Marketing Specifications of Fuel Products

Ceylon Petroleum Corporation

Technical Services & Corporate Affairs Function.

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Marketing Specification for Auto Diesel (A0013L99)

Property/Test	Test Method ASTM-D	Specifications
Appearance		Clear & free from water and impurities
Density @15 ^{0}C kg/m^3	1298/ 4052	820 - 860
Colour ASTM	1500	Max. 2.0
Distillation	86	
IBP ^{0}C		Report
T10 ^{0}C		Report
T50 ^{0}C		Report
T90 ^{0}C		Max 370
Recovery @ 315 ^{0}C		Min 50
Recovery @ 350 ^{0}C		Min 80
Cetane Index or	976	Min 45 (Note1)
Cetane Number	613	Min 49
CFPP ^{0} C		Max 10
Sulphur Content, mg/kg	4294/2622	Max. 3000
Flash Point ^{0}C	93	Min 55
Viscosity Kin @40 ^{0}C cst	445	1.5 -5.0
Water Content, mg/kg	95	Max 500
Cu Strip corrosion 3 hrs @ 50 ^{0}C	130	Max 1
Ash % m/m	482	Max 0.02
Carbon residue % m/m or Micro Carbon Residue %m/m	524/ 4530	Max 0.3
Strong Acid No. mg KOH/g	974/664	NIL
Total Acid No. mg KOH/g	974/664	Max 0.2
Caloric value gross kCal/kg	240	Min 10500

Note 1: Not applicable if any Cetane improver additive is present

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Marketing Specification for Lanka Super Diesel 4 Star (A0016L99)

Property/Test	Test Method ASTM-D	Specifications
Appearance		Clear, bright and free from water & visible impurities
Density @ 15 ^{0}C kg/m^3	1298/ 4052	820 - 845
Colour ASTM	1500	Max. 2.0
Distillation	86	
E250 Vol% Max		<65
E350 Vol % Min		85
T95^{o}c		Max. 360
Cetane Index Or	976 / 4737	Min. 50 (Note1)
Cetane Number	613	Min. 51
CFPP ^{0}C	6371	Max. +5
Sulphur Content mg/kg	5453	Max.10
Flash Point ^{0}c	93	Min. 55
Viscosity Kin @ 40 ^{0}c, cSt	445	2 – 4
Water Content mg/kg	6304	Max. 200
Cu -Strip Corrosion 3 hrs. At 50 ^{0}c	130	Max. 1
Ash % m/m	482	Max. 0.01
Carbon Residue, % m/m	524 / 4530	Max. 0.2
Particulate Contaminants, Total mg/l	6217	Max. 10
Strong Acid No. mg KOH/g	974/664	NIL
Total Acid No. mg KOH/g	974/664	Max. 0.2
Calorific Value Gross kcal/kg	240	Min. 10600
Oxidation Stability g/m^3	2274	Max. 25
DSEP Rating	7261	50 – 100
FAME	7371	Non Detectable
Lubricity (HFRR Wear Scar Dia.@60^{0}c) micron	6079	Max. 400

Note 1: Not applicable if any Cetane improver additive is present

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Marketing Specification for Petrol (A0023L99) - 92 Octane

Property/Test	Test Method ASTM-D	Specifications
Appearance		Clear & free from water and impurities
Density @15 ^{0}C kg/m^3	1298/4052	720- 785
Reid Vapour Pressure @37.8 ^{0}C (100 ^{0}F)	323	35-65 KPa (5.0 – 9.4 psi)
Research Octane Number (RON)	2699	Min 92
Motor Octane Number (MON)	2700	Min 82
Marketing Color		No color added
Distillation	86	
IBP ^{0}C		Report
T10^{0}C		45-70
T50^{0}C		80-125
T90 C		Max. 180
FBP		Max 210
Residue Vol%		Max. 2.0
Doctor Test	IP 30/4952	Sweet or less than 15ppm RSH
Total Sulphur content mg/kg	4294/2622	Max 300
Lead content g/l	5059/3237	Max 0.013
Washed Gums mg/100 ml	381	Max 5
Oxygenate content %v/v	4815	Max 15
Oxygen content % m/m (Calculated)		Max. 2.7
Oxidation Stability, Minutes	525	Min 480
Cu Strip corrosion 3 hrs @ 50 ^{0}C	130	Max 1
Benzene % v/v	3606/5580	Max 2.5
Total Aromatics % v/v	5580/1319	Max. 45

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Marketing Specification for Lanka Petrol - 95 Octane EURO 4(A0018L99)

