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## Accreditation No: LAB 026

Awarded to

**Attock Refinery Limited, Rawalpindi, Pakistan**

The scope of accreditation is in accordance with the standard specifications outlined in the following page(s) of this document. The accredited scope shall be visible and legible in areas such as customer service, sample-receiving section etc and shall not mislead its users.

The accreditation was first time granted on **04-10-2007** by Pakistan National Accreditation Council

The laboratory complies with the requirements of **ISO/IEC 17025:2017**.

The accreditation requires regular surveillance, and is valid until **08-07-2020**.

The decision of accreditation made by Pakistan National Accreditation Council implies that the organization has been found to fulfill the requirements for accreditation within the scope.

The organization however, itself is responsible for the results of performed measurements/tests.

**PAKISTAN NATIONAL ACCREDITATION COUNCIL**

26-12-2019

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Director General

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**Testing Laboratory.**

Accreditation Scope of Attock Refinery Limited, Rawalpindi, Pakistan

Permanent laboratory premises

Materials/Products tested	Testing field (e.g. environmental testing or mechanical testing)	Types of test/ Properties measured	Reference to standardized method (e.g. ISO 14577-1:2003)/ Internal method reference
<b>Export Naphtha</b>	Petroleum Testing	Specific Gravity	ASTM D1298-12b
	Petroleum Testing	Distillation	ASTM D7345-14
<b>Premium Motor Gasoline (PMG)</b>	Petroleum Testing	Specific Gravity	ASTM D1298-12b
	Petroleum Testing	Distillation	ASTM D7345-14
	Petroleum Testing	Reid Vapour Pressure	ASTM D323-15
	Petroleum Testing	Research Octane No.	ASTM D2699-15a

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<b>JP-1 / JP-8</b>	Petroleum Testing	Specific Gravity	ASTM D1298-12b
	Petroleum Testing	Aromatics	ASTM D1319-15
	Petroleum Testing	Sulfur Content	ASTM D4294-16
	Petroleum Testing	Distillation	ASTM D7345-14
	Petroleum Testing	Flash Point ABLE	IP170-14
	Petroleum Testing	Density	ASTM D1298-12b
	Petroleum Testing	Freezing Point	ASTM D2386-15
	Petroleum Testing	Viscosity -20°C	ASTM D445-15a ASTM D7042-14
	Petroleum Testing	Existent Gum	ASTM D381-12

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	Petroleum Testing	Water Separometer Index	ASTM D3948-14
	Petroleum Testing	Total acidity	ASTM D3242-11
	Petroleum Testing	Electrical Conductivity	ASTM D2624-15
<b>Kerosene</b>	Petroleum Testing	Distillation	ASTM D7345-14
	Petroleum Testing	Flash Point ABLE	IP170-14
	Petroleum Testing	Specific Gravity	ASTM D1298-12b
<b>High Speed Diesel (HSD)</b>	Petroleum Testing	Specific Gravity	ASTM D1298-12b
	Petroleum Testing	Cloud Point	ASTM D2500-16 ASTM D5771-12
	Petroleum Testing	Pour Point	ASTM D97-16

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	Petroleum Testing	Distillation	ASTM D7345-14
	Petroleum Testing	Colour	ASTM D1500-12
	Petroleum Testing	Flash Point PMCC	ASTM D93-15a
	Petroleum Testing	Sulfur Content	ASTM D4294-16
	Petroleum Testing	Kin Viscosity, 40°C	ASTM D445-15a ASTM D7042-14
	Petroleum Testing	Water Content	ASTM D95-13
<b>Jute Batching Oil (JBO)</b>	Petroleum Testing	Specific Gravity	ASTM D1298-12b
	Petroleum Testing	Color ASTM	ASTM D1500-12
	Petroleum Testing	Flash Point PMCC	ASTM D93-15a

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<b>Diesel Fuel Oil (DFO)</b>	Petroleum Testing	Specific Gravity	ASTM D1298-12b
	Petroleum Testing	Kin Viscosity, 37.8°C	ASTM D445-15a
	Petroleum Testing	Flash Point PMCC	ASTM D93-15a
<b>Furnace Fuel Oil (FFO)</b>	Petroleum Testing	Specific Gravity	ASTM D1298-12b
	Petroleum Testing	Kin Viscosity, 50°C	ASTM D445-15a
	Petroleum Testing	Flash Point PMCC	ASTM D93-13
	Petroleum Testing	Water Content	ASTM D95-13
	Petroleum Testing	Pour Point	ASTM D97-16

