

DOBA19Y

| | Whole crude | Butane and Lighter IBP - 60F | Lt. Naphtha C5 - 165F | Hvy Naphtha 165 - 330F | Kerosene 330 - 480F | Diesel 480 - 650F | Vacuum Gas Oil 650 - 1000F | Vacuum Residue 1000F+ |
|--|----------------|---------------------------------------|-----------------------------|---------------------------------|---------------------------|-------------------------|-------------------------------------|-----------------------------|
| Cut volume, % | 100.0 | 0.4 | 1.4 | 7.1 | 11.9 | 8.6 | 37.1 | 33.5 |
| API Gravity, | 28.5 | 123.0 | 86.3 | 57.4 | 40.6 | 34.1 | 27.6 | 17.7 |
| Specific Gravity (60/60F), | 0.884 | 0.556 | 0.650 | 0.749 | 0.822 | 0.855 | 0.889 | 0.949 |
| Carbon, wt % | 86.3 | 82.4 | 83.7 | 85.4 | 86.3 | 86.5 | 86.4 | 86.4 |
| Hydrogen, wt % | 13.5 | 17.6 | 16.3 | 14.6 | 13.7 | 13.4 | 13.3 | 13.2 |
| Pour point, F | 80.7 | | | (130.9) | (38.3) | 29.5 | 116.8 | 118.2 |
| Neutralization number (TAN), MG/GM | 1.390 | 0.000 | 0.001 | 0.008 | 0.059 | 0.685 | 2.498 | 1.095 |
| Sulfur, wt% | 0.069 | 0.000 | 0.000 | 0.002 | 0.012 | 0.040 | 0.063 | 0.112 |
| Viscosity at 20C/68F, cSt | 135.0 | 0.5 | 0.7 | 1.2 | 2.3 | 7.4 | 119.2 | 254,887.6 |
| Viscosity at 40C/104F, cSt | 51.6 | 0.4 | 0.6 | 0.9 | 1.7 | 4.5 | 44.0 | 27,406.4 |
| Viscosity at 50C/122F, cSt | 34.9 | 0.4 | 0.5 | 0.8 | 1.5 | 3.6 | 29.4 | 10,954.7 |
| Mercaptan sulfur, ppm | 8.0 | 0.0 | 0.3 | 1.4 | 1.9 | 1.0 | 0.1 | 0.0 |
| Nitrogen, ppm | 1,817.0 | - | - | 0.1 | 1.6 | 62.7 | 753.2 | 4,258.7 |
| CCR, wt% | 4.4 | | | | | | 0.1 | 12.2 |
| N-Heptane Insolubles (C7 Asphaltenes), wt% | 0.0 | | | | | | - | 0.1 |
| Nickel, ppm | 19.7 | | | | | | | 54.9 |
| Vanadium, ppm | 0.8 | | | | | | | 2.2 |
| Calcium, ppm | 104.0 | | | | | | | |
| Reid Vapor Pressure (RVP) Whole Crude, psi | 2.4 | | | | | | | |
| Hydrogen Sulfide (dissolved), ppm | - | | | | | | | |
| Salt content, ptb | 18.4 | | | | | | | |
| Paraffins, vol % | 27.4 | 99.9 | 88.8 | 48.6 | 38.9 | 36.4 | 31.2 | 7.6 |
| Naphthenes, vol % | 39.8 | - | 11.2 | 44.8 | 42.5 | 47.3 | 41.9 | 36.0 |
| Aromatics (FIA), vol % | 32.6 | - | - | 6.6 | 18.5 | 16.2 | 26.5 | 56.3 |
| Distillation type, TBP | | | | | | | | |
| IBP, F | 70.7 | | 61.1 | 166.9 | 330.8 | 480.7 | 652.7 | 1,001.7 |
| 5 vol%, F | 265.6 | | 69.2 | 182.3 | 338.1 | 486.9 | 673.9 | 1,017.6 |
| 10 vol%, F | 344.5 | | 73.9 | 196.9 | 345.8 | 494.2 | 694.3 | 1,035.7 |
| 20 vol%, F | 467.4 | | 83.4 | 221.2 | 360.7 | 509.8 | 730.1 | 1,073.4 |
| 30 vol%, F | 657.8 | | 99.3 | 240.9 | 375.0 | 527.4 | 762.9 | 1,113.3 |
| 40 vol%, F | 758.0 | | 105.3 | 257.8 | 389.0 | 546.9 | 794.8 | 1,155.6 |
| 50 vol%, F | 844.4 | | 111.3 | 272.6 | 402.9 | 567.5 | 826.8 | 1,200.6 |
| 60 vol%, F | 935.2 | | 129.9 | 285.9 | 416.9 | 587.8 | 859.2 | 1,248.7 |
| 70 vol%, F | 1,037.1 | | 140.0 | 298.1 | 431.2 | 606.3 | 892.4 | 1,300.5 |
| 80 vol%, F | 1,156.7 | | 149.1 | 309.4 | 446.2 | 622.7 | 926.7 | 1,356.9 |
| 90 vol%, F | 1,301.1 | | 157.4 | 320.0 | 462.3 | 637.2 | 962.5 | 1,419.4 |
| 95 vol%, F | 1,387.6 | | 161.2 | 325.0 | 470.9 | 643.8 | 981.0 | 1,455.5 |
| EP, F | 1,491.8 | | 164.6 | 329.5 | 479.1 | 649.4 | 998.1 | 1,514.9 |
| Freeze point, F | | | | (119.2) | (25.4) | 41.5 | | |
| Smoke point, mm | | | | 33.5 | 24.3 | 11.9 | | |
| Naphthalenes (D1840), vol% | | | | | 1.2 | 6.1 | | |
| Viscosity at 100C/212F, cSt | 8.6 | 0.3 | 0.4 | 0.5 | 0.8 | 1.7 | 7.1 | 423.0 |
| Viscosity at 150C/302F, cSt | 3.7 | 0.2 | 0.3 | 0.4 | 0.6 | 1.0 | 3.1 | 62.9 |
| Cetane Index 1990 (D4737), | | | | 39.6 | 37.5 | 53.5 | | |
| Cloud point, F | | | | (126.1) | (31.0) | 33.9 | | |
| Aniline pt, F | | | | | 152.7 | 175.0 | 213.5 | |