

22777 Springwoods Village Parkway,  
Spring, TX 77389

**JOTUN16F**

	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	3.4	8.6	20.5	15.6	18.2	25.2	8.4
API Gravity,	41.1	127.3	85.6	57.1	44.5	35.5	27.1	13.3
Specific Gravity (60/60F),	0.820	0.547	0.652	0.750	0.804	0.847	0.892	0.977
Carbon, wt %	86.0	82.5	83.7	85.8	85.9	86.5	86.5	86.6
Hydrogen, wt %	13.8	17.5	16.3	14.2	14.1	13.4	13.1	12.6
Pour point, F	(62.4)			(96.5)	(53.4)	16.1	95.3	78.2
Neutralization number (TAN), MG/GM	0.091	0.000	0.000	0.002	0.006	0.041	0.155	0.389
Sulfur, wt%	0.169	0.000	0.000	0.001	0.006	0.081	0.272	0.771
Viscosity at 20C/68F, cSt	4.2	0.5	0.6	0.9	1.8	6.0	91.1	752,359.1
Viscosity at 40C/104F, cSt	2.8	0.4	0.5	0.7	1.4	3.7	33.3	50,586.8
Viscosity at 50C/122F, cSt	2.4	0.4	0.5	0.7	1.2	3.0	22.2	17,020.3
Mercaptan sulfur, ppm	3.0	0.0	0.2	0.8	2.0	1.3	0.2	0.0
Nitrogen, ppm	548.8	-	-	0.0	0.2	14.9	456.5	4,170.4
CCR, wt%	1.5						0.0	14.7
N-Heptane Insolubles (C7 Asphaltenes), wt%	0.1						-	1.0
Nickel, ppm	0.6							5.6
Vanadium, ppm	1.5							15.3
Calcium, ppm	2.9							
Reid Vapor Pressure (RVP) Whole Crude, psi	10.1							
Hydrogen Sulfide (dissolved), ppm	-							
Salt content, ptb	1.6							
Paraffins, vol %	43.5	100.0	88.6	47.6	47.9	37.5	25.5	4.0
Naphthenes, vol %	35.2	-	11.4	38.0	36.1	42.4	46.1	25.3
Aromatics (FIA), vol %	21.3	-	-	14.4	16.0	20.1	28.5	70.7
Distillation type, TBP								
IBP, F	(77.2)		60.7	165.9	330.7	480.8	651.3	1,001.1
5 vol%, F	82.2		66.8	173.3	337.4	488.4	662.7	1,010.8
10 vol%, F	148.0		72.6	181.4	344.8	496.8	675.5	1,022.0
20 vol%, F	226.1		83.4	196.9	360.0	513.5	701.8	1,046.4
30 vol%, F	307.5		100.4	212.0	375.3	530.0	728.9	1,073.4
40 vol%, F	403.2		107.3	227.2	390.7	546.6	757.2	1,104.0
50 vol%, F	497.4		123.7	242.8	406.0	563.2	787.2	1,139.4
60 vol%, F	588.8		133.2	258.8	421.1	580.0	819.6	1,181.1
70 vol%, F	687.2		142.0	275.5	436.0	597.0	855.4	1,231.5
80 vol%, F	800.1		150.1	293.0	450.8	614.3	896.0	1,293.9
90 vol%, F	962.9		157.8	311.1	465.4	632.0	943.2	1,374.4
95 vol%, F	1,105.9		161.4	320.5	472.7	641.0	970.1	1,425.7
EP, F	1,415.2		164.6	329.0	479.3	649.1	996.8	1,500.2
Freeze point, F				(83.3)	(39.5)	28.3		
Smoke point, mm				29.7	22.3	13.6		
Naphthalenes (D1840), vol%					2.9	8.4		
Viscosity at 100C/212F, cSt	1.2	0.3	0.3	0.4	0.7	1.4	5.5	401.9
Viscosity at 150C/302F, cSt	0.8	0.2	0.3	0.3	0.5	0.9	2.4	50.0
Cetane Index 1990 (D4737),				30.7	45.8	56.5		
Cloud point, F				(93.5)	(48.8)	20.6		
Aniline pt, F					142.6	168.2	204.8	