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	Petroleum Testing	Sulphur Content	ASTM D4294-16
<b>Bitumen</b>	Petroleum Testing	Ductility	ASTM D113-07
	Petroleum Testing	Flash Point COC	ASTM D92-12b
	Petroleum Testing	Loss on Heating	ASTM D6-95
	Petroleum Testing	Penetration	ASTM D 5-0 6
<b>Refinery Waste Water</b>	Waste Water Testing	Chemical Oxygen Demand (COD)	HACH DR/870 Colorimeter, 02/99 1Edition
	Waste Water Testing	Biological Oxygen Demand (BOD)	Instruction manual BOD TRAK-II/02/2010/ Edition 2
	Waste Water Testing	Total Dissolved Solids (TDS)	USEPA 160.1 -1971
	Waste Water Testing	Total Suspended Solids (TSS)	USEPA 160.2-1971

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<b>All Petroleum Products</b>	Petroleum Products Sampling	Sampling from Tanks	ASTM D4057-12
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**Calibration Laboratory**

Accreditation Scope of Attock Refinery Limited, Rawalpindi, Pakistan

Permanent laboratory premises

<b>Field of measurement:</b>			
<b>Measured quantity</b>	<b>Range</b>	<b>Calibration &amp; Measurement Capability (CMC) expressed as an uncertainty (+)</b>	<b>Brief description of measurement and equipment used</b>
<b>Field of measurement: (i) TEMPERATURE MEASUREMENTS</b>			
Liquid in Glass Thermometer	155~170 °C	±0.97 °C	ASTM E1-14 & ASTM E77-07 Digital Stop Watch, temperature calibrator, Digital Resistance Thermometer with Probe # 496016 EQ051 / IEEE-488 / 79016 Ertco Hart, USA Dry TC 650 Bath.
Liquid in Glass Thermometer	80~130 °F	±5.50 °F	ASTM E1-14 & ASTM E77-07 Digital Stop Watch, temperature calibrator, Digital Resistance Thermometer with Probe # 496016 EQ051 / IEEE-488 / 79016 Ertco Hart, USA Dry TC 650 Bath.
Liquid in Glass Thermometer	0~+300 °C	±3.44 °C	ASTM E1-14 & ASTM E77-07 Digital Stop

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			Watch, temperature calibrator, Digital Resistance Thermometer with Probe # 496016 EQ051 / IEEE-488 / 79016 Ertco Hart, USA Dry TC 650 Bath.
Liquid in Glass Thermometer	23~25 °C	±0.22 °C	ASTM E1-14 & ASTM E77-07 Digital Stop Watch, temperature calibrator, Digital Resistance Thermometer with Probe # 496016 EQ051 / IEEE-488 / 79016 Ertco Hart, USA Dry TC 650 Bath.
Liquid in Glass Thermometer	60~160 °F	±1.11 °F	ASTM E1-14 & ASTM E77-07 Digital Stop Watch, temperature calibrator, Digital Resistance Thermometer with Probe # 496016 EQ051 / IEEE-488 / 79016 Ertco Hart, USA Dry TC 650 Bath.
Liquid in Glass Thermometer	0~+400 °C	±1.74 °C	ASTM E1-14 & ASTM E77-07 Digital Stop Watch, temperature calibrator, Digital Resistance Thermometer with Probe # 496016 EQ051 / IEEE-488 / 79016 Ertco Hart, USA Dry TC 650 Bath.
Liquid in Glass Thermometer	-80~+20 °C	±0.59 °C	ASTM E1-14 & ASTM E77-07 Digital Stop Watch, temperature calibrator, Digital Resistance

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			Thermometer with Probe # 496016 EQ051 / IEEE-488 / 79016 Ertco Hart, USA Dry TC 650 Bath.
Liquid in Glass Thermometer	-50~+5 °C	±2.18 °C	ASTM E1-14 & ASTM E77-07 Digital Stop Watch, temperature calibrator, Digital Resistance Thermometer with Probe # 496016 EQ051 / IEEE-488 / 79016 Ertco Hart, USA Dry TC 650 Bath.
Liquid in Glass Thermometer	23~25 °C	±0.64 °C	ASTM E1-14 & ASTM E77-07 Digital Stop Watch, temperature calibrator, Digital Resistance Thermometer with Probe # 496016 EQ051 / IEEE-488 / 79016 Ertco Hart, USA Dry TC 650 Bath.
Liquid in Glass Thermometer	0~370 °C	±1.74 °C	ASTM E1-14 & ASTM E77-07 Digital Stop Watch, temperature calibrator, Digital Resistance Thermometer with Probe # 496016 EQ051 / IEEE-488 / 79016 Ertco Hart, USA Dry TC 650 Bath.
Liquid in Glass Thermometer	20~230 °F	±1.97 °F	ASTM E1-14 & ASTM E77-07 Digital Stop Watch, temperature calibrator, Digital Resistance Thermometer with Probe # 496016

