

HAMACA - SUMMARY OF MAJOR CUTS

	Whole Crude	Light Naphtha	Medium Naphtha	Heavy Naphtha	Kero	Atm Gas Oil	Light VGO	Heavy VGO	Vacuum Resid	Atm Resid
TBP Temp At Start, °C	Start	10	80	150	200	260	340	450	570	340
TBP Temp At End, °C	End	80	150	200	260	340	450	570	End	End
TBP Temp At Start, °F	Start	55	175	300	400	500	650	850	1050	650
TBP Temp At End, °F	End	175	300	400	500	650	850	1050	End	End
Yield at Start, vol%		2.0	5.9	12.9	19.9	30.1	47.8	67.9	79.1	47.8
Yield at End, vol%		5.9	12.9	19.9	30.1	47.8	67.9	79.1	100.0	100.0
Yield of Cut (wt% of Crude)		2.9	5.9	6.3	9.7	17.1	20.5	11.7	24.8	57.0
Yield of Cut (vol% of Crude)		3.9	7.0	7.0	10.3	17.7	20.1	11.2	20.9	52.2
Gravity, °API	26.0	85.0	54.8	44.7	35.8	31.0	23.2	19.7	1.0	12.8
Specific Gravity	0.8984	0.6536	0.7597	0.8031	0.8458	0.8708	0.9146	0.9359	1.0682	0.9807
Sulfur, wt%	1.55	0.00	0.00	0.00	0.01	0.20	1.31	1.11	4.50	2.66
Mercaptan Sulfur, ppm		0	1	2	0	0	1	1		
Nitrogen, ppm	2474	0	0	1	1	50	563	910	9031	4327
Hydrogen, wt%	14.2	16.4	14.5	18.7	17.9	17.0	15.5	13.4	8.7	12.1
Viscosity @ 40 °C (104 °F), cSt	11.09			0.912	1.73	5.26	35.9	142	#####	544
Viscosity @ 50 °C (122 °F), cSt	9.22			0.821	1.40	4.13	22.9	88.2	8.45E+08	394
Viscosity @ 100 °C (212 °F), cSt	4.56			0.545	0.648	1.72	4.94	17.2	1.21E+05	119
Viscosity @ 135 °C (275 °F), cSt	3.23			0.443	0.452	1.14	2.54	8.38	7210	66.9
Freeze Point, °C			-82.000	-69.000	-55.000	-31.000				
Freeze Point, °F			-115	-92	-67	-23				
Pour Point, °C	6		-92	-78	-64	-39	-9	19	144	42
Pour Point, °F	43		-133	-108	-84	-38	15	66	292	108
Smoke Point, mm (ASTM)			30	24	20	16				
Aniline Point, °C			43	55	54	68	78	93		
Aniline Point, °F			109	131	130	155	173	199		
Total Acid Number, mg KOH/g	0.7	0.0	0.0	0.0	0.0	0.2	1.2	0.8		
Cetane Index, ASTM D976				31	38	46				
Diesel Index			60	58	47	48	40	39		
Characterization Factor (K Factor)	11.8	12.9	11.7	11.6	11.5	11.6	11.6	11.9	11.4	11.7
Research Octane Number, Clear		64.9	54.4	50.2						
Motor Octane Number, Clear		64.1	52.9							
Paraffins, vol%		94.3	47.6	30.4	28.3	28.3	14.6			
Naphthenes, vol%		5.7	42.8	58.0	52.7	43.5	46.3			
Aromatics, vol%		0.0	9.6	11.6	18.8	27.3	35.1			
Thiophenes, vol%				0.0	0.1	0.9	3.9			
Molecular Weight	266	103	115	142	171	223	306	441	1294	420
Gross Heating Value, MM BTU/bbl	6.04	4.79	5.37	5.60	5.81	5.94	6.11	6.23	6.59	6.36
Gross Heating Value, kcal/kg	10680	11610	11210	11060	10900	10810	10600	10580	9780	10290
Gross Heating Value, MJ/kg	44.7	48.6	46.9	46.3	45.6	45.2	44.4	44.3	40.9	43.1
Heptane Asphaltenes, wt%	6.4								25.8	11.2
Micro Carbon Residue, wt%	7.3								29.4	12.8
Ramsbottom Carbon, wt%	7.1								28.6	12.5
Vanadium, ppm	152								613	267
Nickel, ppm	42								170	74
Iron, ppm	13								51	22

HAMACA - DISTILLATION SUMMARY

		Whole Crude	Light Naphtha	Medium Naphtha	Heavy Naphtha	Kero	Atm Gas Oil	Light VGO	Heavy VGO	Vacuum Resid	Atm Resid
TBP Temp At Start, °C			10	80	150	200	260	340	450	570	340
TBP Temp At End, °C			80	150	200	260	340	450	570	End	End
TBP Temp At Start, °F			55	175	300	400	500	650	850	1050	650
TBP Temp At End, °F			175	300	400	500	650	850	1050	End	End
Yield at Start, vol%			2.0	5.9	12.9	19.9	30.1	47.8	67.9	79.1	47.8
Yield at End, vol%			5.9	12.9	19.9	30.1	47.8	67.9	79.1	100.0	100.0
Yield of Cut (wt% of Crude)			2.9	5.9	6.3	9.7	17.1	20.5	11.7	24.8	57.0
Yield of Cut (vol% of Crude)			3.9	7.0	7.0	10.3	17.7	20.1	11.2	20.9	52.2
TBP Distillation, vol%	°C Start		10	80	150	200	260	340	450	570	340
	°C 5%		23	81	152	207	264	349	458	588	357
	°C 10%		28	90	156	210	268	354	463	608	371
	°C 30%		36	99	166	222	286	374	482	698	431
	°C 50%		59	118	178	234	304	394	492	806	493
	°C 70%		64	136	193	245	321	421	502	944	676
	°C 90%		70	146	201	255	336	444	553	1138	987
	°C 95%		71	151	203	257	339	451	566	1258	1171
	°C End		80	160	200	260	340	460	580	End	End
TBP Distillation, vol%	°F Start		50	175	300	400	500	650	850	1050	650
	°F 5%		74	177	306	404	507	661	857	1091	674
	°F 10%		82	194	312	410	515	670	866	1127	700
	°F 30%		96	210	331	432	547	706	900	1289	808
	°F 50%		139	245	353	453	579	742	917	1483	920
	°F 70%		148	277	380	473	609	789	936	1732	1249
	°F 90%		158	295	394	491	636	832	1027	2081	1808
	°F 95%		160	304	397	495	643	844	1050	2296	2140
	°F End		175	320	400	500	650	860	1070	End	End