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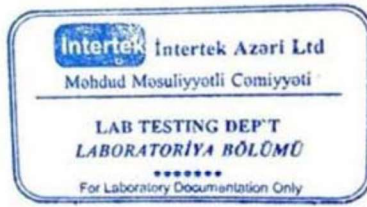


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HEAVY VAC. GAS (800-1050 degF)

Yield, vol%	18.35	18.06	14.00	19.08	18.13
Gravity, API	22.78	21.72	20.55	21.55	22.22
Specific gravity	0.9166	0.9230	0.9302	0.9240	0.9200
Sulphur, wt%	1.68	1.72	1.39	1.4	1.68
Nitrogen, ppm	1496	2450	2500	1260	1944
Pour point, F	102	108	118	108	106
Pour point, C	39	42	48	42	41
Acid, mg KOH/g	0.04	0.30	0.1	0.14	0.16
Aniline, C	101	89	96	85	95
Aniline, F	214	192	205	185	203
Hydrogen, wt%	12.6	12.6	12.3	12.8	12.6
Viscosity at 50 deg C, cSt	70.85	62.92	149.33	53.92	68.82
Viscosity at 100 deg C, cSt	12.17	11.50	19.50	12.42	12.06
Characterization factor,K	12	12	12	12	12.00

VACUUM RESIDUUM, (1050+)

Yield, vol%	22.13	23.98	8.2	10.85	22.33
Gravity, API	10.14	10.85	10.10	9.35	10.44
Specific gravity	0.9985	0.9935	0.9987	1.0040	0.9964
Sulphur, wt%	2.83	2.85	2.2	2.04	2.80
MCR, wt%	12.23	11.68	16.35	16.28	12.19
Asphaltenes C7, wt%	4.50	3.76	7.8	2.61	4.20
Nitrogen, ppm	1796	2750	2800	1560	2244
Nickel, ppm	54	67	59	27	59
Vanadium,ppm	186	231	84	51	200
Pour point, F	118	111	131	107.6	115
Pour point, C	48	44	55	42	46
Viscosity at 50 deg C, cSt	39668	30055	109707	25580	36740
Viscosity at 100 deg C, cSt	573.2	485.5	1057	440.5	542.5
Viscosity at 135 deg C, cSt	99.56	88.02	157.3	68.94	95.05
Characterization factor,K	12.1	12	12	12	12.05
Cutter in Fuel oil , vol%	27.87	30.83	35.00	18.78	29.15
Fuel oil yield, vol%	36.29	48.97	61.29	20.86	42.24



2. TESTING RESULTS

	URALS	REBCO	Orenburgneft Sorochinskaya	Zagorskaya	Required	Theoretical
RUSSIAN BLEND CRUDE OIL ASSAY	0.5	0.45	0.025	0.025		vol %
Gravity API	34.66	35.70	39.58	40.15	35.40	35.40
Specific gravity	0.8511	0.8458	0.8267	0.8240	0.8474	0.8474
Sulphur, wt%	1.37	1.39	0.93	0.95	1.36	1.36
Water content, % vol	0.01	0.02	0.02	0.02	0.02	0.02
Sediments, w%	0.02	0.015	0.01	0.01	0.02	0.02
Nitrogen, ppm	1411	1420	1039	1200	1400	1400
Pour point, F	0	43	-33	-33	-33	-33
Pour point, C	-18	6	<-36	<-36	<-36	<-36
TAN	0.1	0.1	0.05	0.02	<0.1	0.10
Viscosity 40 deg C, cSt	4.87	4.87	2.8	3.38	4.775	4.78
RVP	26.1	25.2	40.0	54.0	26.75	26.75
Asphaltenes C7, wt%	0.1	1.83	0.01	0.02	<1	0.87
Mercaptanes, ppm	95	33	760	25	82	82
Hydrogen sulphide, ppm	0	0	0	0	<1	0.0
Org chloride in fraction up to 204	<1	<1	<1	<1	<1	<1