Property/Test	Test Method ASTM-D	Specifications
Appearance		Bright, clear & free from water, visible impurities and dyes
Density @15 ^{0}C kg/m^3	1298	720- 775
Reid Vapour Pressure @37.8 ^{0}C kPa	323	45-60
Research Octane Number (RON)	2699	Min 95
Motor Octane Number (MON)	2700	Min 85
Distillation	86	
IBP ^{0}C		Report
E100, Vol %, Min-Max		46-71
E150, Vol %, Min		75
FBP ^{o}C, Max		210
Residue vol%, Max		2.0
Doctor Test	IP 30/4952	Sweet or less than 15ppm RSH
Total Sulphur content mg/kg	5453/ 4294/ 2622	Max 50
Lead content g/l	5059/ 3237	Max 0.005
Total Aromatics % v/v	5580	Max. 35
Washed gums mg/100ml	381	Max 5
Oxygenate %v/v	4815	Max 15
Oxygen Content % m/m (Calculated)		Max. 2.7
Oxidation Stability, Minutes	525	Min 360
Cu Strip corrosion 3 hrs @ 50 ^{0}C	130	Max 1
Benzene % v/v	3606/ 5580	Max 1
Olefins Content %v/v	1319/ 6730	Max 18

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Marketing Specification for Lanka Fuel Oil Super (A0025L99)

Property/Test	Test Method		Specifications
	IP	ASTM-D	
Density @15 ºC kg/m ^{3}	160	1298	900- 970
Flash Point (PMCC) º C	34	93	Min 60
Pour Point º C	15	97	Max 30
Sulphur Content % (w/w)	61	4294	Max 2.0
Viscosity Kinematic @ 50ºC, cSt	71	445	60-100
Water content %(v/v)	74	95	Max 1.0
Ash % wt	4	482	Max 0.1
Conradson Carbon % w/w or Micro Carbon Residue% w/w		189 4530	Max 12
Sediment by Extraction % (w/w)	53	473	Max 0.1
Total Sediment Potential % (w/w)		4870	Max 0.1
Caloric Value (gross) kcal/kg	12	240	Min 10500
Strong Acid No. KOH mg/g	1/177	974/ 664	Nil
Metal Contaminants			
Vanadium (V)	501	3605	Max 65 ppm
Sodium(Na) + Potassium(K)	501	3605	Max 30 ppm
Calcium(Ca)	501/470	3605	Max 10 ppm
Lead (Pb)		3605	Max 1.0 ppm
Aluminum(Al) + Silicon(Si)	501/377		Max 80 ppm
Zinc(Zn)	501/470		Report
Phosphorus (P)	501/ 500		Report
Ferrous (Fe)	501	3605	Report

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Marketing Specification for Lanka Fuel Oil 800 Sec. (A0026L99)

Property/Test	Test Method		Specifications
	IP	ASTM -D	
Density @15 °C kg/m 3	160	1298/4052	Max 970
Flash Point (PMCC) ° C	34	93	Min 60
Pour Point ° C	15	97	Max 21.1
Sulphur Content % (w/w)	61	4294	Max 3.5
Viscosity Kinematic @ 50 ° C, cSt	71	445	Max 102
Redwood 1 @100 ° F Sec			Max 800
Water content %(v/v)	74	95	Max 1.0
Ash % wt	4	482	Max 0.2
Conradson Carbon % w/w or Micro Carbon Residue % (w/w)		189/ 4530	Max 12
Sediment by Extraction % (w/w)	53	473	Max 0.1
Caloric Value (gross) k.Cal/kg	12	240	Min 10200
Strong Acid No. KOH mg /g	1/177	974/664	Nil
Metal Contaminants			
Vanadium (V)	501	3605	Max 200 ppm
Sodium (Na) + Potassium (K)	501	3605	Report
Calcium (Ca)	501	3605	Report
Lead (Pb)		3605	Report

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Marketing Specification for Lanka Fuel Oil 1500 Sec. (Low Sulphur), (A0039L99)

Property/Test	Test Method		Specifications
	IP	ASTM-D	
Density @15 ºC kg/m 3	160	1298	900- 970
Flash Point (PMCC) º C	34	93	Min 60
Pour Point º C (º F)	15	97	Max 24
Sulphur Content % (w/w)	61	4294/2622	Max 2.0
Redwood 1 @100 º F Sec			Max 1500
Viscosity Kinematic @ 50 º C, cSt	71	445	Report
Water content %(v/v)	74	95	Max 1.0
Ash % wt	4	482	Max 0.2
Conradson Carbon % w/w or Micro Carbon Residue % w/w	389	189/ 4530	Max 12
Sediment by Extraction % (w/w)	53	473	Max 0.1
Asphaltenes m/m %	143	6560	Report
Caloric Value (gross) kCal/kg	12	240	Min 10300
Strong Acid No. KOH mg /g	1/177	974/664	Nil
Metal Contaminants			
Vanadium (V)	501/288	3605	Max 65 ppm
Sodium (Na) + Potassium (K)	501	3605	Max 30 ppm
Aluminum (Al) + Silicon (Si)	501/377		Max 80 ppm
Zinc (Zn)	501/470		Max 15 ppm
Phosphorus (P)	501/500		Max 15 ppm
Calcium (Ca)	501/470	3605	Max 30 ppm
Ferrous (Fe)	501	3605	Max 30 ppm
Lead (Pb)		3605	Max 1ppm

