

Fuel Standard for Marine Residual Fuels

Characteristic	Unit	Limit	RF20	RF80	RF180	RD380	RF500
General Requirements			Clauses 5 to 10				
Viscosity @ 50°C (a)	mm ² /s (b)	max.	20.00	80.00	180.00	380.00	500.00
		min.	2.000 (c)	20.00	80.00	120.00	380.00
Density @ 15°C	kg/m ³	max.	955.00	991.00			1,010.00
CCAI		max.	860	870			
Sulfur	% mass	max.	Statutory requirements (d)				
Flash Point	°C	min.	60.0				
Hydrogen Sulfide	mg/kg	max.	2.00				
Acid Number	mg KOH/g	max.	2.5				
Carbon Residue, Micro (MCR)	% mass	max.	10.00	15.00		18.00	20.00
Pour Point (upper) (e)	°C	max.	6	30			
Water Content	% vol.	max.	0.30	0.50			
Ash Content	% mass	max.	0.070	0.100			0.150
Vanadium	mg/kg	max.	150	350			450
Sodium	mg/kg	max.	50	100			
Aluminum + Silicon	mg/kg	max.	40	60			
Unrefined Used lubricating Oil (ULO)	mg/kg		Ca > 30 and Zn > 15 or Ca > 30 and P > 15				
Potential Total Sediment (TSP)	% mass	max.	0.10 (f)				
Accelerated Total Sediment (TSA)	% mass	-	Report (g)				
Existent Total Sediment (TSE)	% mass	-	Report (g)				
FAME Content	% mass	-	Report (h)				
Net Heat of Combustion (LCV)	MJ/kg	-	Report (g)				

**The above information is for informational purposes only.
Clipper Oil assumes no responsibility for any errors or omissions.**

(a) Actual viscosity to be reported to the ship. For fuels with high pour point, the viscosity can be calculated provided that the kinematic viscosities at two temperatures are known

(b) 1 mm²/s = 1 cSt

(c) For fuels with viscosity in the range of 2 mm²/s to 5 mm²/s, the minimum viscosity requirement of the engine should be checked against the original equipment manufacturers' recommendations

(d) The buyer is expected to define the maximum sulphur content according to relevant statutory limitations

(e) The buyer should confirm that this pour point is suitable for the ship's intended area of operation

(f) This limit applies to 10 g og test specimen only. Failure to complete filtration of 10 g within 25 min means the fuel does not meet the specification
In such case and for information only, 5 g filtration results can be reported according to the test method

(g) The value shall be reported according to the test method given

(h) The seller shall report the FAME content according to the test method given or as per blend ratio (stating whether it is a mass or volume ratio)