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			EQ051 / IEEE-488 / 79016 Ertco Hart, USA Dry TC 650 Bath.
Liquid in Glass Thermometer	-38~+50 °C	±0.84°C	ASTM E1-14 & ASTM E77-07 Digital Stop Watch, temperature calibrator, Digital Resistance Thermometer with Probe # 496016 EQ051 / IEEE-488 / 79016 Ertco Hart, USA Dry TC 650 Bath.
Liquid in Glass Thermometer	34~42 °C	±0.26 °C	ASTM E1-14 & ASTM E77-07 Digital Stop Watch, temperature calibrator, Digital Resistance Thermometer with Probe # 496016 EQ051 / IEEE-488 / 79016 Ertco Hart, USA Dry TC 650 Bath.
Liquid in Glass Thermometer	-2~+80 °C	±1.05 °C	ASTM E1-14 & ASTM E77-07 Digital Stop Watch, temperature calibrator, Digital Resistance Thermometer with Probe # 496016 EQ051 / IEEE-488 / 79016 Ertco Hart, USA Dry TC 650 Bath.
Liquid in Glass Thermometer	-20~102°C	±0.35 °C	ASTM E1-14 & ASTM E77-07 Digital Stop Watch, temperature calibrator, Digital Resistance Thermometer with Probe # 496016 EQ051 / IEEE-488 / 79016 Ertco Hart, USA

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			Dry TC 650 Bath.
Liquid in Glass Thermometer	58.6~61.4 °C	$\pm 0.57$ °C	ASTM E1-14 & ASTM E77-07 Digital Stop Watch, temperature calibrator, Digital Resistance Thermometer with Probe # 496016 EQ051 / IEEE-488 / 79016 Ertco Hart, USA Dry TC 650 Bath.
Liquid in Glass Thermometer	119.5~124.5 °F	$\pm 0.26$ °F	ASTM E1-14 & ASTM E77-07 Digital Stop Watch, temperature calibrator, Digital Resistance Thermometer with Probe # 496016 EQ051 / IEEE-488 / 79016 Ertco Hart, USA Dry TC 650 Bath.
Liquid in Glass Thermometer	38.6~41.4 °C	$\pm 0.77$ °C	ASTM E1-14 & ASTM E77-07 Digital Stop Watch, temperature calibrator, Digital Resistance Thermometer with Probe # 496016 EQ051 / IEEE-488 / 79016 Ertco Hart, USA Dry TC 650 Bath.
Liquid in Glass Thermometer	97.5~102.5 °F	$\pm 0.32$ °F	ASTM E1-14 & ASTM E77-07 Digital Stop Watch, temperature calibrator, Digital Resistance Thermometer with Probe # 496016 EQ051 / IEEE-488 / 79016 Ertco Hart, USA Dry TC 650 Bath.
Liquid in Glass Thermometer	-21.4~-18.6 °C	$\pm 0.14$ °C	ASTM E1-14 & ASTM E77-07 Digital Stop

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			Watch, Temperature calibrator, Digital Resistance Thermometer with Probe # 496016 EQ051 / IEEE-488 / 79016 Ertco Hart, USA Dry TC 650 Bath.
<b>Field of measurement: (ii) Specific Gravity Measurement</b>			
Glass Hydrometer	0.650-0.700	±0.0009	ASTM E126-13a Zeal Reference Hydrometer, Temperature Controlled Liquid Bath, Magnifying Lens, Hygrometer Cole Parmer CE china
Glass Hydrometer	0.700-0.750	±0.0009	ASTM E126-13a Zeal Reference Hydrometer, Temperature Controlled Liquid Bath, Magnifying Lens, Hygrometer Cole Parmer CE china
Glass Hydrometer	0.750-0.800	±0.0009	ASTM E126-13a Zeal Reference Hydrometer, Temperature Controlled Liquid Bath, Magnifying Lens, Hygrometer Cole Parmer CE china
Glass Hydrometer	0.800-0.850	±0.0009	ASTM E126-13a Zeal Reference Hydrometer, Temperature Controlled Liquid Bath, Magnifying Lens, Hygrometer Cole Parmer CE china
Glass Hydrometer	0.850-0.900	±0.0009	ASTM E126-13a Zeal Reference Hydrometer, Temperature Controlled Liquid Bath, Magnifying Lens, Hygrometer Cole Parmer CE china
Glass Hydrometer	0.900-0.950	±0.0009	ASTM E126-13a Zeal Reference Hydrometer, Temperature Controlled

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			Liquid Bath, Magnifying Lens, Hygrometer Cole Parmer CE china
Glass Hydrometer	0.950-1.000	±0.0009	ASTM E126-13a Zeal Reference Hydrometer, Temperature Controlled Liquid Bath, Magnifying Lens, Hygrometer Cole Parmer CE china
<b>Field of measurement: (iii) Mass</b>			
Mass	0.1 mg – 210g	±0.096	NATA Technical Note 13- User checks and maintenance of laboratory balances NMI Monograph 4, The Calibration of Weights and Balances, E Morris and K Fen, Australian Government National Measurement Institute Standard Weights Comparison, Forceps.

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