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Marketing Specification for Lanka Fuel Oil 1500 Sec. (High Sulphur), (A0029L99)

Property/Test	Test Method		Specifications
	IP	ASTM-D	
Density @15 °C kg/m^3	160	1298	Max 970
Flash Point (PMCC) ° C	34	93	Min 60
Pour Point ° C (° F)	15	97	Max 24
Sulphur Content % (w/w)	61	4294	Max 3.5
Viscosity Kinematic @ 50 ° C, cSt	71	445	Max 178
Redwood 1 @100 ° F Sec (Note 1)			Max 1500
Water content %(v/v)	74	95	Max 1.0
Ash % wt	4	482	Max 0.2
Conradson Carbon % w/w or Micro Carbon Residue % w/w		189/ 4530	Max 12
Sediment by Extraction % (w/w)	53	473	Max 0.25
Asphaltenes m/m %	143	6560	Report
Caloric Value (gross) kcal/kg	12	240	Min 10200
Strong Acid No. KOH mg /g	1/177	974/664	Nil
Metal Contaminants			
Vanadium (V)	501	3605	Max 200 ppm
Sodium (Na) + Potassium (K)	501	3605	Report
Calcium (Ca)	501	3605	Report
Lead (Pb)		3605	Report

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Marketing Specification for Lanka Industrial Kerosene (A0012L99)

Property/Test	Test Method		Specifications
	IP	ASTM-D	
Appearance			Clear and free from water and impurities
Colour, visual			Yellow
Density @15 ^{0}C kg/m^3	160	1298	775-840
Distillation	123	86	
IBP ^{0}C			Report
10% Vol. Evaporated ^{0}C			Max. 205
20% Vol. Evaporated ^{0}C			Report
50% Vol. Evaporated ^{0}C			Report
90% Vol. Evaporated ^{0}C			Report
End Point ° C			Max. 300
Residue % Vol. Max			1.5
Loss % Vol. Max.			1.5
COMBUSTION			
Smoke point mm		1322	Min 18
Flash point °C	170	56	Min 38
COMPOSITION			
Acidity, total mg KOH/g	354	3242	0.05
Aromatic % Vol. Max.	156	1319	25.0
Olefin, % Vol. Max.	156	1319	5.0
Sulphur, total % mass Max.		4294	0.30
Sulphur, Mercaptan total % mass Max.	342	3227	0.003
Or Doctor Test	30	4952	Negative
Cu Corrosion 2 hrs. @ 100 ° C	154	130	Max 1

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Marketing Specification for Lanka Kerosene (A0017L99)

Property/Test	Test Method		Specifications
	IP	ASTM-D	
Appearance			Clear and free from water and Impurities
Colour, visual			Red
Density @15 ^{0}C kg/m^3	160	1298	Max 840
Distillation	123	86	
IBP ^{0}C			Report
10% Vol. Evaporated ^{0}C			Max. 205
20% Vol. Evaporated ^{0}C			Report
50% Vol. Evaporated ^{0}C			Report
90% Vol. Evaporated ^{0}C			Report
End Point ° C			Max. 300
Smoke point, mm	57	1322	Min 18
Flash point °C	170	56	Min 38
Sulphur content wt%	243	4294/5453/ 1266/2622	Max 0.30
Copper Corrosion 2 hrs. @ 100 ° C	154	130	Max 1

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Marketing Specification for Lanka Chemical Naphtha (A0021L99)

Property/Test	Test Method		Specifications
	IP	ASTM-D	
Density @15 °C kg/m^3	160	1298	650-720
Reid Vapour Pressure @37.8^{0}C (100°F)		323	Max 13 psi (89.7KPa)
Colour Saybolt		156	Min 25
Distillation		86	
IBP ° C			
10% Evaporated ^{0} C			Max 75
50% Evaporated ^{0} C			Max 115
70% Evaporated ^{0} C			Max 145
90% Vol. Evaporated ^{0} C			Max 170
End Point ^{0}C			Max 180
Hydrogen Sulphide ppm	UOP 163		Max 3
Sulphur content ppm	UOP 357	5453/ 2622	Max 10
Lead content ppb	UOP 350		Max 50
Composition:-	UOP 273	6730	
Parafins % Vol			Min 70
Olefins % Vol			Max 1.0
Napthenes % Vol			To be reported
Aromatics % Vol	156	1319/ 6730	Max 15