TBP, YELDS, VOL%

Butanes & Lighter	1.53	1.35	1.10	1.50		1.44
Light Gasoline (55-175 F) (C5-80)	3.01	3.54	11.25	5.95		3.53
Light Naphtha (175-300 F) (80-150)	9.92	9.15	13.4	15.63		9.80
Heavy Naphtha (300-400 F) (150- 200)	7.94	7.45	10.7	10.92		7.86
Kerosene (400-500 F) (200-260)	9.88	8.06	12.15	10.5		9.13
Atm. Gas oil (500-650 F) (260-343)	15.12	15.56	17.40	15.11		15.37
Lt Vacuum Gas oil (650-800 F) (343-425)	12.12	12.85	11.80	10.46		12.40
Hv. Vacuum Gas oil (800 -1050 F)(425-565)	18.35	18.06	14.00	19.08		18.13
Vacuum Residium (+1050 F) (565+)	22.13	23.98	8.20	10.85		22.33
	100	100	100	100		100.00

LIGHT GASOLINE (55-175 F)

Gravity, API	84.32	83.16	82.53	81.20		83.68
Specific gravity	0.6555	0.6591	0.6610	0.6651		0.6575
Mercaptane sulphur, ppm	250	60	627	14		168
Octane number, Research	70	68	72	72		69

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LIGHT NAPHTHA (175-300 F)

Gravity, API	58.78	60.18	58.38	58.12	59.38
Specific gravity	0.7434	0.7380	0.7450	0.7460	0.7411
Mercaptane sulphur, ppm	271	65	540	24	179
Naphthenes, vol%	36	32	38	40	34
Aromatics, vol%	5	7	6	12	6.1
Octane number, Research	77	51	59	60	64

HEAVY NAPHTHA (300-400 F)

Gravity, API	51.68	50.18	52.92	47.08	50.92
Specific gravity	0.7722	0.7785	0.7670	0.7920	0.7754
Sulphur, wt%	0.05	0.14	0.21	0.99	0.12
Mercaptane sulphur, ppm	264	62	615	24	176
Naphthenes, vol%	37.7	17.1	19.0	27.0	27.7
Aromatics, vol%	8.2	20.7	15.0	17.1	14.2
Smoke point, mm	26	28.0	25	22	27

KEROSENE (400-500 F)

Gravity, API	43.65	42.46	42.04	41.10	43.01
Specific gravity	0.8075	0.8130	0.8150	0.8190	0.8105
Sulphur, wt%	0.4	0.41	0.26	0.30	0.40
Mercaptane sulphur, ppm	30	9	410	15	30
Naphthenes, vol%	30	26	28	31	28
Aromatics, vol%	18	28	21	28	23
Freezing point, C	-62	-36	-48	-42	-49
Freezing point, F	-80	-33	-54	-44	-57
Smoke point, mm	22	24	21	21	23
Acid, mg KOH/g	0.01	0.23	0.01	0.22	0.11
Viscosity at 50 degC, cSt	1.54	1.61	1.48	1.42	1.57

ATM. GAS OIL (500-650 F)

Gravity, API	34.18	37.86	34.00	33.72	35.82
Specific gravity	0.8536	0.8351	0.8545	0.8560	0.8454
Sulphur, wt%	0.95	1.12	0.81	0.95	1.02
Nitrogen, ppm	68	98	100	40	82
Acid, mg KOH/g	0.03	0.3	0.01	0.22	0.16
Pour point, F	-18	26	0	-16	21
Pour point, C	-8	-3	-18	-9	-6
Viscosity at 50 deg C, cSt	4.25	3.1	3.77	3.96	3.71
Cetane index	51	49	57	54	50
Characterization factor,K	12	12	11.8	12	12.00

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ATM RESIDUUM (650+)

