

22777 Springwoods Village Parkway,
Spring, TX 77389

HUNGO16

| | 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 | 2.4 | 4.8 | 12.9 | 12.8 | 16.1 | 30.3 | 20.6 |
| API Gravity, | 29.4 | 126.7 | 83.4 | 55.5 | 42.1 | 33.2 | 21.8 | 7.6 |
| Specific Gravity (60/60F), | 0.879 | 0.548 | 0.658 | 0.757 | 0.815 | 0.859 | 0.923 | 1.017 |
| Carbon, wt % | 86.2 | 82.3 | 83.9 | 85.6 | 86.2 | 86.5 | 86.7 | 86.2 |
| Hydrogen, wt % | 13.1 | 17.7 | 16.1 | 14.4 | 13.7 | 13.2 | 12.4 | 12.1 |
| Pour point, F | (24.7) | | | (110.5) | (70.8) | 2.6 | 94.6 | 135.4 |
| Neutralization number (TAN), MG/GM | 0.457 | 0.000 | 0.005 | 0.073 | 0.261 | 0.615 | 0.762 | 0.321 |
| Sulfur, wt% | 0.588 | 0.000 | 0.001 | 0.008 | 0.064 | 0.286 | 0.705 | 1.288 |
| Viscosity at 20C/68F, cSt | 27.4 | 0.4 | 0.6 | 0.9 | 1.9 | 7.2 | 277.5 | 1,341,437,077.7 |
| Viscosity at 40C/104F, cSt | 12.4 | 0.4 | 0.5 | 0.7 | 1.4 | 4.2 | 76.9 | 16,583,273.5 |
| Viscosity at 50C/122F, cSt | 9.0 | 0.3 | 0.4 | 0.7 | 1.2 | 3.4 | 46.3 | 2,862,410.8 |
| Mercaptan sulfur, ppm | 4.0 | 0.1 | 0.7 | 4.0 | 1.7 | 0.2 | 0.0 | 0.0 |
| Nitrogen, ppm | 2,468.3 | - | - | 0.3 | 7.8 | 76.9 | 1,179.1 | 8,690.1 |
| CCR, wt% | 5.3 | | | | | | 0.5 | 21.3 |
| N-Heptane Insolubles (C7 Asphaltenes), wt% | 1.3 | | | | | | - | 5.4 |
| Nickel, ppm | 20.4 | | | | | | | 85.2 |
| Vanadium, ppm | 16.2 | | | | | | | 67.9 |
| Calcium, ppm | 3.5 | | | | | | | |
| Reid Vapor Pressure (RVP) Whole Crude, psi | 6.8 | | | | | | | |
| Hydrogen Sulfide (dissolved), ppm | - | | | | | | | |
| Salt content, ptb | 5.7 | | | | | | | |
| Paraffins, vol % | 27.3 | 100.0 | 80.9 | 41.7 | 38.6 | 31.3 | 15.2 | 1.9 |
| Naphthenes, vol % | 33.9 | - | 19.1 | 49.3 | 37.9 | 44.7 | 39.3 | 15.1 |
| Aromatics (FIA), vol % | 38.8 | - | - | 8.9 | 23.5 | 24.1 | 45.5 | 83.0 |
| Distillation type, TBP | | | | | | | | |
| IBP, F | (86.8) | | 60.6 | 166.0 | 330.8 | 480.9 | 651.6 | 1,001.5 |
| 5 vol%, F | 125.2 | | 66.3 | 174.8 | 337.9 | 488.9 | 665.7 | 1,015.1 |
| 10 vol%, F | 204.3 | | 71.3 | 184.1 | 345.7 | 497.7 | 681.4 | 1,030.6 |
| 20 vol%, F | 328.2 | | 80.5 | 201.6 | 361.3 | 515.2 | 713.1 | 1,063.6 |
| 30 vol%, F | 447.1 | | 97.9 | 218.2 | 376.8 | 532.4 | 745.2 | 1,099.5 |
| 40 vol%, F | 555.8 | | 105.1 | 234.4 | 392.1 | 549.5 | 778.0 | 1,138.6 |
| 50 vol%, F | 659.4 | | 112.4 | 250.3 | 407.2 | 566.5 | 811.7 | 1,181.5 |
| 60 vol%, F | 764.7 | | 131.3 | 266.2 | 422.1 | 583.3 | 846.3 | 1,228.9 |
| 70 vol%, F | 878.1 | | 140.6 | 282.1 | 436.9 | 600.0 | 882.1 | 1,281.5 |
| 80 vol%, F | 1,008.3 | | 149.3 | 298.0 | 451.4 | 616.7 | 919.1 | 1,340.7 |
| 90 vol%, F | 1,187.8 | | 157.4 | 314.0 | 465.8 | 633.4 | 958.1 | 1,408.7 |
| 95 vol%, F | 1,314.2 | | 161.2 | 322.0 | 472.9 | 641.7 | 978.6 | 1,448.6 |
| EP, F | 1,474.5 | | 164.6 | 329.2 | 479.3 | 649.2 | 997.8 | 1,511.3 |
| Freeze point, F | | | | (97.7) | (54.4) | 16.1 | | |
| Smoke point, mm | | | | 28.9 | 21.1 | 13.6 | | |
| Naphthalenes (D1840), vol% | | | | | 1.5 | 9.7 | | |
| Viscosity at 100C/212F, cSt | 2.9 | 0.3 | 0.3 | 0.4 | 0.7 | 1.5 | 8.3 | 7,460.2 |
| Viscosity at 150C/302F, cSt | 1.5 | 0.2 | 0.2 | 0.3 | 0.5 | 0.9 | 3.1 | 299.5 |
| Cetane Index 1990 (D4737), | | | | 29.8 | 41.2 | 51.6 | | |
| Cloud point, F | | | | (107.4) | (67.2) | 6.7 | | |
| Aniline pt, F | | | | | 134.9 | 156.2 | 177.1 | |