accordance with relevant statutory limitations. See Introduction
(3) 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.
(4) 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.
(5) This requirement is applicable to fuels with a sulphur content below 500 mg/kg (0.050 mass %).

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Parameter (Unit)	Limit	RMA 10	RMB 30	RMD 80	RME 180	RMG 180	RMG 380	RMG 500	RMG 700	RMK 380	RMK 500	RMK 700	Test Method
Density at 15 °C (kg/m^3)	Max	920	960	975	991	991				1010			ISO 12185 /3675
Kinematic Viscosity at 50 °C[(a)] (mm2/s)	Max	10	30	80	180	180	380	500	700	380	500	700	ISO 3104
Water (% V/V)	Max	0.3	0.5										ISO 3733
Micro Carbon Residue (% m/m)	Max	2.5	10.0	14.0	15.0	18.0				20.0			ISO 10370
Sulphur[(b)] (% m/m)	Max	Statutory Requirements											ISO 14596 /8754 ASTM D4294
Total Sediment, aged (% m/m)	Max	0.1											ISO 10307-2
Sodium (mg/kg)	Max	50	100		50	100							IP 501/ IP 470
Ash (% m/m)	Max	0.04	0.07			0.10				0.15			ISO 6245
Vanadium (mg/kg)	Max	50	150			350				450			ISO 14597 /IP 501 /IP 470
Aluminium + Silicon (mg/kg)	Max	25	40		50	60							ISO 10478 /IP 501 /IP 470
CCAI (-)	Max	850	860			870							-
Flash point (°C)	Min	60											ISO 2719
Pour point in Summer[(d)] (°C)	Max	6		30									ISO 3016
Pour point in Winter[(d)] (°C)	Max	0		30									ISO 3016
Acid number[(c)] (mg KOH/g)	Max	2.5											ASTM D664
Used lubricating oils (ULO): Calcium and Zinc; or Calcium and Phosphorus (mg/kg)	-	The fuel shall be free from ULO. A fuel shall be considered to contain ULO when either one of the following conditions is met: calcium > 30 and zinc > 15; or calcium > 30 and phosphorus > 15											IP 501 /IP 470 /IP 500
Hydrogen sulphide (mg/kg)	Max	2.0											IP 570

(1) 1 mm^2/s = 1 CST.
(2) The purchaser shall define the maximum sulphur content in accordance with relevant statutory limitations. See Introduction. (c) See Annex E.
(3) Purchasers should confirm that this pour point is suitable for the ship's intended area of operation.