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| | भारतीय मानक ब्यूरो BUREAU OF INDIAN STANDARDS |
| | (PETROLEUM, COAL & RELATED PRODUCTS DEPARTMENT) |
| MINUTES | |
| 2 August 2023, Wednesday, 1000 - 1330 h | |
| Petroleum and their Related Products of Synthesis or Biological Origin Sectional Committee | 50th Meeting |
| Chairperson: Dr. S S V Ramakumar, In Personal Capacity | Member Secretary: Ms. Kreeti Das |

ITEM 0 WELCOME AND INTRODUCTORY REMARKS

0.1 Welcome by BIS

Smt. Meenal Passi, Head, PCD, welcomed all members to the 50th meeting of PCD 03. She requested members to hold the next meeting in physical mode to facilitate face to face interaction. She referred to the communication sent from PCD to all committee members regarding reforms in the structure of the committee. The composition of the committee is to be curtailed to preferably 30 members at most. She also highlighted that as BIS comes under the Ministry of Consumer Affairs, the Committee should keep the consumers' interests foremost while preparing standards.

Smt. Passi apprised the Committee that the President of the Governing Council of BIS, Hon'ble Minister of Consumer Affairs, is taking a keen interest in the working of BIS to promote quality culture in the country. The composition of committees and balance of representation between manufacturers and other stakeholders is also being monitored closely.

She also informed the Committee that green hydrogen mission is picking up pace and Ministry of New and Renewable Energy has requested BIS to develop relevant standards. As hydrogen fuel comes under the scope of PCD 3, she requested members to actively contribute in this area.

0.2 Opening Remarks by the Chairperson

Dr. Ramakumar, Chairperson PCD 03, welcomed all members to the meeting. He informed the Committee that he had attended the workshop conducted by BIS for TC Chairs on revisiting the process of standard making and commended BIS for organizing such interactive workshop. Ideas on improvement of committee work were deliberated upon during the workshop and suggestions were given by participants. The reforms mentioned by Head, PCD, in her welcome remarks have connotations with the suggestions given during the workshop. He requested members to adhere to the new guidelines while contributing to BIS work.

Dr. Ramakumar acknowledged the importance of green hydrogen mission and mentioned that hydrogen as fuel is gaining a lot of traction. He mentioned about the International Conference on Green Hydrogen (ICGH-2023), held in Vigyan Bhawan from 5 - 7 July 2023, organized by the Ministry of New and Renewable Energy (MNRE), in partnership with the Ministry of Petroleum and Natural Gas, Council of Scientific and Industrial Research, Office of Principal Scientific Advisor to Government of India, and the Confederation of Indian Industry. The event was attended by around 2000 delegates. Dr. Ramakumar was the co-curator of the technical program of the conference and lots of inputs were received on standards and safety practices of systems for green hydrogen. The office of Principal Scientific Advisor (PSA) is compiling the outcome of the conference and the



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final report will be made available on websites of MNRE and PSA. He requested all members to study the report as well as to stay updated about international practices and MoRTH guidelines.

Dr. Ramakumar also thanked PCDC Chair for approving the extension of his tenure as Chair of PCD 03, in personal capacity, and sought cooperation from all members in the work of PCD 03.

0.3 The attendance of the meeting is given in **Annex A**.

ITEM 1 CONFIRMATION OF THE MINUTES OF THE 49TH MEETING OF PCD 03

The minutes of the 49th meeting of PCD 03, held in hybrid mode on 3 May 2023, was circulated to all members through BIS portal and email on 26 May 2023. As no comments were received on the minutes, the Committee **CONFIRMED** the minutes, as circulated.

ITEM 2 TITLE, SCOPE AND COMPOSITION OF PCD 03

2.1 The Committee **NOTED** item **2.1** and **2.1.1** of the agenda.

2.2 (a) The Committee **REVIEWED** the scope of PCD 03 as given in item **2.2 (a)** of the agenda and **RECOMMENDED** the following change:

“**SCOPE** – To formulate Indian Standards for terminology; petroleum, petroleum products, biofuels (liquid and gas), fuels produced through synthesis route, specification for natural gas, **hydrogen and other renewable fuels**, diesel exhaust fluids and codes of practice for storage, handling, transport and application.”

b) The Committee **NOTED** that recommendation for transfer of liaison with ISO/TC 193/SC 1 to PCD 01 has been forwarded to PCD 01.

