



U. S. Oil & Refining Co.

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Vacuum Gas Oil¹

<u>Characteristic</u>	<u>ASTM Method</u>	<u>Typical Ranges</u>
Gravity, °API	D 4052	19.0 - 23.0
Distillation - °C (°F)	D 1160	
Initial Boiling Point		255 - 300 (490 - 570)
10% recovered		343 - 393 (650 - 740)
50% recovered		438 - 465 (820 - 870)
90% recovered		500 - 560 (940 - 1040)
End Point		527 - 582 (980 - 1080)
Flash Point, °C (°F)	D 93B	150-190 (300 - 374)
Pour Point, °C (°F)	D 5950	21 - 39 (70 - ~100)
Viscosity @50°C, mm ² /s	D 445	30 - 60
Sulfur, mass %	D 4294	1.3 - 1.6
Carbon, mass %	D 4530	0.3 - 0.6
BS&W, volume %	D 96	ND ² - 0.1
Aniline Point, °C (°F)	D 611	74 - 81 (165 - 178)
Asphaltenes, mass %	D 6560	ND ² - 0.2
Total Nitrogen, ppm	D 4629	1200 - 1700
Vanadium, ppm	IP 501	ND ² - 0.50
Nickel	IP 501	ND ² - 0.50
Copper	IP 501	ND ² - 0.20
Lead	IP 501	ND ² - 0.60
Sodium	IP 501	ND ² - 3.0
Iron	IP 501	0.5 - 1.0
Calcium	IP 501	ND ² - 0.5
Hydrogen Sulfide, ppm	D 5705	ND ² - 50

- 1) Typically derived from ANS crude slate
- 2) Not Detectable