Yield, vol%	52.60	54.89	34.00	40.39	52.86
Gravity, API	21.24	16.74	18.63	19.26	19.10
Specific gravity	0.9259	0.9540	0.9420	0.9380	0.9393
Sulphur, wt%	2.18	2.25	1.51	1.62	2.18
Nitrogen, ppm	1496	2450	2500	1330	1946
MCR, wt%	2.86	6.85	4.52	5.75	4.77
Asphaltenes C7, wt%	1.3	2.02	1.1	1.35	1.62
Nickel, ppm	27	37	12	9	30
Vanadium, ppm	98	120	26	19	104
Pour point, F	66	75	97	81	72
Pour point, C	19	24	36	27	22
Viscosity at 50 deg C, cSt	568.5	474.6	238.4	152.5	507.5
Viscosity at 100 deg C, cSt	44.34	40.05	25.9	19.12	41.32
Characterization factor,K	12	12	12	12	12.00

LIGHT VAC. GAS (650-800 degF)

Yield, vol%	12.12	12.85	11.8	10.46	45.17
Gravity, API	28.48	26.52	26.68	27.05	27.52
Specific gravity	0.8840	0.8950	0.8940	0.8920	0.8894
Sulphur, wt%	1.21	1.39	1.16	1.28	1.29
Nitrogen, ppm	748	1225	1250	630	972
Naphthenes, wt%	29	31	25	26	29
Paraffins, wt%	11.21	10.5	8.1	6.8	10.70
Pour point, F	77	70	81	70	74
Pour point, C	25	21	27	21	23
Acid, mg KOH/g	0.03	0.25	0.04	0.20	0.13
Aniline, C	86	83	80	76	84
Aniline, F	187	181	176	169	183
Hydrogen, wt%	12.9	13.4	13.2	13.0	13.1
Viscosity at 50 deg C, cSt	14.81	14.67	18.15	11.25	14.74
Viscosity at 100 deg C, cSt	4.402	4.350	5.021	3.652	4.370
Characterization factor,K	12	12	11.5	12	11.99



HEAVY VAC. GAS (800-1050 degF)

Yield, vol%	18.35	18.06	14.00	19.08	18.13
Gravity, API	22.78	21.72	20.55	21.55	22.22
Specific gravity	0.9166	0.9230	0.9302	0.9240	0.9200
Sulphur, wt%	1.68	1.72	1.39	1.4	1.68
Nitrogen, ppm	1496	2450	2500	1260	1944
Pour point, F	102	108	118	108	106
Pour point, C	39	42	48	42	41
Acid, mg KOH/g	0.04	0.30	0.1	0.14	0.16
Aniline, C	101	89	96	85	95
Aniline, F	214	192	205	185	203
Hydrogen, wt%	12.6	12.6	12.3	12.8	12.6
Viscosity at 50 deg C, cSt	70.85	62.92	149.33	53.92	68.82
Viscosity at 100 deg C, cSt	12.17	11.50	19.50	12.42	12.06
Characterization factor,K	12	12	12	12	12.00

VACUUM RESIDUUM, (1050+)

Yield, vol%	22.13	23.98	8.2	10.85	22.33
Gravity, API	10.14	10.85	10.10	9.35	10.44
Specific gravity	0.9985	0.9935	0.9987	1.0040	0.9964
Sulphur, wt%	2.83	2.85	2.2	2.04	2.80
MCR, wt%	12.23	11.68	16.35	16.28	12.19
Asphaltenes C7, wt%	4.50	3.76	7.8	2.61	4.20
Nitrogen, ppm	1796	2750	2800	1560	2244
Nickel, ppm	54	67	59	27	59
Vanadium,ppm	186	231	84	51	200
Pour point, F	118	111	131	107.6	115
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Viscosity at 50 deg C, cSt	39668	30055	109707	25580	36740
Viscosity at 100 deg C, cSt	573.2	485.5	1057	440.5	542.5
Viscosity at 135 deg C, cSt	99.56	88.02	157.3	68.94	95.05
Characterization factor,K	12.1	12	12	12	12.05
Cutter in Fuel oil , vol%	27.87	30.83	35.00	18.78	29.15
Fuel oil yield, vol%	36.29	48.97	61.29	20.86	42.24

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