2.2.1 The Committee **NOTED** that nominations have been sought from members of PCD 03:5 for participation in ISO/TC 197 and ISO/TC 197/WG 27.

2.2.2 The Committee **NOTED** the BIS Sectional Committees in liaison with PCD 03.

2.3 The Committee **NOTED** the present composition of PCD 03 as given in Annex I of the agenda, and also **CONSIDERED** items **2.3.1**, **2.3.2**, and **2.3.3** of the agenda. Dr. Ramakumar **DIRECTED** BIS to circulate points mentioned at **2.3.2 (a) to (d)** of the agenda to all members of PCD 03 for information and updating nomination, if required. Member organizations were also requested to inform BIS regarding the expertise of the principal/alternate members and young professionals they have nominated in PCD 03. Thereafter, the panel can meet to review the composition of PCD 03.

Some committee members required clarification on **2.3.2 (c)** regarding tenure of in personal capacity members and representatives of private organizations. Head, PCD, clarified that changing members in personal capacity and representatives from private organizations in technical committees (TCs) is a task set by Ministry of Consumer Affairs for BIS on ePARINAM CAFPD dashboard. This is done keeping in view a balance of stakeholders and diversification of experts as in some cases it is observed that same representatives are nominated by private organizations in several TCs and continue for very long periods. However, while BIS will evaluate memberships from this perspective, due consideration will be given to representatives who have significant contribution in technical work and justification will be given for their retention. Dr. Ramakumar **RECOMMENDED** that the panel for review of composition will take up this matter further.

2.4 The Committee **RECOMMENDED** that the panel for review of composition will take up the co-option requests during its meeting.

**ITEM 3 ACTIVITIES OF PCD 03**

3.1 The Committee **NOTED** the program of work of PCD 03 as given in Annex II of the agenda.

3.2 Decision of Committee on recommendations of PCD 3:SC 1 is given in **Annex II**.

3.3 Decision of Committee on recommendations of PCD 3:SC 5 is given in **Annex III**.

3.4 The Committee **NOTED** item **3.3** of the agenda and **AGREED** to take up standards due for review in 2024 in the next meeting.

3.5 Revision of Pre-2000 Standard

| Sl. No. | Indian Standard | Decision of Committee |
|---------|--|---|
| 1. | IS 11489 : 1985 Specification for heavy petroleum stock Hps | <ul style="list-style-type: none"> The Committee REQUESTED Nayara Energy to prepare the revised draft of the standard and submit the same to BIS by end of August 2023. The Committee RECOMMENDED Nayara Energy to consider the input from CPCB to consider sulphur content in liquid fuel as per MoEF&CC notification dated March 2008 The Committee DIRECTED BIS to circulate the revised draft into WC for 2 months. |

3.6 New Subjects for Standardization**3.6.1 New Proposals Received**

| Sl. No. | New Subject | Decision of Committee |
|---------|---|--|
| 1. | Renewable Diesel | <ul style="list-style-type: none"> The Committee DELIBERATED on the new work item proposal received from Green Joules and RECOMMENDED to refer the subject to Panel 1 under PCD 3:SC 1 – Paraffinic diesel – to take up the proposal as a drop-in fuel |
| 2. | Reference E5, Reference E10 gasoline fuels and Reference B7 diesel | <ul style="list-style-type: none"> The Committee DELIBERATED on the new work item proposals and ACCEPTED the proposals in view of the need for reference fuels for engine testing. The Committee REQUESTED IOCL (R&D) to provide separate working drafts for E5, E10, and B7 to BIS and DIRECTED BIS to circulate the drafts in PCD 3:1 and PCD 3 for concurrence of oil marketing companies (OMCs) and Original Equipment Manufacturers (OEMs). As reference fuels are not commercial fuels and used exclusively by OMCs and OEMs, the Committee RECOMMENDED Sectt to seek appropriate approval from Competent Authority of BIS for publication of these standards without WC, if consensus is achieved within OMCs and OEMs in PCD 3:1 and PCD 3, and approval for printing is given by Convenor PCD 3:1 and Chair PCD 03. |



