

22777 Springwoods Village Parkway,  
Spring, TX 77389

**TNOVA14**

	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	1.4	5.7	15.7	14.1	17.2	29.5	16.4
API Gravity,	34.2	120.4	82.3	56.0	43.6	35.4	24.9	12.3
Specific Gravity (60/60F),	0.854	0.562	0.662	0.755	0.808	0.848	0.905	0.984
Carbon, wt %	86.0	82.5	83.8	85.9	85.9	86.3	86.4	86.1
Hydrogen, wt %	13.3	17.5	16.2	14.1	14.0	13.5	12.8	12.1
Pour point, F	50.9			(132.7)	(60.3)	18.6	104.9	113.2
Neutralization number (TAN), MG/GM	0.027	0.000	0.000	0.004	0.011	0.020	0.045	0.037
Sulfur, wt%	0.525	-	0.000	0.003	0.033	0.234	0.692	1.389
Viscosity at 20C/68F, cSt	14.1	0.4	0.6	0.9	1.8	5.9	130.3	1,568,601.3
Viscosity at 40C/104F, cSt	6.3	0.4	0.5	0.7	1.3	3.6	44.1	84,362.2
Viscosity at 50C/122F, cSt	4.6	0.3	0.4	0.6	1.1	3.0	28.6	26,094.1
Mercaptan sulfur, ppm	8.0	0.0	0.0	0.2	3.0	2.7	0.2	0.0
Nitrogen, ppm	1,308.6	-	-	0.0	1.1	66.2	1,059.6	5,089.6
CCR, wt%	2.4						0.3	12.2
N-Heptane Insolubles (C7 Asphaltenes), wt%	0.1						-	0.3
Nickel, ppm	1.5							7.7
Vanadium, ppm	0.5							2.6
Calcium, ppm	0.7							
Reid Vapor Pressure (RVP) Whole Crude, psi	5.0							
Hydrogen Sulfide (dissolved), ppm	-							
Salt content, ptb	3.5							
Paraffins, vol %	34.9	100.0	84.2	49.9	45.5	38.8	22.5	2.9
Naphthenes, vol %	32.7	-	15.8	34.3	36.8	41.2	41.3	15.0
Aromatics (FIA), vol %	32.4	-	-	15.9	17.7	20.0	36.2	82.1
Distillation type, TBP								
IBP, F	17.8		61.0	165.9	330.8	480.9	651.5	1,001.3
5 vol%, F	138.5		69.2	173.7	337.6	488.8	664.7	1,012.8
10 vol%, F	195.9		76.3	182.2	345.1	497.5	679.6	1,026.1
20 vol%, F	299.9		97.1	198.7	360.3	514.9	710.0	1,053.8
30 vol%, F	407.3		103.6	214.9	375.5	532.0	741.2	1,083.7
40 vol%, F	511.4		110.2	231.0	390.7	548.9	773.5	1,116.4
50 vol%, F	609.8		127.4	247.3	405.8	565.8	807.0	1,152.5
60 vol%, F	710.2		136.2	263.6	420.9	582.6	841.8	1,193.5
70 vol%, F	820.7		144.1	280.0	435.9	599.3	878.0	1,241.3
80 vol%, F	947.7		151.4	296.6	450.7	616.1	916.1	1,299.5
90 vol%, F	1,113.4		158.4	313.2	465.4	633.0	956.5	1,375.3
95 vol%, F	1,239.0		161.7	321.6	472.7	641.5	977.8	1,425.2
EP, F	1,449.2		164.7	329.2	479.3	649.1	997.7	1,499.4
Freeze point, F				(120.8)	(48.0)	29.9		
Smoke point, mm				25.5	19.4	14.4		
Naphthalenes (D1840), vol%					2.5	7.5		
Viscosity at 100C/212F, cSt	1.6	0.3	0.3	0.4	0.7	1.4	6.4	477.3
Viscosity at 150C/302F, cSt	0.8	0.2	0.2	0.3	0.5	0.9	2.7	53.1
Cetane Index 1990 (D4737),				30.0	44.0	56.7		
Cloud point, F				(128.1)	(54.6)	23.6		
Aniline pt, F					136.4	160.6	191.4	