



U. S. Oil & Refining Co.

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IFO-380 Marine Residual Fuel

<u>Characteristic</u>	<u>Limit</u>	<u>Test Method</u>		<u>Specifications</u>
		ISO	ASTM	
Density @ 15°C, kg/m ³	max	12185	D 4052	991
Gravity, °API @ 60°F	min		D 4052	11.2
Viscosity @ 50°C mm ² /s	min	3104	D 445	330
	max			380
Flash Point, °C	min	2719	D 93B	66
Pour Point, °C	max	3016	D 5950	18
Carbon Residue, mass %	max	10370	D 4530	17
Ash, mass %	max	6245	D 482	0.10
BS&W, volume %	max	3733	D 4006	1.0
Sulfur, mass %	max	8754	D 4294	3.5
Vanadium, mg/kg	max	14597	IP501	150
Aluminum + Silicon, mg/kg	max	10478	IP501	50
Sodium, mg/kg	max	IP501	IP501	30