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| 3. | Standards related to Hydrogen Sector | <ul style="list-style-type: none"> • The Committee DELIBERATED on the recommendation to adopt the following international standards under PCD 03: <ul style="list-style-type: none"> a) API RP 1114: Recommended Practice for the Design of Solution-Mined Underground Storage Facilities b) API RP 1115: Design and Operation of Solution-mined Salt Caverns Used for Liquid Hydrocarbon Storage • The Committee reflected that the organizations and experts represented in PCD 3 and its SCs belong to OMCs, automotive OEMs, petroleum related R&D, chemicals and additives manufacturers, and consumer societies. The Committee does not have the expertise for drafting/adopting standards on design and operation of underground storage facilities for fuel. • The scope of Committee lies within the fold of fuel chemistry, specification, and safe storage of fuel. The term “code of practice for storage” in the scope covers practices for safe storage of the fuel, however, it does not cover design and operation of storage facilities. • As MED has the technical committee for storage of hydrogen as well as mining techniques and equipment, the Committee RECOMMENDED Sectt to refer this subject to MED. |
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ITEM 4 INTERNATIONAL ACTIVITY

4.1 P Membership and Participation

The Committee **REVIEWED** item 4.1 of the agenda and **NOTED** that nominations have been sought from PCD 3:5 for participation in ISO/TC 193 and ISO/TC 255.

4.2 Meetings of ISO Committees

The Committee **NOTED** the information about meeting of ISO/TC 255 in December 2023 and meeting of ISO/TC 28 and its SCs in September 2024.

ITEM 5 DATE AND PLACE OF NEXT MEETING

The Committee **NOTED** the annual meeting calendar of PCD 03 and the tentative date for next PCD 03 meeting.

The Committee **DECIDED** to convene every alternate meeting in physical mode, hence, the next meeting will be in physical mode.

ITEM 6 VOTE OF THANKS

The meeting ended with a vote of thanks from BIS to Chairperson and all members for their participation and contribution.



ANNEX A
Meeting Attendance
(Clause 0.3)

Committee Members:


1. Dr. S S V Ramakumar, In Personal Capacity & Chairperson, PCD 03
2. Shri Faustino V, Ashok Leyland Limited, Chennai
3. Shri Mahesh P, Ashok Leyland Limited, Chennai
4. Shri R R K Kishore, Association of State Road Transport Undertakings, New Delhi
5. Shri Yogesh. R. Mahajan, Bajaj Auto Limited, Pune
6. Shri C Shanmuganathan, Bharat Petroleum Corporation Limited, Mumbai
7. Shri R Subramanian, Bharat Petroleum Corporation Limited, Mumbai
8. Shri N. S. Balamukundan, Bio Diesel Association of India, Mumbai
9. Dr. A R Shukla, Biogas Forum India, New Delhi
10. Shri Fredrick A, Bosch Limited, Bengaluru
11. Shri K Arunachalam, Centre for High Technology, New Delhi
12. Shri Vivek Chattopadhyaya, Centre for Science and Environment, New Delhi
13. Dr. Sitaram Dixit, Consumer Guidance Society of India, Mumbai
14. Shri H Ramakrishnan, CPCL, Chennai
15. Dr. Srinivas Padala, CSIR-IIP
16. Dr. Saleem Farooqui, CSIR-IIP
17. Shri Santosh Namdeo, Directorate General of Aeronautical Quality Assurance, New Delhi
18. Shri Dharmendra Singh Yadav, Directorate General of Civil Aviation, New Delhi
19. Shri Rakesh Kumar, Directorate General of Civil Aviation, New Delhi
20. Shri R. Shanmugavel, DRDO - Centre for Military Airworthiness and Certification, Bengaluru
21. Shri Rakesh Sharma, Hero Motocorp Limited, New Delhi
22. Shri Rohit Kumar Gupta, Hindustan Petroleum Corporation Limited, Mumbai
23. Shri Santosh Bhogale, Hindustan Petroleum Corporation Limited, Mumbai
24. Shri Shitanshu Pati Tripathi, Hindustan Petroleum Corporation Limited, Mumbai
25. Dr Ajay Kumar Arora, Indian Oil Corporation (R and D Centre), Faridabad
26. Shri R. K. Kaushik Singha, IOCL Refineries and Pipelines, New Delhi
27. Dr. Y S Jhala, IOCL Refineries and Pipelines, New Delhi
28. Shri A S Krishnamoorthy, IOCL (Mktg), Mumbai
29. Shri Manish Malhan, IOCL (Mktg), Mumbai
30. Dr. Y P Rao, In personal capacity
31. Shri Anand Redkar, Lubrizol India Ltd., Mumbai
32. Shri R Ramaprabhu, Mahindra & Mahindra, Mumbai
33. Shri Ajay Kumar, Maruti Udyog Ltd., Gurugram
34. Shri Harsh Jaiswal, Maruti Udyog Ltd., Gurugram
35. Shri Rajesh Manocha, Ministry of Petroleum and Natural Gas, New Delhi
36. Shri Milan Vasoya, Nayara Energy Limited, Mumbai
37. Shri Pratik Shah, Nayara Energy Limited, Mumbai
38. Shri Sabyasachi Kumar, Nayara Energy Limited, Mumbai
39. Shri Dinesh S R Reddy Kakuturi, Oil and Natural Gas Corporation Limited, New Delhi
40. Shri K Balasubramanian, Reliance India Ltd., Mumbai
41. Dr. Sandeep Garg, Society of Indian Automobile Manufacturers (SIAM), Delhi
42. Shri Shailendra Dewangan, Tata Motors Limited, Pune

