Marketing Specifications of Fuel Products

Ceylon Petroleum Corporation

Technical Services & Corporate Affairs Function.

21st March 2024
Rev. 09

Updated on 21st March 2024

Marketing Specification for Lanka 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, Vol %		Min 50
Recovery @ 350 ^{0}C, Vol %		Min 80
Cetane Index or	976	Min 45 (Note1)
Cetane Number	613	Min 49
CFPP, ^{0}C	6371	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	95/6304	Max 500
Cu Strip corrosion 3 hrs @ 50 ^{0}C	130	Max 1
Ash, % m/m	482	Max 0.02
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, ^{0}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/ 2622	Max.10
Flash Point, ^{0}C	93	Min. 55
Viscosity Kin @ 40 ^{0}c, cSt	445	2 – 4.5
Water Content, mg/kg	6304	Max. 200
Cu -Strip Corrosion 3 hrs. @ 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. 460

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

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Marketing Specification for Lanka Petrol - 92 Octane (A0023L99)

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), kPa	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 or Mercaptan Sulphur, mg/kg	4952/ IP30 3227/IP 342	Sweet or Max. 15
Total Sulphur content, mg/kg	4294/2622/5453	Max. 150
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	4815	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	1298/4052	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 %		46 - 71
E150, Vol %		Min. 75
FBP, ^{o}C		Max. 210
Residue, Vol%		Max. 2.0
Doctor Test or Mercaptan Sulphur, mg/kg	4952/ IP30 3227/IP 342	Sweet or Max. 15
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	4815	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 IP	ASTM-D	Specifications
Density @15 ºC, kg/m ^{3}	160	1298/4052	900- 970
Flash Point (PMCC), ºC	34	93	Min. 60
Pour Point, ºC	15	97/5949/5950	Max. 30
Sulphur Content, % (w/w)	61	4294/ 2622	Max. 2.0
Viscosity Kinematic @ 50ºC, cSt	71	445	60 - 102
Water content, %(v/v)	74	95	Max. 1.0
Ash, % wt	4	482	Max. 0.1
Carbon Residue, % w/w		189/524/4530	Max. 12
Sediment by Extraction, % (w/w)	53	473	Max. 0.1
Total Sediment Potential, % (w/w)		4870	Max. 0.1
Calorific Value (gross), kcal/kg	12	240	Min. 10500
Strong Acid No., KOH mg/g	1/177	974/ 664	NIL
Metal Contaminants			
Vanadium (V), mg/kg	501	3605	Max. 65
Sodium(Na) + Potassium(K), mg/kg	501	3605	Max. 30
Calcium(Ca), mg/kg	501/470	3605	Max. 10
Lead (Pb), mg/kg		3605	Max. 1.0
Aluminum(Al) + Silicon(Si), mg/kg	501/377		Max. 80
Zinc(Zn) ,mg/kg	501/470		Report
Phosphorus (P), mg/kg	501/ 500		Report
Ferrous (Fe), mg/kg	501	3605	Report

NOTE: THE PRODUCT SHALL BE FREE FROM USED LUBRICATING OIL (ULO) AS DESCRIBED IN THE ISO 8217:2017(E) STANDARDS FOR PETROLEUM PRODUCTS – FUELS (CLASS F) – SPECIFICATIONS OF MARINE FUELS.

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

Property/Test	Test Method IP	Test Method ASTM -D	Specifications
Density @15 °C, kg/m^3	160	1298/4052	Max. 970
Flash Point (PMCC), °C	34	93	Min. 60
Pour Point, °C	15	97/5949/5950	Max. 21.1
Sulphur Content ,% (w/w)	61	4294/ 2622	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
Carbon Residue, % (w/w)		189/524/ 4530	Max. 12
Sediment by Extraction, % (w/w)	53	473	Max. 0.1
Calorific Value (gross), kCal/kg	12	240	Min. 10200
Strong Acid No. KOH, mg/g	1/177	974/664	NIL
Metal Contaminants			
Vanadium (V), mg/kg	501	3605	Max. 200
Sodium (Na) + Potassium (K), mg/kg	501	3605	Report
Calcium (Ca), mg/kg	501	3605	Report
Zinc (Zn), mg/kg	501/470		Report
Phosphorus (P), mg/kg	501/ 500		Report
Lead (Pb), mg/kg		3605	Report

NOTE: THE PRODUCT SHALL BE FREE FROM USED LUBRICATING OIL (ULO) AS DESCRIBED IN THE ISO 8217:2017(E) STANDARDS FOR PETROLEUM PRODUCTS – FUELS (CLASS F) – SPECIFICATIONS OF MARINE FUELS.

