

22777 Springwoods Village Parkway,
Spring, TX 77389

UPZAK17Y

	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	3.1	7.0	15.2	15.1	16.3	26.7	16.6
API Gravity,	33.9	119.7	88.8	59.7	44.9	34.9	22.5	5.7
Specific Gravity (60/60F),	0.855	0.563	0.642	0.740	0.802	0.850	0.919	1.031
Carbon, wt %	85.3	82.5	83.6	85.5	85.9	86.0	85.5	84.6
Hydrogen, wt %	13.2	17.5	16.4	14.5	13.9	13.3	12.3	11.7
Pour point, F	(38.2)			(118.6)	(59.4)	5.7	87.6	117.3
Neutralization number (TAN), MG/GM	0.097	0.000	0.002	0.021	0.054	0.084	0.147	0.151
Sulfur, wt%	1.744	0.000	0.016	0.089	0.244	0.687	2.118	4.857
Viscosity at 20C/68F, cSt	9.6	0.5	0.7	1.0	1.9	5.7	143.2	990,700,742.1
Viscosity at 40C/104F, cSt	5.8	0.4	0.5	0.8	1.4	3.6	46.4	7,351,772.3
Viscosity at 50C/122F, cSt	4.7	0.4	0.5	0.7	1.2	2.9	29.6	1,089,965.0
Mercaptan sulfur, ppm	23.0	0.0	0.0	0.2	1.8	1.5	0.1	0.0
Nitrogen, ppm	950.4	-	-	0.0	1.2	49.7	782.8	3,572.3
CCR, wt%	4.7						0.7	22.3
N-Heptane Insolubles (C7 Asphaltenes), wt%	1.4						-	7.0
Nickel, ppm	9.6							47.7
Vanadium, ppm	10.6							52.6
Calcium, ppm	0.5							
Reid Vapor Pressure (RVP) Whole Crude, psi	8.5							
Hydrogen Sulfide (dissolved), ppm	-							
Salt content, ptb	-							
Paraffins, vol %	40.1	100.0	93.3	65.3	51.1	36.2	22.8	2.8
Naphthenes, vol %	22.9	-	6.7	20.3	25.4	36.8	29.6	12.0
Aromatics (FIA), vol %	36.9	-	-	14.4	23.5	27.0	47.7	85.2
Distillation type, TBP								
IBP, F	(46.1)		60.6	166.0	330.8	480.8	651.5	1,001.4
5 vol%, F	95.8		65.5	174.4	337.5	488.2	664.7	1,014.5
10 vol%, F	163.5		70.6	183.6	345.1	496.4	679.5	1,029.4
20 vol%, F	275.4		80.2	201.3	360.1	513.0	709.7	1,060.8
30 vol%, F	376.2		97.4	218.4	375.0	529.6	740.8	1,094.4
40 vol%, F	475.6		103.4	235.2	390.0	546.3	772.8	1,131.0
50 vol%, F	577.8		109.4	251.6	404.9	563.2	806.0	1,171.0
60 vol%, F	685.9		126.3	267.7	419.9	580.2	840.5	1,215.6
70 vol%, F	804.7		136.8	283.6	434.8	597.4	876.8	1,266.3
80 vol%, F	943.7		146.6	299.2	449.8	614.7	915.0	1,325.2
90 vol%, F	1,129.4		156.0	314.7	464.9	632.3	955.9	1,396.7
95 vol%, F	1,265.1		160.5	322.3	472.4	641.1	977.5	1,440.3
EP, F	1,461.1		164.6	329.2	479.2	649.1	997.7	1,506.6
Freeze point, F				(106.8)	(47.7)	17.7		
Smoke point, mm				30.6	23.8	15.5		
Naphthalenes (D1840), vol%					1.7	8.3		
Viscosity at 100C/212F, cSt	2.2	0.3	0.4	0.5	0.8	1.4	6.4	2,240.9
Viscosity at 150C/302F, cSt	1.3	0.2	0.3	0.3	0.5	0.9	2.6	99.9
Cetane Index 1990 (D4737),				38.7	46.6	55.1		
Cloud point, F				(114.4)	(55.1)	10.2		
Aniline pt, F					139.5	160.6	178.5	