BIS Secretariat

1. Smt. Meenal Passi, Sc. F & Head, PCD
2. Ms. Kreeti Das, Sc. C, PCD
3. Shri Hari Mohan Meena, Sc. C, PCD



Annex II

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|  | भारतीय मानक ब्यूरो BUREAU OF INDIAN STANDARDS |
| | (PETROLEUM, COAL & RELATED PRODUCTS DEPARTMENT) |
| MINUTES | |
| 1 August 2023, Tuesday, 1030 - 1400 h | |
| Automotive, Aviation and Industrial Fuels Subcommittee, PCD 3:1 | 37th Meeting |
| Convenor: Dr Y.P. Rao, In personal Capacity | Member Secretary: Ms. Kreeti Das |

Item 1 OPENING OF THE MEETING

1.1 Welcome address

On behalf of BIS, Ms. Kreeti Das, Sc.C, PCD welcomed all members to the 37th meeting of PCD 03:1.

1.2 Opening remarks by the Convenor

Dr. Y P Rao welcomed all members to the meeting. He requested members to take up priority items, keep discussions brief, and cooperate in completing the meeting timely. He also requested members to consider end consumers' interest while deliberating on issues.

1.3 The attendance of the meeting is given in **Annex A**.

Item 2 TITLE, SCOPE AND COMPOSITION OF PCD 03:1

2.1 The Subcommittee **REVIEWED** the composition of PCD 3:1 and items **2.2** and **2.3** of the agenda and **RECOMMENDED** to withdraw organizations that have 0/3 attendance, except those organizations present in current meeting, and to seek interest for participation and updated nomination from organizations with 1/3 participation.

COMMITTEE DECISION: The Committee **AGREED** with the recommendation of Subcommittee

2.2 The Subcommittee **NOTED** item **2.4** and **2.5** of the agenda.

Item 3 ACTIVITIES OF AUTOMOTIVE, AVIATION AND INDUSTRIAL FUELS SUBCOMMITTEE, PCD 3:1

3.1 The Subcommittee **NOTED** item **3.1** of the agenda.

3.2 Draft Standards/Amendments for Finalization

| Sl. No. | Indian Standard/Document Number | Recommendations of Subcommittee |
|---------|---|---|
| i. | PCD 03 (20736)C First Revision of IS 16634 : 2017 | <ul style="list-style-type: none"> The Subcommittee NOTED the status of the project that it has been finalized and sent for printing. |



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| | E85 Fuel Blend of Anhydrous Ethanol and Gasoline - Specification | |
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3.3 Draft Standards/Amendments for Approval for Wide Circulation