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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	1298/4052	900- 970
Flash Point (PMCC), ºC	34	93	Min. 60
Pour Point, º C	15	97/5949/5950	Max. 24
Sulphur Content, % (w/w)	61	4294/2622	Max. 2.0
Redwood 1 @100 º F, Sec			Max. 1500
Viscosity Kinematic @ 50 ºC, cSt	71	445	Report
Water content, %(v/v)	74	95	Max. 1.0
Ash ,% (w/w)	4	482	Max. 0.2
Carbon Residue, % w/w	389	189/524/ 4530	Max. 12
Sediment by Extraction, % (w/w)	53	473	Max. 0.1
Asphaltenes, m/m %	143	6560	Report
Calorific Value (gross), kCal/kg	12	240	Min. 10300
Strong Acid No., KOH mg /g	1/177	974/664	NIL
Metal Contaminants			
Vanadium (V), mg/kg	501/288	3605	Max. 65
Sodium (Na) + Potassium (K), mg/kg	501	3605	Max. 30
Aluminum (Al) + Silicon (Si), mg/kg	501/377		Max. 80
Zinc (Zn), mg/kg	501/470		Max. 15
Phosphorus (P), mg/kg	501/500		Max. 15
Calcium (Ca), mg/kg	501/470	3605	Max. 30
Ferrous (Fe), mg/kg	501	3605	Max. 30
Lead (Pb), mg/kg		3605	Max. 1

NOTE: THE PRODUCT SHALL BE FREE FROM USED LUBRICATING OIL (ULO) AS DESCRIBED IN THE ISO 8217:2017(E) STANDARDS FOR PETROLEUM PRODUCTS – FUELS (CLASS F) – SPECIFICATIONS OF MARINE FUELS.

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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	1298/4052	Max. 970
Flash Point (PMCC), °C	34	93	Min. 60
Pour Point, °C	15	97/5949/5950	Max. 24
Sulphur Content, % (w/w)	61	4294/ 2622	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
Carbon Residue, % w/w		189/524/ 4530	Max. 12
Sediment by Extraction, % (w/w)	53	473	Max. 0.25
Asphaltenes, m/m %	143	6560	Report
Calorific Value (gross), kcal/kg	12	240	Min. 10200
Strong Acid No., KOH mg /g	1/177	974/664	NIL
Metal Contaminants			
Vanadium (V), mg/kg	501	3605	Max. 200
Sodium (Na) + Potassium (K), mg/kg	501	3605	Report
Calcium (Ca), mg/kg	501	3605	Report
Zinc (Zn), mg/kg	501/470		Report
Phosphorus (P), mg/kg	501/ 500		Report
Lead (Pb), mg/kg		3605	Report

NOTE: THE PRODUCT SHALL BE FREE FROM USED LUBRICATING OIL (ULO) AS DESCRIBED IN THE ISO 8217:2017(E) STANDARDS FOR PETROLEUM PRODUCTS – FUELS (CLASS F) – SPECIFICATIONS OF MARINE FUELS.

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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	1298/4052	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, º 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.	156	1319	Max. 25.0
Olefin, % Vol.	156	1319	Max.5.0
Sulphur, total, % mass		4294/ 2622/5453	Max. 0.30
Sulphur, Mercaptan total, % mass	342	3227	Max.0.003
Or Doctor Test	30	4952	Negative
Cu Corrosion 2 hrs. @ 100 º 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	1298/4052	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, ºC			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 º 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	1298/4052	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

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Marketing Specification for Lanka Liquefied Petroleum Gas (LPG) (A0022L99)

