

22777 Springwoods Village Parkway,
Spring, TX 77389

USAN16Y

	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	1.8	4.5	14.3	16.7	21.5	29.2	11.9
API Gravity,	29.0	124.9	81.5	53.0	37.9	28.3	17.3	8.1
Specific Gravity (60/60F),	0.882	0.552	0.664	0.767	0.835	0.885	0.951	1.014
Carbon, wt %	86.6	82.4	83.9	85.8	86.4	87.0	87.4	86.6
Hydrogen, wt %	12.9	17.6	16.1	14.2	13.6	12.7	11.9	11.9
Pour point, F	(107.3)			(149.7)	(87.2)	(8.8)	70.3	143.1
Neutralization number (TAN), MG/GM	1.525	0.000	0.003	0.066	0.471	1.700	2.848	1.256
Sulfur, wt%	0.273	0.000	0.000	0.009	0.053	0.202	0.380	0.724
Viscosity at 20C/68F, cSt	13.8	0.4	0.6	0.9	2.1	9.5	1,641.5	8,461,874,968.3
Viscosity at 40C/104F, cSt	7.5	0.4	0.5	0.7	1.5	5.1	265.2	48,237,764.9
Viscosity at 50C/122F, cSt	5.8	0.3	0.4	0.7	1.3	4.0	131.1	6,318,507.1
Mercaptan sulfur, ppm	0.6	0.0	0.0	1.1	2.7	0.2	0.0	0.0
Nitrogen, ppm	2,262.0	-	-	0.8	17.2	175.5	1,961.0	11,635.6
CCR, wt%	3.1						0.3	21.6
N-Heptane Insolubles (C7 Asphaltenes), wt%	0.0						-	0.3
Nickel, ppm	14.9							108.4
Vanadium, ppm	3.3							24.2
Calcium, ppm	3.4							
Reid Vapor Pressure (RVP) Whole Crude, psi	6.6							
Hydrogen Sulfide (dissolved), ppm	-							
Salt content, ptb	5.1							
Paraffins, vol %	21.7	100.0	82.3	31.7	25.8	14.7	7.0	0.9
Naphthenes, vol %	44.1	-	17.7	57.3	55.4	57.5	42.6	13.3
Aromatics (FIA), vol %	34.3	-	-	11.0	18.8	27.8	50.5	85.8
Distillation type, TBP								
IBP, F	(33.3)		60.8	166.1	330.9	480.8	651.3	1,001.2
5 vol%, F	143.8		68.1	175.6	338.8	488.3	662.7	1,012.1
10 vol%, F	214.2		72.3	185.5	347.5	496.5	675.7	1,024.8
20 vol%, F	323.7		80.6	203.9	364.4	512.9	702.5	1,051.9
30 vol%, F	420.4		98.3	221.1	380.6	529.3	730.6	1,081.7
40 vol%, F	500.4		107.4	237.2	396.3	545.6	760.2	1,114.8
50 vol%, F	577.0		125.5	252.9	411.4	562.2	791.7	1,152.2
60 vol%, F	659.8		134.5	268.3	425.9	579.0	825.4	1,195.0
70 vol%, F	754.5		142.9	283.7	440.0	596.2	861.8	1,245.0
80 vol%, F	870.8		150.7	299.2	453.6	613.7	901.6	1,304.9
90 vol%, F	1,041.2		158.1	314.7	466.9	631.6	946.6	1,380.7
95 vol%, F	1,186.3		161.5	322.4	473.5	640.7	972.1	1,429.0
EP, F	1,438.0		164.7	329.2	479.4	649.1	997.1	1,501.0
Freeze point, F				(139.0)	(75.0)	4.4		
Smoke point, mm				28.2	19.3	11.5		
Naphthalenes (D1840), vol%					2.2	9.3		
Viscosity at 100C/212F, cSt	2.3	0.3	0.3	0.4	0.7	1.6	13.3	7,764.2
Viscosity at 150C/302F, cSt	1.3	0.2	0.2	0.3	0.5	0.9	4.0	243.3
Cetane Index 1990 (D4737),				25.7	33.8	40.8		
Cloud point, F				(145.4)	(82.7)	(3.7)		
Aniline pt, F					129.6	143.6	163.1	