| Sl. No. | Indian Standard/Document Number | Recommendations of Subcommittee |
|---------|---|--|
| 1. | <p>PCD 03 (19658)C</p> <p>Seventh Revision of IS 1460 : 2017</p> <p>Automotive Diesel Fuel – Specification</p> | <ul style="list-style-type: none"> • The Subcommittee NOTED that Panel 5 under convenorship of Dr. Ajay Gupta, IIP, met on 17 July 2023, and was attended by all OMCs, except BPCL and HPCL, as well as OEMs and agreed for inclusion of following footnote under Table 1: <i>“Fuel should be free from chloride or chlorinated materials and metallic additives. In case of any dispute raised by consumer on Chloride content in the fuel (above xx mg/kg), representative fuel sample collected at the point of delivery or point of dispensing can be tested by Wavelength Dispersive X-Ray Fluorescence (WDXRF) or Energy Dispersive X-Ray Fluorescence (EDXRF) or micro coulometric technique by a competent testing laboratory, and compared with retention sample at Oil Marketing Company (OMC) terminal and decided”</i> • SIAM informed the limit value of 5 mg/kg for chloride content during the meeting. OMCs informed that testing is required for concurring on the value of 5 mg/kg. Hence, Subcommittee RECOMMENDED OMCs to carry out testing of samples at refinery end and retail outlet for chloride value and set a deadline of 15 September 2023 for data from OMCs. In absence of any data from OMCs by the set deadline, the statement, as above, will be added as footnote under Table 1 and revised draft circulated into 2nd WC for a period of 1 month. • Convenor informed that the term “compared with retention sample at OMC” is not required in the statement. • Some members required clarification on “competent testing laboratory” and it was clarified that list of laboratory is provided in Schedule III of the Motor Spirit and High Speed Diesel (Regulation of Supply, Distribution and Prevention of Malpractices) Order of MoPNG <p>COMMITTEE DECISION: The Committee <i>AGREED</i> with the recommendation of Subcommittee</p> |
| 2. | <p>IS 2796 : 2017</p> <p>Motor gasoline - Specification (Sixth Revision)</p> | <ul style="list-style-type: none"> • In the last meeting, Dr. Ramakumar, Chair PCD 03, had informed that he will consult with MoPNG and come back with his decision on the amendment for regular RON 95 for E10. • Hence, the Subcommittee referred the subject to PCD 03 for discussion. <p>COMMITTEE DECISION: Dr. Ramakumar informed that he had discussion with Secretary, MoPNG regarding the amendment and Secretary, MoPNG, was keen to introduce RON 95 for E10 in the standard. He requested Dr. Jhala to inform consolidated view of OMCs.</p> |



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| | | <p>Dr. Jhala informed that an urgent amendment may be issued for addition of RON 95 for E10 with two-tier certification details only. He also suggested that he is preparing a revision of IS 2796 and the revision of the standard may be taken up following the publication of the amendment.</p> <p>Dr. Ramakumar solicited comments from Dr. Y P Rao, Convenor, PCD 3:1. Dr. Rao recommended that considering urgency for incorporation of RON 95 for E10 and deletion of BS IV, an amendment needs to be issued at the earliest. Regarding revision of IS 2796, when the revised draft is provided by Dr. Jhala, it will be circulated and comments will be taken up by PCD 3:1. Dr. Rao also recommended that the two-tier certification clause be included in the revised draft rather than amendment because this issue is not discussed yet in PCD 3:1.</p> <p>Hence, major changes proposed in the draft amendment:</p> <p>A) Inclusion of regular RON 95 for E10 as directed by MoPNG in their OM</p> <p>B) Removal of BS IV category</p> <p>C) RON 91 to be retained only in base gasoline (upto E5)</p> <p>Dr. Ramakumar agreed with the recommendation of Dr. Rao and requested him to prepare the draft amendment and share with him through BIS. The draft amendment will be examined by Dr. Ramakumar, in consultation with Secretary, MoPNG. Thereafter, Dr. Ramakumar will provide his concurrence on the draft amendment.</p> <p>It was also strongly recommended by Convenor, PCD 3:1, and Chair, PCD 03, that considering urgency of the amendment in the backdrop of E20 blending target by 2025, BIS may proceed with direct publication of the amendment without WC once approval of Convenor, PCD 3:1, and Chair, PCD 3, is obtained.</p> <p>BIS informed that, being a WTO-TBT signatory and national standards body of India, it is not recommended to process a draft standard/amendment having technical changes for publication without circulation. However, based on technical justification and endorsement by Chair, PCD 03, the proposal will be put up for approval to Competent Authority of BIS.</p> |
| 3. | <p>IS 1593 : 2018 Fuel oils - Specification (Third Revision)</p> | <ul style="list-style-type: none"> The Subcommittee NOTED that the revised draft of the standard is under wide circulation with document number PCD 03 (22730) WC, ending on 22 August 2023. |
| 4. | <p>IS 1459 : 2018 Kerosene - Specification (Fourth Revision)</p> | <ul style="list-style-type: none"> The Subcommittee NOTED the status of the project. |
| 5. | <p>IS 16861 : 2018 High flash high speed diesel fuel – Specification</p> | <ul style="list-style-type: none"> The Subcommittee NOTED the status of the project. |



