

22777 Springwoods Village Parkway,
Spring, TX 77389

HOOPS16F

	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	2.3	6.7	17.6	14.7	16.6	27.2	14.9
API Gravity,	35.2	125.2	86.5	59.1	44.2	32.6	21.4	11.1
Specific Gravity (60/60F),	0.849	0.551	0.649	0.742	0.805	0.862	0.926	0.992
Carbon, wt %	85.6	82.4	83.6	85.4	85.9	86.1	85.9	85.4
Hydrogen, wt %	13.3	17.6	16.4	14.6	14.0	13.1	12.4	11.8
Pour point, F	(46.3)			(110.4)	(66.7)	0.3	86.2	125.8
Neutralization number (TAN), MG/GM	0.909	0.000	0.000	0.004	0.207	1.318	1.850	0.618
Sulfur, wt%	1.149	0.000	0.002	0.020	0.118	0.760	1.584	3.047
Viscosity at 20C/68F, cSt	6.7	0.4	0.6	0.9	1.9	7.1	274.0	95,711,611.0
Viscosity at 40C/104F, cSt	4.6	0.4	0.5	0.7	1.4	4.2	77.0	1,820,445.5
Viscosity at 50C/122F, cSt	3.9	0.3	0.4	0.6	1.2	3.4	46.6	377,036.7
Mercaptan sulfur, ppm	0.6	0.8	8.1	45.3	32.8	20.2	3.2	0.1
Nitrogen, ppm	968.1	-	-	0.1	1.8	47.6	782.4	4,176.0
CCR, wt%	3.2						0.4	17.7
N-Heptane Insolubles (C7 Asphaltenes), wt%	0.3						-	2.0
Nickel, ppm	8.2							47.0
Vanadium, ppm	17.2							98.8
Calcium, ppm	5.9							
Reid Vapor Pressure (RVP) Whole Crude, psi	8.8							
Hydrogen Sulfide (dissolved), ppm	-							
Salt content, ptb	2.6							
Paraffins, vol %	35.5	100.0	91.9	56.6	42.8	26.6	19.0	2.3
Naphthenes, vol %	31.4	-	8.1	33.2	40.8	47.5	35.4	13.4
Aromatics (FIA), vol %	33.1	-	-	10.2	16.4	26.0	45.6	84.3
Distillation type, TBP								
IBP, F	(57.6)		60.8	166.0	330.7	480.8	651.4	1,001.3
5 vol%, F	105.7		68.1	174.4	337.3	488.5	664.4	1,013.5
10 vol%, F	175.7		72.7	183.4	344.7	496.9	678.9	1,027.4
20 vol%, F	267.2		81.9	200.3	359.6	513.8	708.5	1,056.9
30 vol%, F	364.3		98.8	216.3	374.6	530.6	738.9	1,088.9
40 vol%, F	467.0		105.6	232.0	389.7	547.5	770.2	1,124.0
50 vol%, F	568.5		112.4	247.6	404.8	564.3	802.9	1,162.9
60 vol%, F	672.2		131.5	263.3	419.9	581.2	837.2	1,206.8
70 vol%, F	784.6		140.9	279.3	435.0	598.2	873.7	1,257.4
80 vol%, F	917.4		149.5	295.8	450.0	615.3	912.5	1,317.1
90 vol%, F	1,098.5		157.5	312.7	465.0	632.6	954.2	1,390.5
95 vol%, F	1,238.4		161.3	321.3	472.5	641.3	976.5	1,436.0
EP, F	1,453.8		164.6	329.1	479.3	649.1	997.6	1,504.6
Freeze point, F				(99.2)	(54.7)	14.6		
Smoke point, mm				29.9	22.5	13.8		
Naphthalenes (D1840), vol%					1.0	8.6		
Viscosity at 100C/212F, cSt	2.1	0.3	0.3	0.4	0.7	1.5	8.4	1,923.9
Viscosity at 150C/302F, cSt	1.3	0.2	0.2	0.3	0.5	0.9	3.2	116.2
Cetane Index 1990 (D4737),				36.2	45.0	50.0		
Cloud point, F				(106.6)	(62.4)	4.0		
Aniline pt, F					140.7	155.4	177.7	