



# Forties Blend

SOURCE OF SAMPLE		CRUDE DATA				ASSAY SUMMARY-TBP DATA					
Reference	M07FRT3W	Gravity	40.3			Yield on Crude		%wt	%vol		
Crude Name	FORTIES BLEND	Light Hydrocarbon Analysis				Gas to C4 (corrected)		2.86	4.17		
Origin	United Kingdom					Light Dist. to 149 °C (API)		23.75	26.93		
Sample Date	04 Jul 2007	H2S*	ppm	<5		Kerosine 149 - 232 °C		15.26	15.72		
Comments		Methane	%wt	-		Gas oil 232 - 342 °C		19.99	19.40		
		Ethane	%wt	0.02		Residue above 342 °C		38.14	33.78		
		Propane	%wt	0.58		Gas to C4 (corrected)		2.86	4.17		
		Isobutane	%wt	0.45		Total to 95 °C (API)		14.04	17.55		
		n-Butane	%wt	1.80		149 °C		26.60	31.10		
		Total C1 - C4		2.86		175 °C		31.78	36.54		
		Isopentane		%wt 1.28		232 °C		41.86	46.82		
		n-Pentane		%wt 1.87		342 °C		61.86	66.22		
						369 °C		66.13	70.24		
						509 °C		84.34	86.85		
						550 °C		88.05	90.13		
		* Dissolved in Liquid				Volume of expansion of 0.55 per cent vol on crude distributed across whole distillation					
TBP cut point °C	API	Crude	C5- 95	95-175	C5-149	149-232	232-342	342-369	369-509	509-550	550-585
Yield on crude	%wt	100	11.18	17.75	23.75	15.26	19.99	4.28	18.21	3.70	2.61
Yield on crude	%vol	100	13.38	18.99	26.93	15.72	19.40	4.01	16.61	3.28	2.27
Density at 15 °C	kg/litre	0.8232	0.6841	0.7651	0.7219	0.7946	0.8436	0.8725	0.8973	0.9252	0.9410
Sulphur	%wt	0.56	0.000	0.006	0.001	0.034	0.30	0.66	0.87	1.29	1.53
Mercaptan Sulphur	%wt	-	0.0005	0.0004	0.0004	0.0004	-	-	-	-	-
Viscosity at 20 °C	cSt	-	-	-	-	-	-	-	-	-	-
30 °C		3.29	-	-	-	-	-	-	-	-	-
40 °C		2.73	-	-	-	1.09	-	-	-	-	-
50 °C		2.29	-	-	-	-	2.66	7.02	-	-	-
60 °C		-	-	-	-	0.87	-	-	17.65	94.7	205.2
100 °C		-	-	-	-	-	1.28	2.51	5.96	19.8	34.5
Cloud point	°C	-	-	-	-	-	-14	14	-	-	-
Pour point	°C	-9	-	-	-	-	-14	13	33	-	-
Wax	%wt	-	-	-	-	-	5.05	17.75	19.35	17.00	16.35
Total nitrogen	ppm wt	-	-	-	-	-	41	213	751	1790	2361
Basic nitrogen	ppm wt	-	-	-	-	-	-	-	224	513	660
Acidity	mgKOH/g	0.093	0.003	-	0.006	0.034	0.099	0.147	0.171	0.177	0.169
Carbon residue	%wt	1.56	-	-	-	-	-	-	0.02	0.53	1.57
Asphaltenes	%wt	0.16	-	-	-	-	-	-	-	-	-
Vanadium	ppm wt	6.0	-	-	-	-	-	-	-	-	-
Nickel	ppm wt	2.0	-	-	-	-	-	-	-	-	-
Iron	ppm wt	1.7	-	-	-	-	-	-	-	-	-
Aromatics	%vol	-	-	-	-	17.41	22.39	27.75	-	-	-
Smoke point	mm	-	-	-	-	26.62	18.35	-	-	-	-
Freezing point	°C	-	-	-	-	-57.3	-10.2	-	-	-	-
Aniline point	°C	-	-	-	-	-	-	81.5	92.4	101.1	103.3
Cetane Index ASTM D4737-90		-	-	-	-	42.8	54.5	64.3	-	-	-
Refractive index at 70 °C		-	-	-	-	1.4200	1.4502	1.4651	1.4780	1.4936	-
Research Octane Number		-	67.1	52.3	61.9	-	-	-	-	-	-
Paraffins	%wt	-	72.5	41.1	58.3	-	-	-	-	-	-
Naphthenes	%wt	-	22.9	42.2	29.3	-	-	-	-	-	-
Aromatics	%wt	-	4.5	16.7	12.4	-	25.2	-	-	-	-
n-Paraffins	%wt	-	32.5	16.9	27.9	-	-	-	-	-	-
Naphthalenes	%vol	-	-	-	-	1.01	7.75	-	-	-	-



## Residue Cuts

		RESIDUES			
TBP Cut point (API)	°C	369	509	550	585
Yield on crude oil	%wt	33.87	15.66	11.95	9.34
Yield on crude oil	%vol	29.76	13.15	9.87	7.60
Density at 15C	kg/litre	0.9316	0.9749	0.9914	1.0064
Sulphur	%wt	1.39	1.99	2.21	2.40
Viscosity at					
50C	cSt	145	-	-	-
60C	cSt	86.6	-	-	-
80C	cSt	37.1	-	-	-
100C	cSt	19.1	150	333	732
120C	cSt	-	65.9	131	259
150C	cSt	-	25.6	45.0	78.2
Pour point	°C	36	58	65	71
Wax content	%wt	16.75	13.75	12.75	11.75
Total nitrogen	ppm wt	2147	3770	4383	4948
Basic nitrogen	ppm wt	580	995	1144	1279
Acidity (Assay)	mgKOH/g	0.15	0.13	0.12	0.10
Carbon residue	%wt	4.6	9.9	12.8	16.0
Asphaltenes	%wt	0.5	1.0	1.4	1.7
Vanadium	ppm wt	18	38	50	63
Nickel	ppm wt	6	13	17	21
Iron	ppm wt	5	11	14	18

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