| Sl. No. | Indian Standard/Document Number | Recommendations of Subcommittee |
|---------|---|--|
| 1. | IS 1571 : 2018 Aviation turbine fuels kerosene type jet - A - 1 - Specification Tenth Revision | <ul style="list-style-type: none"> In previous meeting, the Subcommittee had RECOMMENDED to take up revision of the standard to align with latest DEFSTAN and REQUESTED Dr. Jhala and Shri Manish Malhan to provide the revised draft. Dr. Jhala informed that he will provide the revised draft by end of August 2023. Regarding the issue of concerns raised by airline OEMs, FAA, and EASA regarding reference to ISO test method standards and Indian test method standards in IS 1571 and consequent regulatory clearance problems in Europe/USA, Dr. Jhala informed that a joint meeting of OMCs with DGCA is scheduled in near future and all points related to IATA, along with the above issue, will be discussed in the meeting. Outcome of the meeting will be informed by Dr. Jhala to PCD 3:1 through BIS. <p>COMMITTEE DECISION: The Committee <i>NOTED</i> the status of the subject.</p> |
| 2. | PCD3(17838)P Automotive fuels — Paraffinic diesel fuel from synthesis or hydrotreatment — Specification | <ul style="list-style-type: none"> The Subcommittee expressed concern over no progress in the work of the panel The Subcommittee REQUESTED Convenor of Panel 1 – Dr. Saleem Farooqui – to provide the consolidated report of the tests carried out at IIP using paraffinic diesel in automobile as well as the updated draft with different methodologies of production of paraffinic diesel within a week's time The Subcommittee REQUESTED BIS to circulate the report and the updated draft among panel members for examination and thereafter to call a meeting of the panel <p>COMMITTEE DECISION: The Committee <i>AGREED</i> with the recommendation of the Subcommittee.</p> |

3.5 Comments on Published Indian Standards

| Sl. No. | Indian Standard | Recommendations of the Subcommittee |
|---------|---|---|
| 1. | IS 17021 : 2018 E 20 fuel - Admixture of anhydrous ethanol and gasoline - As fuel for spark ignited engine powered vehicles - Specification | <ul style="list-style-type: none"> The Subcommittee NOTED that amendment to the standard is under WC with document number PCD 03 (22875), ending on 9 August 2023. The Subcommittee DELIBERATED on the comments received on the standard and recommendations of Panel 6, as given in MoM of the Panel 6 meeting held on 21 July 2023. The recommendations of the Subcommittee for comments related to “mandatory conformance of base gasoline to IS 2796”, and “colour” are given in Annex B. <p>COMMITTEE DECISION: Decisions of Committee also given in <i>Annex</i></p> |



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| 2. | IS 17821 : 2022 Ethanol as a fuel for use in positive ignition engine powered vehicles specification | <ul style="list-style-type: none"> The Subcommittee NOTED the status and REQUESTED Panel 6 to take up the comments on the standard in due time |
| 3. | IS 17586 : 2021 E12 and E15 Fuel - Admixture of Anhydrous Ethanol and Motor Gasoline - For Positive Ignition Engine Powered Vehicles - Specification | <ul style="list-style-type: none"> The Subcommittee DELIBERATED on sl. no. 3 of item 3.5 and sl. no. 6 of item 3.7 of the agenda and agreed with the view point of SIAM on relevance of standard on E12 and E15 as E20 implementation has been fast-tracked. Hence, the Subcommittee RECOMMENDED BIS Sectt to write to Secretary, MoPNG, seeking their inputs on relevance of IS 17586 in present scenario and with the proposal to archive the standard. Draft letter prepared by BIS to be vetted by Convenor PCD 3:1 before sending to MoPNG. An archived standard is not withdrawn, but kept in safe custody without the need for periodic maintenance (revision/review), and can be made operational whenever a need is felt. <p>COMMITTEE DECISION: The Committee AGREED with the recommendation of the Subcommittee.</p> |
| 4. | IS 17081 : 2019 Aviation turbine fuel (Kerosene Type, Jet A - 1) containing synthesized hydrocarbons - Specification | <ul style="list-style-type: none"> The Subcommittee NOTED the status and REQUESTED Dr. Jhala to provide the draft amendment by end of August 2023 The Subcommittee RECOMMENDED BIS to get the draft amendment approved from the Convenor of the Subcommittee and the Chair of PCD 03 and finalize it for printing as only editorial corrections are required. <p>COMMITTEE DECISION: The Committee AGREED with the recommendation of the Subcommittee.</p> |

