

LABORATORY REPORT NO. FCA/1581/23
CRUDE OIL - DETAILED ASSAY ALL CUTS OVERVIEW

Prime Pride Cargo Composite Sample

Tests	Methods		Whole Crude	Light Ends	Fractions				
Initial BP		°C		C4	C5	175	300	300	500+
Final BP		°C		-	175	300	+	500	
Yield	ASTM D 2892 & D5236	% Wt.		3.68	42.20	21.95	32.17	27.85	4.32
		% Vol.		5.02	44.57	20.96	29.45	25.78	3.67
Position on Crude	ASTM D 2892 & D5236	% Wt.		0 - 3.68	3.68 - 45.88	45.88 - 67.83	67.83 - 100	67.83 - 95.68	95.68 - 100
		% Vol.		0 - 5.02	5.02 - 49.59	49.59 - 70.55	70.55 - 100	70.55 - 96.33	96.33 - 100
Density @ 15°C	ASTM D5002/D4052	kg/L	0.7945	0.5775	0.7522	0.8324	0.8678	0.8587	0.9365
Specific Gravity @ 60/60°F	Conversion		0.7949		0.7524	0.8328	0.8683	0.8592	0.9370
API Gravity @ 60°F	Calculated	°API	46.5		56.6	38.4	31.5	33.2	19.5
Composition (Upto C5)	GC	% Wt.		See Page 8					
Aromatics									
Mono		% Vol.				22.0			
Di		% Vol.				20.6			
Tri		% Vol.				<1			
Poly		% Vol.				20.6			
Asphaltene	IP 143	% Wt.	<0.50				<0.50		1.5
Basic Nitrogen	UOP 269	ppm wt				16		120	
Benzene	ASTM D6730	% Wt			3.43				
Carbon Residue- Micro	ASTM D4530/D189	% Wt	0.27				1.00		9.6
Organic Chloride	ASTM D4929B	ppm wt	<1		<1				
Composition - Light HC	IP 601	-	See Page 13						
Paraffins	ASTM D6730	Vol%			53.019				
Naphthene		Vol%			22.616				
Aromatics		Vol%			23.391				
Flash Point (PMCC)	ASTM D93/D 170	°C	< 5			71.5			
Freezing Point	ASTM D2386	°C				-24			
Hydrogen Sulphide (Liquid Phase)	UOP163	ppm wt	<0.40		<1				
Kinematic Viscosity @ 40°C	ASTM D445	cSt	1.361			1.684			
Kinematic Viscosity @ 50°C		cSt	#						
Kinematic Viscosity @ 70°C		cSt	#				6.89	5.4	181.4
Kinematic Viscosity @ 100°C		cSt					3.77	3.174	32.12
Kinematic Viscosity @ 135°C		cSt							11.95
Mercaptan Sulphur	UOP163	ppm wt	1		<3				
Metals									
Copper	ICPOES	ppm wt	<1				<1	<1	
Iron	ICPOES	ppm wt	1				1	<1	
Nickel	ICPOES	ppm wt	<1				<1	<1	
Vanadium	ICPOES	ppm wt	<1				1	<1	
Motor Octane Number	ASTM D2700	Rating			63				
Penetration	ASTM D5	0.1 mm							98
Pour Point-upper	ASTM D5853A	°C							
Pour Point	ASTM D97	°C	<1		<-42	-27	+45	+45	+60
Cloud Point	ASTM D2500	°C				-23			
Aniline Point	ASTM D611	°C				56.00			
Cetane Index	ASTM D976	Rating				43.7			
Refractive Index @20°C	ASTM D1218	-				1.47			
Reid Vapour Pressure @37.8°C	ASTM D5191/D323	psi	10.6		4.24				
Research Octane Number	ASTM D2699	Rating			64				
Salt Content	ASTM D3230	lb/1000bbls	0.5						
Smoke Point	ASTM D1322	mm				14			
Total Acid Number	ASTM D664	mg KOH/g	0.05						
Total Nitrogen	ASTM D4629/D5762/D3228	ppm wt	122			25		248	
Total Sulphur	ASTM D4294/D5453	% Wt	0.0287		0.0002	0.0137	0.0771	0.0679	0.131
Water Content	ASTM D4006	% Vol	0.05						
Wax Appearance Temperature	DSC	°C	24						
Wax Disappearance Temperature	DSC	°C	33						
Wax Content	UOP 46*	% Wt	11.2				34.00	36.00	
Distillation	ASTM D86 / D1160	°C			See Below	See Below	See Below		
Initial Boiling Point		°C			46.0	190.4	298.0		
5% recovered		°C			70.0	202.9	331.0		
10% recovered		°C			76.2	207.0	341.0		
20% recovered		°C			84.7	212.1	348.0		
30% recovered		°C			93.1	218.6	368.0		
40% recovered		°C			101.4	225.7	385.0		
50% recovered		°C			109.4	233.8	398.0		
60% recovered		°C			117.6	242.1	418.0		
70% recovered		°C			126.8	250.3	439.0		
80% recovered		°C			136.8	258.3	455.0		
90% recovered		°C			148.8	267.7	469.0		
95% recovered		°C			156.9	274.3	486.0		
Final Boiling Point		°C			166.1	283.9	496.0		
Recovery		Vol%			99.1	98.1			
Residue		Vol%			0.6	1.2			
Loss		Vol%			0.3	0.7			