Property	Test Method ASTM-D	Specifications
Vapour pressure @ 37.8°C, kPa	1267/2598/6897	414 - 637
95% vol evaporated temperature, °C	2158	Max. 2
Residue @ 37.8°C, % vol	2158	Max. 0.05
Oil stain observation		Pass
Composition:	2163	
Propane, % vol		Max. 30
Butane, % vol		Report
C5 and higher hydrocarbons, % vol		Max. 2
Dienes, % vol		Max. 0.5
Alkynes, % vol		Max. 0.5
Sulphur Content, mg/kg	2784/3246/6667	Max. 200
Odorant in vapour phase	5305	Min 14 for ethanethiol or Min 77 for tetrahydrothiophene
H_2S	2420	Pass
Cu Strip corrosion, 2hrs @ 37.8 °C	1838	Max. 1
Relative Density @ 15.6 °C /15.6 °C	1657/2598	Report
Free water	Visual observation	None

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Marketing Specification for Lanka Bitumen 60-70 (P354L99)

Property/Test	Test Method		Specifications
	IP	ASTM-D	
Specific Gravity @ 25°C/25°C		70	1.01 - 1.06
Penetration, 100 g, 5 Sec, @ 25°C, mm $x10^{-1}$	49	5	60 - 70
Softening Point, ˚C	58	36	48 - 56
Loss on heating on 5 hrs @ 163 ˚C			
1) Loss by weight, % (w/w)	45	6	Max. 0.2
2) Penetration after loss on heating, mm $x10^{-1}$	49	5	Min. 80 % of its Original Penetration
Solubility in CS_2, % vol		4	Min. 99.0
Flash Point COC, °C		92	Min. 250
Ductility @ 25 °C, mm		113	Min. 1000

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Marketing Specification for Lanka Bitumen 80-100 (P353L99)

Property/Test	Test Method IP	Test Method ASTM-D	Specifications
Specific Gravity @ 25°C/25°C		70	1.00 - 1.05
Penetration, 100 g, 5 Sec, @ 25°C, mm $x10^{-1}$	49	5	80 - 100
Softening Point, ˚C	58	36	45 - 52
Loss on heating on 5 hrs @ 163 ˚C			
1) Loss by weight, % (w/w)	45	6	Max. 0.5
2) Penetration after loss on heating, mm $x10^{-1}$	49	5	Min. 80 % of its Original Penetration
Solubility in CS_2, % vol		4	Min. 99.0
Flash Point COC, °C		92	Min. 232
Ductility @ 25 °C, mm		113	Min.1000

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Marketing Specification for Lanka Solvents SBP (A0702L99)

Property/Test	Test Method		Specifications
	IP	ASTM-D	
Density @ 15°C, kg/m^3	160	1298	Max. 725
Colour Saybolt		156	Min. 25
Distillation:	123	86	
IBP, °C			Min. 60
10% Evaporated, °C			Report
30% Evaporated, °C			Report
50% Evaporated, °C			85-105
70% Evaporated, °C			Report
90% Evaporated, °C			105-130
95% Evaporated, °C			Max. 145
98.5% Evaporated, °C			Max. 155
Residue, % vol			Max. 1
Sulphur Content, mg/kg	243	4294/2622	Max. 50
Aromatic Content, % vol	156	1319	Max. 16
Cu Strip Corrosion 3 hrs @ 50°C	154	130	Max. 1

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Marketing Specification for Lanka Avgas 100LL (A0053L200)

SPECIFICATION / DATA SHEET FOR AVGAS
Fuel Specification and Testing shall be as per the DEFENCE STANDARD 91-090 ISSUE 5 (PUBLICATION DATED 14TH DECEMBER 2019) for AVGAS 100LL. This specification and testing will be subject to any revisions of the DEFENCE STANDARD 91-090 and hence, shall be revised accordingly.

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Marketing Specification for Jet A-1 (A0056L99)

SPECIFICATION / DATA SHEET FOR JET A-1
Fuel Specification and Testing shall be as per the AVIATION FUEL QUALITY REQUIREMENTS FOR JOINTLY OPERATED SYSTEMS (AFQRJOS) - Issue 34 dated 19th January 2024 This specification and testing will be subject to any revisions of AFQRJOS and hence, shall be revised accordingly.

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Marketing Specification for Marine Fuels

SPECIFICATION / DATA SHEET FOR MARINE FUELS
Fuel Specification and Testing shall be as per the **ISO 8217 - Petroleum products Fuels (class F) Specifications of marine fuels** Sulphur levels shall be as per the applicable regulations and customer requirement.