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| PETROLEUM, COAL & RELATED PRODUCTS DEPARTMENT |
| RECOMMENDATIONS |
| PCD 01 : 1 : P1 - Panel for Instrumental Test Methods  | 3rd Meeting |
| Convener: Shri Santosh Dhaku Bhogale, HPCL | Member Secretary: Shri Hari Mohan Meena |
| Meeting mode: Virtualheld on08th October 2024 |

**ITEM 0 WELCOME AND INTRODUCTORY REMARKS**

**Welcome by BIS**

Shri Hari Mohan Meena, Scientist ‘C’ (PCD), welcomed the members to the 3rd meeting of the PCD 01: 01: P1 - Panel for Instrumental Test Methods and introduced the newly appointed convener, Shri Santosh Dhaku Bhogale.

**Opening Remarks by the Convener**

Shri Santosh Dhaku Bhogale, Convener of PCD 01: 01: P1, welcomed the members to the meeting and provided a brief overview of the panel's earlier proceedings.

**ITEM 1 PROCEEDINGS OF THE MEETING**

1. The previously identified (during 1st meeting) list of ISO standard test methods to be adopted under the dual numbering system, along with ASTM/IP standards, was reviewed by the panel. The current status, along with recommendations, is given in Annex I and Annex II.

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| Sl. No. | Subject | Recommendations |
| 1 | Identified ISO Test methods to be adopted in dual numbering system (Annex I) |  |
| 2 | Identified test methods to prepare Indian Standards (Annex II) |  |

1. The panel noted that following test methods have been published.

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| **S. No.** | **Method Number**  | **Description**  | **ASTM/ IIP/ISO STANDARD** | **Status/ Recommendations of WG during 3rd meeting, held on 08-10-2024** |
|  | ISO 4264 | Petroleum products -- Calculation of cetane index of middle-distillate fuels by the four variable equation | ISO 4264 | Published (IS 1448 Part 174) |
|  | D6839 | Standard Test Method for Hydrocarbon Types, Oxygenated Compounds, and Benzene in Spark Ignition Engine Fuels by Gas Chromatography | ISO 22854 | Published (IS 1448 Part 181) |
|  | ISO 12937 | Petroleum products -- Determination of water -- Coulometric Karl Fischer titration method | ISO 12937 | Published (IS 1448 Part 182) |
|  | D4529 | Standard Test Method for Estimation of Net Heat of Combustion of Aviation Fuels | ISO 3648 | Published (IS 1448 Part 177) |
|  | ISO 2211 | Standard Test method for  Measurement of colour in Hazen units | ISO 6271 | Published (IS 1448 Part 178) |
|  | D 4530 | Standard Test method for  Measurement of Carbon Residue by MCR Tester | ISO 10370 | Published (IS 1448 Part 189) |
|  | ISO 6297 | Standard Test Methods for Electrical Conductivity of Aviation and Distillate Fuels | ISO 6297 | Published (IS 1448 Part 148)  |
|  | D3120 | Standard Test Method for Trace Quantities of Sulfur in Light Liquid Petroleum Hydrocarbons by Oxidative Micro coulometry | ISO 16591 | Published (IS 1448 Part 180) |
|  | D 4629 | Standard Test method for determination of Nitrogen Content of petroleum products | D 4629 | Published (IS 1448 Part 155) |

1. The panel noted that the following test methods are under development in BIS.

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| **S. No.** | **Method Number**  | **Description**  | **Status/ WG Recommendation during 3rd meeting held on 08-10-2024** |
|  | D 6667 | Standard Test Method for Determination of Total Volatile Sulfur in Gaseous Hydrocarbons and Liquefied Petroleum Gases by Ultraviolet Fluorescence | Under development in BIS (Doc: PCD/01/23728) |
|  | D4815 | Standard Test Method for Determination of MTBE, ETBE, TAME, DIPE, tertiary-Amyl Alcohol and C1 to C4 Alcohols in Gasoline by Gas Chromatography | Under development in BIS (Doc: PCD/01/21247)  |

1. The status of the following working drafts was reviewed and experts of the panel were requested to complete the review by 25th October 2024.

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| **S. No** | **Standard** |  **Recommendations** |
|  | Test Method for Vapor Pressure of Petroleum Products (Mini Method) (ASTM D5191)  | Dr. Vertika, IOCL  |
|  | Determination of aromatic hydrocarbon types in aviation turbine fuels, kerosene type and petroleum distillates—high performance liquid chromatography method with refractive index detection (ASTM D 6379) | Shri Adalazhagan K, BPCL BR  |
|  | Determination of aromatic hydrocarbon types in middle distillates - High performance liquid chromatography method with refractive index detection (IP 391)  | Dr. Dheer Singh, IOCL |
|  | Determination of distillation characteristics of petroleum products by micro distillation method (ASTM D7345)  | Shri RM Prakash, MRPL  |
|  | Evaluation of Lubricity of Aviation Turbine Fuels by using the Ball-on-Cylinder Lubricity Evaluator (BOCLE) (ASTM D5001) | Shri Santosh D Bhogale, HPCL  |
|  | Determination of trace impurities in monocyclic aromatic hydrocarbons with carbon number separation by gas chromatography method | Shri Anil Kumar, BPCL  |
|  | Determination of fatty acid methyl esters (FAME) content, derived from bio-diesel fuel, in aviation turbine fuel — GC-MS with selective ion monitoring/scan detection method  | Shri Narhar Deshpande, Nayara Energy Limited |

1. The following test methods have been identified to transfer to Sub Committee PCD 1:3 as these methods are not instrumental test methods.

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| **S. No.** | **Method Number** | **Description** |
|  | D4176 | Standard Test Method for Free Water and Particulate Contamination in Distillate Fuels (Visual Inspection Procedures) |
|  | D 3338 | Standard Test Method for Estimation of Net Heat of Combustion of Aviation Fuels |
|  | D5452 | Standard Test Method for Particulate Contamination in Aviation Fuels by Laboratory Filtration |
|  | IP 440(ISO 15167) | Liquid petroleum products - Determination of contamination in middle distillates  |

1. The following test methods have been identified to take up in IInd phase.

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| **S. No.** | **Method Number** | **Description** |
|  | D6730 | Standard Test Method for Determination of Individual Components in Spark Ignition Engine Fuels by 100–Metre Capillary (with Precolumn) High-Resolution Gas Chromatography |
|  | D7153 | Standard Test Method for Freezing Point of Aviation Fuels (Automatic Laser Method) |
|  | D3606 | Standard Test Method for Determination of Benzene and Toluene in Spark Ignition Fuels by Gas Chromatography |
|  | IP 579/599 | Liquid petroleum products - Determination of fatty acid methyl ester (FAME) content in middle distillates - Infrared spectrometry Method |
|  | D 1492 | Standard Test Method for determination of the Bromine Index of petroleum products |
|  | IP 565 | Determination of the level of cleanliness of aviation turbine fuel - Portable automatic particle counter method |
|  | IP 577 |  Determination of the level of cleanliness of aviation turbine fuel — Automatic particle counter method using light extinction |
|  | D6730 | Standard Test Method for Determination of Individual Components in Spark Ignition Engine Fuels by 100–Metre Capillary (with Precolumn) High-Resolution Gas Chromatography |

1. The following test methods have been identified to take up in IIIrd phase.

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| **S. No.** | **Method Number** | **Description** |
|  | D 4735 | Standard Test method for  Measurement of Thiophene Content in Benzene and Toluene |
|  | D 3605 | Trace Metals in Gas Turbine Fuels by Atomic Absorption and Flame Emission Spectroscopy |
|  | D 3246 | Standard Test method for  determination of trace Sulfur in petroleum products and LPG |
|  | D 5950 | Standard Test Method for Pour Point of Petroleum Products (Automatic Tilt Method) |

1. The following test methods have been identified to discontinue the preparation of Indian standards because the corresponding method in ASTM/IP standards have already been withdrawn.

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| S. No. | **Method Number**  | **Description**  | **Status/ WG Recommendation during 3rd meeting held on 08-10-2024** |
|  | D 4492 | Standard Test method for determination of Benzene Purity | The ASTM standard has been withdrawn, so there is no longer a need to prepare the IS standard equivalent to it.  |
|  | D 2360 | Standard Test method for  Measurement of Toluene  Purity | The ASTM standard has been withdrawn, so there is no longer a need to prepare the IS standard equivalent to it. |
|  | IP 564 | Determination of the level of cleanliness of aviation turbine fuel - Laboratory automatic particle counter method | Not relevant as current removed from ATF specification DEFSTAN 91-091. Therefore, there is no longer a need to prepare the IS standard equivalent to it. Alternate methods are available as IP 565 & IP 577 which has been already taken up in this list. |

1. **Determination of the scope, time frame and re-nomination of the panel PCD1:1:P1**

Member Secretary of the PCD1 informed about recent directives of the DG BIS on reforms of the BIS Sub committees, panels & working groups. In compliance of these instructions, panel is to be renamed as working group with defined scope and time frame. Therefore, following details are recommended-

Name of WG: Working group to develop Instrumental test methods

Scope: To formulate the Indian standards for new instrumental test methods

Time Frame: 24 months

1. The 4th meeting of the panel has been scheduled for 28th October 2024 at 14:00 pm in virtual mode.