PROFICIENCY TESTING SCHEMES 2023-24

BHARAT PETROLEUM CORPORATION LIMITED

MAHARATNA COMPANY

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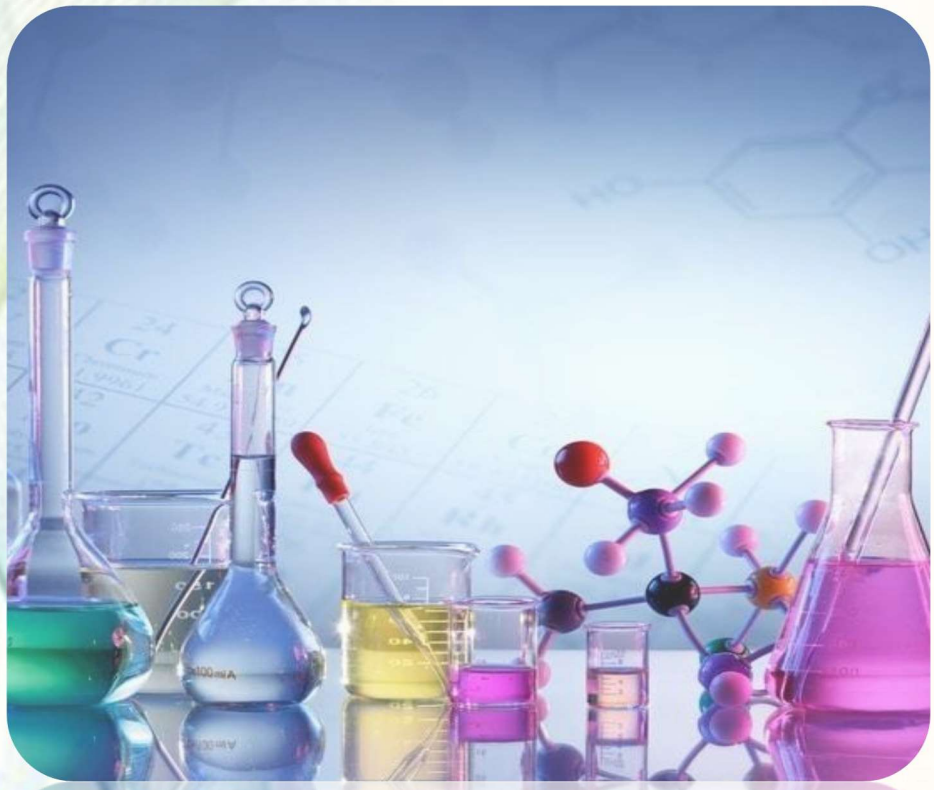

PT & RMP Center

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About Us:

Bharat Petroleum Corporation Limited (BPCL) is a Maharatna PSU under MOP&NG, Govt. of India. Also, BPCL is a Fortune 500 company which is also listed under Forbes 2000 listings, is currently organizing PT programs for the first time in the petroleum industry to cater to the needs of petroleum sector laboratories in the country and adjoining regions. BPCL Proficiency Testing is located at Sewree, Mumbai and specially established to support the demands of ISO/IEC 17025: 2017 accredited laboratories. BPCL has rich experience in conducting Inter Laboratory Programs for the past 12 years which was well received in the industry and BPCL Proficiency Testing successfully accredited as PT Provider under ISO/IEC: 17043:2010 by National Accreditation Board for Testing and Calibration Laboratories (NABL) is a Constituent Board of Quality Council of India **vide Certificate No PC- 1008.**

This accreditation was obtained with the following **objectives.**

- **To help the Laboratories to improve their proficiency level by**
  - Making the PT samples easily accessible
  - Providing samples at affordable cost
- **To avail the opportunity provided by NABL and to establish itself as a reliable PT provider in Southeast Asia.**

What is PT?

Proficiency Testing is a tool for any participating lab to assess its own competency to perform specific tests or measurements.