3.6 New Subjects for Standardization

| Sl. No. | New Subject | Subcommittee Recommendation |
|---------|---------------------------------------|--|
| 1. | M85 Fuel Grade - Specification | <ul style="list-style-type: none"> Dr. Abraham informed the Subcommittee that he will provide the working draft by end of August 2023. Dr. Garg informed that SIAM will seek clarification from Brazil and US on whether the existing flex fuel vehicles are able to use both E85 and M85 in the same engine/vehicle and inform BIS by end of August 2023. <p>COMMITTEE DECISION: The Committee NOTED.</p> |
| 2. | MD95 Methanol | <ul style="list-style-type: none"> The Subcommittee NOTED the status and REQUESTED Panel 6 to examine the summary report of International Energy Agency – Advanced Motor Fuels (IEA-AMF) and give final recommendation to the Subcommittee on MD95 initiative. <p>COMMITTEE DECISION: The Committee NOTED.</p> |
| 3. | Methanol Fuel for Cook | <ul style="list-style-type: none"> The Subcommittee NOTED the status |



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| | <p>Stoves</p> <p>Ethanol for use as a fuel for cooking/heating purposes</p> | <ul style="list-style-type: none"> Considering urgency of the subject and promotion of ethanol and methanol as cooking fuel by Niti Aayog, the Subcommittee RECOMMENDED BIS to follow up with Prof. Muthukumar, IIT Guwahati, and SIIR, for outdoor flammability studies and in-house emission studies, respectively, and convene a meeting of the panel at the earliest <p>COMMITTEE DECISION: The Committee AGREED with the recommendation of the Subcommittee.</p> |
| <p>4.</p> | <p>Pyrolysis Oil</p> | <ul style="list-style-type: none"> The Subcommittee NOTED the status The Subcommittee REQUESTED IOCL R&D to provide a nomination for the panel and RECOMMENDED BIS to follow up with Dr. N S M Reddy, IIT Roorkee, for approving the draft letter prepared by BIS for tyre manufacturers <p>COMMITTEE DECISION: Dr. Ramakumar informed that Dr. Ajay Ku. Arora will represent IOCL R&D in the panel for pyrolysis oil. He also recommended that the draft letter may be vetted by Dr. Piyali Das, TERI, who is also a member of the panel.</p> |
| <p>5.</p> | <p>MD 15 - Admixture of Methanol with Diesel fuel for compression ignition powered engine vehicles.</p> | <ul style="list-style-type: none"> The Subcommittee NOTED the status and RECOMMENDED BIS to follow up with Dr. Arora for the working draft. <p>COMMITTEE DECISION: The Committee REQUESTED Dr. Arora to provide the draft by end of August 2023 and the draft will be taken up in Panel 6 of PCD 3:1 for discussion. The Committee RECOMMENDED PCD 3:1 to co-opt CPCL in panel 6 as CPCL is proposed to be blending hub for MD15.</p> <p>Shri Ramaprabhu raised a concern that before introducing a new fuel, SIAM must be approached for comprehensive participation of OEMs. Dr. Ramakumar clarified that the trial study for MD15 was headed by Niti Aayog. However, the point of wider participation of OEMs through SIAM is well noted.</p> |

3.7 Technical Issues

| Sl. No. | Subject | |
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| <p>1.</p> | <p>Flash Point Studies of Diesel</p> | <ul style="list-style-type: none"> The Subcommittee REQUESTED Chair PCD 03 to provide an update on the list of experts for workshop on flash point studies of diesel <p>COMMITTEE DECISION: Dr. Ramakumar informed that he has contacted Ms. Vicky Villena-Denton, Editor-in-Chief and CEO of Fuel and Lube Asia Magazine, and she is expected to provide the list within 10 days' time.</p> |
| <p>2.</p> | <p>Study on impact of increased oxygen content in E20 fuel on emissions</p> | <ul style="list-style-type: none"> Convenor of Panel 6 under PCD 3:1 informed that OMCs have been requested to share data on the comments received on IS 17021 and this issue will also be deliberated and concluded in the upcoming panel meetings based on data shared by members |