Note : (#) Not possible due to the nature of sample (*)Withdrawn method

WHOLE CRUDE PROPERTIES
Sample Descriptions / Label :

Prime Pride Cargo Composite Sample

Tests	Methods	Units	Results
Density @ 15°C	ASTM D5002	kg/L	0.7945
Specific Gravity @ 60/60°F	Conversion		0.7949
API Gravity @ 60°F	Calculated	°API	46.5
Asphaltene	IP 143	% Wt	<0.50
Carbon Residue- Micro	ASTM D4530	% Wt	0.27
Organic Chloride	ASTM D4929B	ppm wt	<1
Composition (Upto C9)	IP 601	% Wt & %Vol.	See Page 13
Flash Point	IP 170	°C	<-5
Hydrogen Sulphide (Liquid Phase)	UOP163	ppm wt	<0.40
Kinematic Viscosity @ 40°C	ASTM D445	cSt	1.361
Kinematic Viscosity @ 50°C			#
Kinematic Viscosity @ 70°C			#
Mercaptan Sulfur	UOP 163	ppm wt	1
Copper	ICPOES	ppm wt	<1
Iron	ICPOES	ppm wt	1
Nickel	ICPOES	ppm wt	<1
Vanadium	ICPOES	ppm wt	<1
Pour Point	ASTM D97	°C	<1
Reid Vapour Pressure @ 100°F	ASTM D323	psi	10.6
Salt Content	ASTM D3230	PTB	0.50
Total Acid Number	ASTM D664	mg KOH/g	0.05
Total Nitrogen	ASTM D5762	ppm wt	122
Total Sulphur	ASTM D4294	% Wt	0.0287
Water Content	ASTM D4006	% Vol	0.05
Wax Appearance Temperature	DSC	°C	24
Wax Disappearance Temperature	DSC	°C	33
Wax Content	UOP 46*	% Wt	11.2

Note : (#) Sample is boiled at this temperature

LABORATORY REPORT NO. FCA/1581/23
TRUE BOILING POINT DISTILLATION DATA
(ASTM D 2892 & ASTM D 5236)

Sample Descriptions / Label : Prime Pride Cargo Composite Sample

Sl. No.	Method	Vapour Temperature °C	% Mass	Cumulative % Mass	% Volume	Cumulative % Volume
1	ASTM D2892	Gas	3.68	3.68	5.02	5.02
2		15 - 50	3.77	7.45	4.70	9.72
3		50 - 75	6.45	13.90	7.26	16.98
4		75 - 100	7.48	21.38	7.94	24.92
5		100 - 125	8.76	30.14	9.00	33.92
6		125 - 150	8.88	39.02	8.88	42.80
7		150 - 175	6.86	45.88	6.79	49.59
8		175 - 200	4.07	49.95	4.03	53.62
9		200 - 225	4.30	54.25	4.20	57.82
10		225 - 250	4.77	59.02	4.52	62.34
11		250 - 275	4.81	63.83	4.49	66.83
12		275 - 300	4.00	67.83	3.72	70.55
13	ASTM D5236	300 - 350	6.77	74.60	6.29	76.84
14		350 - 375	3.86	78.46	3.58	80.42
15		375 - 400	3.85	82.31	3.57	83.99
16		400 - 425	3.82	86.13	3.53	87.52
17		425 - 450	3.80	89.93	3.51	91.03
18		450 - 475	3.60	93.53	3.32	94.35
19		475 - 500	2.15	95.68	1.98	96.33
20		500 + Residue	4.32	100.00	3.67	100.00

TRUE BOILING POINT DISTILLATION CURVE
(ASTM D 2892 & ASTM D 5236)

"Prime Pride Cargo Composite Sample"