Assessment of participant performance is done through inter laboratory comparison against **pre-established criteria.** It also helps the customers to understand lab's testing capability.

Why go for BPCL Proficiency Testing?

Labs can avail the proficiency testing organized by BPCL and get following benefits.

- Gain easy access to the PT schemes accredited under ISO/IEC 17043:2010 within the country.
- Can regularly conform to the requirements prescribed by NABL as per ISO/IEC 17025:2017.
- Enjoy cost savings due to affordable pricing.
- Help instituting preventive action measures based on the outcome of PT values.
- Establishing their proficiency levels w.r.t test methods and procedures amongst the peer laboratories.
- Ensuring continuous improvement in the laboratory systems.
- Take steps for sustained staff development.
- Instilling confidence in all the stakeholders.
- Generating secondary reference materials.
- Validation of test results.
- Complying with regulators requirements and accreditation bodies.

Test Programs:

The Programs organized by BPCL include the petroleum products that are commonly tested by the fuel and oil testing laboratories. The PT accreditation covers the following fuels/lubricants and their variants.

1. Motor Gasoline
2. Diesel
3. Aviation Turbine Fuel
4. Fuel Oil
5. Lubricating oil
6. Transformer oil
7. Anhydrous Ethanol
8. Grease

The PT sample is prepared in a rigorous and robust manner comprising the following major activities.

- **Sampling**

  a. Identification and Selection of sample
  b. Testing for homogeneity
  c. Testing for stability
  d. Establishing assigned value
  e. Storage to ensure integrity.
  f. Packing and distribution

- **Analysis of Participant results**

  The test results received from the laboratories are analyzed statistically as per ISO/IEC 17043: 2010 and ISO/IEC 13528:2015. Evaluation is done for each test parameter and statistical analysis is performed to arrive at Robust Mean and Robust 'Z' score compilations.

- **Reports**

  Report containing details of the program, evaluation, laboratory performance would be prepared along with the summary indicating the lab's status amongst the participating laboratories and sent to the individual labs duly coded adhering to the required confidentiality norms.

☞ Program Schedule:

The PT Calendar for 2023-24 is as under

Product		Test Parameter	Range	Test Method	Month of Registration/ Sample testing
Motor Gasoline	1	Aromatics content	5 to 45 %v/v	IS 1448: P-23, ASTM D1319	**Jun-23/ Aug 23**
	2	Distillation	30 to 220 deg C	IS 1448: P-18, ASTM D86	
	3	Distillation Residue	0.1 to 1.5 %v	IS 1448: P-18, ASTM D86	
	4	Sulphur Content	0.1 to 50 mg/kg	ASTM D5453, ISO 13032	
	5	RON	80 to 100	IS 1448: P-27, ASTM D2699	
	6	Gum content	1 to 40 g/m^3	IS 1448: P-29, ASTM D381	
	7	Density at 15 deg C	700.0 to 780.0 Kg/m^3	IS 1448: P-16, ASTM D1298, ASTM D4052	
	8	Ethanol content by water extraction	0 to 25% v/v	IS 2796 (Annexure C)	
Kerosine /ATF	1	Freezing Point	-70 to -30 deg C	IS 1448: P-11, ASTM D2386, ASTM D5972	**Aug-23/ Oct 23**
	2	Naphthalene Content	0.1 to 4% v/v	IS 1448: P-118, ASTM D1840	
	3	Density at 15 deg C	775 to 840 Kg/m^3	IS 1448: P-16, ASTM D1298, ASTM D4052	
	4	Kinematic Viscosity at -20 deg C	1 to 10 mm^2/s	IS 1448: P-25, ASTM D445, ASTM D7042	
	5	Smoke Point	10 to 30 mm	IS 1448: P-31, ASTM D1322, ISO 3014, IP 598	
	6	Distillation	135 to 300 deg C	IS 1448: P-18, ASTM D86	
	7	Distillation, Residue	0.1 to 1.5 %v/v	IS 1448: P-18, ASTM D86	
	8	Sulphur Content	0.005% to 0.35% by m	ASTM D4294, ASTM D5453	
	9	Total Acidity	0.0001 to 0.10 mg KOH/g	IS 1448: P-113, ASTM D3242	
	10	Flash Point (Abel)	30 to 66 deg C	IS 1448:P 20, IP 170, ISO 13736	
	11	Colour (Saybolt)	-16 to 30	IS 1448: P-14, ASTM D156	
	12	Aromatics content	5 to 45 % by V	IS 1448: P-23, ASTM D1319	
	13	Existent Gum	1 to 10 mg/100 ml	IS 1448: P-29, ASTM D381	

Product	Test Parameter		Range	Test Method	Month of Registration/ Sample testing
Lubricant Oil	1	Colour (ASTM)	0.5 to 8 units	ASTM D1500, IS 1448: P-12	**Oct-23/ Nov 23**
	2	Density at 29.5 deg C	0.800 to 1.000 g/ml	IS 1448: P-16, ASTM D1298, ASTM D4052, ASTM D7042	
	3	Flash Point (COC)	130 to 300 deg C	IS 1448: P-69, ASTM D92	
	4	Flash Point (PMCC)	65 to 120 deg C	IS 1448: P-21, ASTM D93	
	5	Kinematic Viscosity at 40 deg C	30 to 400 mm^2/s	IS 1448: P-25, ASTM D445, ASTM D7042	
	6	Kinematic Viscosity at 100 deg C	1 to 70 mm^2/s	IS 1448: P-25, ASTM D445, ASTM D7042	
	7	Pour Point	-38 to 0 deg C	IS 1448: P-10, ASTM D97, ASTM D 5949	
	8	Total Acid Number	0.1 to 5 mg.KOH/g	ASTM D664	
	9	Total Base Number	0.1 to 40 mg KOH/g	ASTM D2896, IS 1448: P-86	
	10	Viscosity Index	85 to 150	ASTM D2270	
	11	Water content	10 to 500 mg/kg	ASTM D6304	
	12	Water content	0.05 to 10 % by vol	IS 1448: P-40, ASTM D95	
Grease	1	Drop Point	150 to 370 deg C	ASTM D2265	**Nov-23/ Dec 23**
	2	Consistency of lubricating Grease at 25 $\pm$ 0.5 deg C	160 to 400 units	ASTM D217/ IS 1448: P-60	

Product		Test Parameter	Range	Test Method	Month of Registration/ Sample testing
Transformer oil	1	Break down Voltage	30 to 100 kv	IS 6792	**Nov-23/ Dec 23**
	2	Density at 20 deg C	0.8 to 0.9 g/ml	IS 1448: P-16	
	3	Di-electric dissipation factor (TAN Delta) at 90 deg C	0.000 to 0.005 units	IS 16086	
	4	Flash point PMCC	50 to 250 deg C	IS 1448 :P-21, ASTM D93	
	5	Kinematic Viscosity at 40 deg C	3 to 200 mm^2/s	IS 1448: P-25	
	6	Pour Point	-39 to +21 deg C	IS 1448: P-10, ASTM D97, ASTM D5949	
	7	Sulphur Content	0.005 to 0.5% by m	ASTM D4294	
	8	Water content	10 to 1000 mg/kg	IEC 60814	
Diesel Fuel	1	Cetane index (Calculated)	40 to 65	D 4737, ISO 4264	**Dec-23/ Feb 24**
	2	Density at 15 deg C	800.0 to 870.0 Kg/m3	IS 1448: P-16, ASTM D 1298, ASTM D4052, ISO 3675, ASTM D7042	
	3	Distillation	135 to 370 deg C	IS 1448: P-18, ASTM D86, ASTM D7345	
	4	Distillation Residue	0.1 to 5 %v/v	IS 1448: P-18, ASTM D86, ASTM D7345	
	5	Flash Point (Abel)	30 to 66 deg C	IS 1448:P 20, IP 170, ISO 13736	
	6	Flash Point (PMCC)	65 to 120 deg C	ISO 2719, IS 1448: P-21, ASTM D93	
	7	Kinematic Viscosity at 40 deg C	1.0 to 6.0 mm2/s	ISO 3104, IS 1448: P-25, ASTM D445, ASTM D7042	
	8	Pour Point	-21 to 9 deg C	ISO 3015, IS 1448: P-10, ASTM D97, ASTM D5949	
	9	Sulphur Content	0.0001 to 2000 mg/kg	ASTM D5453, ISO 13032	
	10	Water content	10 to 500 mg/kg	ASTM D6304	
	11	Total Acid Number	0.1 to 0.5 mg.KOH/g	ASTM D664	

Product	Test Parameter		Range	Test Method	Month of Registration/ Sample testing
Ethanol	1	Acidity as CH3COOH	1 to 40 mg/l	Annex D of IS 15464	**Jan-24/ Feb 24**
	2	Aldehyde content as CH3CHO	0 to 60 mg/l	Annex E of IS 15464	
	3	Ethanol content at 15.6/15.6 deg C	94 to 100 % v/v	Annex B of IS 15464	
	4	Relative density/Specific gravity at 15.6/15.6 deg C	0.6600 to 1.0000	Annex A of IS 15464	
Fuel oil	1	Density at 15 deg C	900 to1000 kg/m^3	IS 1448: P-16, ASTM D1298, ISO 3675	**Jan-24/ Mar 24**
	2	Kinematic viscosity at 50 deg C	80 to 400 mm^2/s	ISO 3104, IS 1448: P-25,	
	3	Ash content	0.0001 to 0.1 % wt.	ISO 6245, ASTM D482	
	4	Pour point	-15 to 21 deg C	ISO 3016, IS 1448: P-10, ASTM D97	
	5	water content	0.05 to 5.0 % by vol	IS 1448: P-40, ASTM D95, ISO 3733	
	6	Flash point (PMCC)	66 to 120 deg C	ISO 2719, IS 1448: P-21, ASTM D93	
	7	Sediments	0.001 to 0.25 %m	IS 1448: P-30, ASTM D473	
	8	Sulphur Content	0.1 to 4.0 % by m	ASTM D4294	

☞ Eligibility Criteria

Any organization having testing facility for any of the test parameters of the PT scheme can participate.

☞ How to Join

Laboratories interested in joining the program should contact the PT Coordinator for registration and other details confirmation.

Vidyasagar Kamble, PT Coordinator
Phone No.: (022) 24176325 , Mob.No.9586107012
Email Id: kamblevs@bharatpetroleum.in

Alternate mail ids for such queries are madhuranim@bharatpetroleum.in / siddhartham@bharatpetroleum.in

Detailed SOP of registration for the published PT scheme is available in our site www.bharatpetroleum.in under Proficiency testing. For further information and queries interested laboratories can contact PT coordinator.

☞ Participating Fees

The participation fee is INR 15,000 /- (in words Fifteen thousand rupees only) plus 18% GST per scheme for each product.

☞ Confidentiality

The identity of participants in a proficiency testing scheme shall be confidential and known only to persons involved in the operation of the proficiency testing scheme. In exceptional circumstances, when a regulatory authority requires proficiency testing results to be directly provided to the authority by the proficiency testing provider, the affected participants shall be notified of this action in writing.

☞ Other Important Information

PT samples are sent to the participants by BPCL PT within a reasonable time. Labs shall refer to the instruction sheet given along with PT scheme in the PT portal where test parameters are to be conducted and other information is available.

The final statistical summary reports will be made available electronically within approximately 45-50 working days after submission of test results by participating laboratories in the PT portal itself.

☞ Post PT Services

If participating lab requires any assistance w.r.t ISO/IEC 17025:2017 and allied areas, BPCL PT would undertake the same on negotiable terms.

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