

## Ten Blend (39.66 API, 0.34 Sul WT%)

Crude Name:	Ten Blend	API Gravity	API	39.66	Component	Wt %	Vol %
Crude ID:	TenBlend2021	Density @15 deg C	KG/L	0.8263	C2 Minus	0	0
Country:	Ghana	Sulfur	WT%	0.340	C3	0.343	0.559
Region:	Africa	Reid Vapor Pressure	kPa	48.95	IC4	0.428	0.629
State:	--	Nitrogen	ppm	1,300.0	NC4	1.68	2.376
Assay Year:	2021	Pour Point	deg C	-18	IC5	1.392	1.842
Assay Library:	TULLOW	Acidity (TAN)	mgKOH/g	0.05	NC5	1.901	2.49
Assay Source:	--	Vanadium	ppm	2.00	CycP	0.416	0.458
Sulfur Type:	Low	Nickel	ppm	5.00	IC6	1.65	2.061
Crude Type:	Extra Light	Viscosity @104 F ( 40 C)	cSt	3.5	NC6	1.088	1.355
Chemical Class:	Intermediate	Viscosity @122 F ( 50 C)	cSt	2.8	Benzene	0.169	0.158

Property	Unit	WC	GAS	NAP1	NAP2	KERO	LDIST	HDIST	ARES
Initial Boiling Pt	deg C	--	IBP	15	85	175	250	300	360
End Boiling Pt	deg C	--	15	85	175	250	300	360	EBP
Cut Yield (Vol%)	LV%	100.00	3.26	11.42	21.31	14.44	8.56	10.32	30.70
Cut Yield (Wgt%)	WT%	100.00	2.23	9.43	19.67	14.33	8.75	10.80	34.79
API Gravity	API	39.66	119.56	76.60	54.72	41.73	36.56	32.76	20.16
Specific Gravity (@60F)	--	0.8267	0.5636	0.6800	0.7599	0.8168	0.8420	0.8615	0.9330
Density @15 deg C	KG/L	0.8263	0.5636	0.6798	0.7596	0.8164	0.8415	0.8610	0.9325
K-Factor	--	11.72 C	13.34	12.38	11.76	11.67	11.77	11.86	11.91
Molecular Weight	--	174 C	46	81	113	166	215	266	510
Hydrogen	WT%	13.5 C	17.5	15.9	14.6	13.8	13.5	13.3	12.0
Sulfur	WT%	0.340	0.001	0.002	0.005	0.038	0.160	0.357	0.773
Mercaptan Sulfur	ppm	3	0	1	1	1	2	3	3
Total H2S dissolved	ppm	0.0	--	--	--	--	--	--	--
Nitrogen	ppm	1,300.0	0.0	0.0	0.2	1.9	50.8	349.7	3,590.2
Basic Nitrogen	ppm	403.0	0.0	0.0	0.0	0.0	34.4	164.7	1,068.6
Research Octane clear	--	--	98.2	72.8	57.1	22.6	1.9	--	--
Motor Octane clear	--	--	92.4	70.1	54.8	22.7	2.2	--	--
Flash Point	deg C	-30	-132	-92	3	63	122	138	350
Reid Vapor Pressure	kPa	48.95	549.45	82.56	7.42	0.16	0.01	--	--
Paraffins (Total) Vol	LV%	--	100.0	73.9	51.0	74.1	70.8	68.8	63.2
iso-Paraffins Vol	LV%	--	23.84	36.39	34.20	--	--	--	--
n-Paraffins Vol	LV%	--	76.15	37.47	16.79	--	--	--	--

Property	Unit	WC	GAS	NAP1	NAP2	KERO	LDIST	HDIST	ARES
Naphthenes Vol	LV%	--	0.0	25.1	38.8	9.5	9.3	8.5	5.2
Aromatics Vol	LV%	--	0.0	1.0	10.2	16.4	19.9	22.6	31.6
N + 2A	LV%	--	0.01	27.14	59.26	42.32	49.14	53.81	68.48
Freeze Point	deg C	--	-164	-128	-94	-50	-17	7	46
Cloud Point	deg C	--	-165	-128	-94	-49	-18	8	46
Pour Point	deg C	-18	-167	-130	-96	-53	-20	6	39
Naphthalenes	WT%	--	0.0	0.0	0.0	1.8	5.0	--	--
Smoke Point (ASTM)	mm	--	79.81	47.36	30.74	23.17	17.20	13.58	--
Aniline Point	deg C	--	--	--	47	59	71	79	92
Acidity (TAN)	mgKOH/g	0.05	0.00	0.00	0.04	0.05	0.05	0.05	0.05
Cetane Index	--	--	0.0	0.2	19.1	41.1	54.7	63.4	37.0
Cetane Index (D4737)	--	--	100.7	39.7	30.7	42.5	53.2	61.4	--
Cetane Index (D4737-B)	--	--	73.5	54.6	42.1	44.3	51.8	59.4	--
Refractive Index @ 20deg C	--	--	1.25877	1.37413	1.42141	1.45277	1.46715	1.47793	1.51835
Refractive Index @ 70deg C	--	--	1.23356	1.35016	1.39841	1.43117	1.44669	1.45852	1.49777
Viscosity @ 68 F ( 20 C)	cSt	5.8 C	0.3	0.5	0.8	2.0	4.7	12.0	1,800.7
Viscosity @104 F ( 40 C)	cSt	3.5	--	0.4	0.7	1.5	3.1	7.3	631.6
Viscosity @122 F ( 50 C)	cSt	2.8	--	0.4	0.6	1.2	2.5	5.6	358.5
Viscosity @212 F (100 C)	cSt	1.5 C	--	--	0.4	0.7	1.1	1.9	27.1
Viscosity @275 F (135 C)	cSt	1.1 C	--	--	0.3	0.5	0.8	1.4	10.6
MCRT carbon number	WT%	1.65	0.00	0.00	0.00	0.00	0.00	0.00	4.78
Vanadium	ppm	2.00	0.00	0.00	0.00	0.00	0.00	0.00	6.49
Nickel	ppm	5.00	0.00	0.00	0.00	0.00	0.00	0.00	16.87
Vanadium + Nickel Total	ppm	7.00	0.00	0.00	0.00	0.00	0.00	0.00	23.35
Iron	ppm	0.66 C	0.00	0.00	0.00	0.00	0.00	0.00	1.89
Wax	WT%	8.70	0.00	0.00	0.00	0.00	2.96	16.98	15.74
Asphaltenes	WT%	< 0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.05
Salt Content	mg/l	< 5.7060	--	--	--	--	--	--	--
Penetration	dmm	--	--	--	--	--	--	--	--

Property	Unit	LVGO	HVGO	VRES
Initial Boiling Pt	deg C	360	450	565
End Boiling Pt	deg C	450	565	EBP
Cut Yield (Vol%)	LV%	9.15	11.66	9.88
Cut Yield (Wgt%)	WT%	9.90	12.97	11.92
API Gravity	API	27.41	23.03	11.01

Property	Unit	LVGO	HVGO	VRES
Specific Gravity (@60F)	--	0.8904	0.9157	0.9929
Density @15 deg C	KG/L	0.8899	0.9151	0.9923
K-Factor	--	11.91	12.11	11.85
Molecular Weight	--	348	505	843
Hydrogen	WT%	12.9	12.4	10.8
Sulfur	WT%	0.512	0.694	1.075
Mercaptan Sulfur	ppm	5	4	0
Total H2S dissolved	ppm	--	--	--
Nitrogen	ppm	1,010.8	2,223.3	7,220.0
Basic Nitrogen	ppm	317.9	693.2	2,100.7
Research Octane clear	--	--	--	--
Motor Octane clear	--	--	--	--
Flash Point	deg C	318	371	272
Reid Vapor Pressure	kPa	--	--	--
Paraffins (Total) Vol	LV%	64.2	63.7	61.7
iso-Paraffins Vol	LV%	--	--	--
n-Paraffins Vol	LV%	--	--	--
Naphthenes Vol	LV%	8.3	5.5	1.9
Aromatics Vol	LV%	27.5	30.8	36.5
N + 2A	LV%	63.26	67.17	74.80
Freeze Point	deg C	30	49	56
Cloud Point	deg C	30	49	56
Pour Point	deg C	28	47	54
Naphthalenes	WT%	--	--	--
Smoke Point (ASTM)	mm	10.41	8.52	--
Aniline Point	deg C	87	96	91
Acidity (TAN)	mgKOH/g	0.05	0.05	0.05
Cetane Index	--	64.3	42.4	5.3
Cetane Index (D4737)	--	65.7	--	--
Cetane Index (D4737-B)	--	68.0	--	--
Refractive Index @ 20deg C	--	1.49118	1.50645	1.55758
Refractive Index @ 70deg C	--	1.47298	1.48870	1.53144
Viscosity @ 68 F ( 20 C)	cSt	49.6	765.7	1.54E+007
Viscosity @104 F ( 40 C)	cSt	25.7	276.4	1,821,754.2
Viscosity @122 F ( 50 C)	cSt	17.9	159.7	592,167.5
Viscosity @212 F (100 C)	cSt	4.2	14.8	883.7

Property	Unit	LVGO	HVGO	VRES
Viscosity @275 F (135 C)	cSt	2.8	6.3	160.3
MCRT carbon number	WT%	0.00	0.64	13.27
Vanadium	ppm	0.14	1.94	16.71
Nickel	ppm	0.37	4.99	43.49
Vanadium + Nickel Total	ppm	0.51	6.94	60.19
Iron	ppm	0.04	0.55	4.89
Wax	WT%	21.71	16.74	9.69
Asphaltenes	WT%	0.00	0.00	0.15
Salt Content	mg/l	--	--	--
Penetration	dmm	--	--	213.1

C-Calculated Value

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Crude Assay Data from H/COMET Database 10/4/2022 11:03:17 AM