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| | | COMMITTEE DECISION: The Committee <i>AGREED</i>. |
| 3. | IS 17076 : 2019 M15 fuel - Admixture of anhydrous methanol and motor gasoline as fuel for spark ignited engines - Specification | <ul style="list-style-type: none"> The Subcommittee REQUESTED Chair PCD 03 to provide an update on the outcome of testing at ARAI <p>COMMITTEE DECISION: Dr. Ramakumar informed that testing of M15 fuel is complete at ARAI. However, due to inconsistency observed in one test vehicle, repeat tests are being carried out. Final outcome may be available by next meeting of PCD 03.</p> |
| 4. | Merging of IS 17021 with IS 2796 | <ul style="list-style-type: none"> The Subcommittee DELIBERATED on the recommendation of few members to merge IS 17021 with IS 2796 as E10 is already covered under IS 2796 However, the Subcommittee RECOMMENDED not to merge the standards as gazette notifications, CMVR regulations, and other statutory documents have mentioned separate IS numbers for E10 (IS 2796) and E20 (IS 17021) <p>COMMITTEE DECISION: The Committee <i>AGREED</i> with the recommendation of the Subcommittee.</p> |

Item 4 DATE AND PLACE FOR THE NEXT MEETING

The Subcommittee **NOTED** the annual meeting calendar of PCD 03 and the tentative date for next PCD 03:SC 1 meeting.

The Subcommittee **DECIDED** to convene every alternate meeting in physical mode, hence, the next meeting will be in physical mode.

Item 5 VOTE OF THANKS

The meeting ended with a vote of thanks from BIS to Convenor and all members for participation and their contribution.



ANNEX A
Meeting Attendance
(Clause 1.3)

Subcommittee Members:

1. Dr. Y P Rao, In personal capacity (Convenor)
2. Shri M I Jamadar, ARAI, Pune
3. Shri V Faustino, Ashok Leyland Limited, Chennai
4. Shri Senthilkumar G, Ashok Leyland Limited, Chennai
5. Shri Yogesh Mahajan, Bajaj Auto Ltd., Pune
6. Shri Ramesh Goykar, Bajaj Auto Ltd., Pune
7. Shri A. Fredrick, Bosch Ltd., Bengaluru
8. Shri Mella Lokesh Kumar, BPCL, Mumbai
9. Shri C Shanmuganathan, BPCL, Mumbai
10. Shri R Subramanian, BPCL, Mumbai
11. Shri N P Singh, Centre for High Technology, New Delhi
12. Shri S R Kulkarni, Centre for High Technology, New Delhi
13. Shri H Ramakrishnan, CPCL, Chennai
14. Dr. Saleem Farooqui, CSIR-IIP, Dehradun
15. Shri Vivek Chattopadhyay, Centre for Science and Environment, New Delhi
16. Shri Dharmendra Singh Yadav, DGCA, New Delhi
17. Dr. O P Singh, DGQA, Kanpur
18. Shri Shitanshu Pati Tripathi, HPCL, Mumbai
19. Shri Santosh Bhogale, HPCL, Mumbai
20. Shri K R Krishna, HPCL R&D, Bengaluru
21. Shri Rakesh Sharma, Hero Motocorp Ltd., New Delhi
22. Dr. Mathew Abraham, In personal capacity
23. Shri A S Krishnamoorthy, IOCL (Mktg), Mumbai
24. Shri Manish Malhan, IOCL (Mktg), Mumbai
25. Dr. Y S Jhala, IOCL Refineries and Pipelines, New Delhi
26. Shri Adalazhagan K, Kochi - BPCL Refineries Limited, Kochi
27. Shri Anand Redkar, Lubrizol India Ltd., Mumbai
28. Shri R Ramaprabhu, Mahindra & Mahindra, Mumbai
29. Ms. Jyothi Prasanth, Mangalore Refinery and Petrochemical Ltd., Mangalore
30. Shri R M Prakash, Mangalore Refinery and Petrochemical Ltd., Mangalore
31. Shri Ajay Kumar, Maruti Udyog Limited, Gurugram
32. Shri Harsh Jaiswal, Maruti Udyog Limited, Gurugram
33. Shri Ajay Aggarwal, Maruti Udyog Limited, Gurugram
34. Shri Rajesh Manocha, MoPNG
35. Shri Milankumar Vasoya, Nayara Energy, Mumbai
36. Shri Pratik Shah, Nayara Energy, