U. S. Oil & Refining Co.

3001 Marshall Avenue, Tacoma, Washington, 98421 (253) 383-1651

Product Specification
ISO Marine Distillate Fuel Oil

Characteristic	Limit		Test Method			Specifications[a]	
			ISO	ASTM		ISO-F-DMA[b]	ISO-F-DMB
Viscosity @40°C, mm^2/s	max min		3104	D 445		6.000 2.000	11.00 2.000
Density @15°C, kg/m^3	max		12185	D 4052		890.0	900.0
Gravity, °API, reference only	min			D 4052		27.5	25.7
Cetane Index	min		4264	D 976		40	35
Sulfur, mass %	max		8754	D 4294		0.0015 [c]	0.50[c]
Flash Point, PMCC, °C	min		2719	D 93		60.0	60.0
Acid Number, mg KOH/g	max		D 664	D 664		0.5	0.5
Hydrogen Sulfide, mg/kg	max		IP570	D 7621		2.00	2.00
Total sediment, existent, mass %	max		10307-1	D 4870		----	0.10[d]
Oxygen stability, g/m^3	max		12205			25	-- [e]
Carbon residue, 10% vol., mass %	max					0.30	---
Carbon residue, mass %	max		10370	D 4530		---	0.30
Pour Point, °C Winter/Summer	max		3016	D 5950		-6/0	0/6[f]
Appearance	---			D 4176		Clear & bright	---[d]
Water, volume %	max		3733	D 4006		---	0.3[d]
Ash, mass %	max		6245	D 482		0.010	0.010
Lubricity, µm wsd@ 60°C	max		12156-1	D 6079		520	-----g
Distillation, °C, 90% point	min		3405	D 86		---	371

a. Products conform to ISO 8217:2010(E) listed grades.
b. ISO-F-DMA is dyed red.
c. More stringent than ISO 8217:2010(E)
d. If the sample is clear and with no visible sediment or water, the total sediment existent and water tests shall not be required
e. Appearance is not C & B therefore oxygen stability not determined.
f. The higher Pour Point limit is effective April 16 – October 17 unless requested otherwise by the purchaser.
g. Sulfur >0.050 mass%, therefore lubricity not determined.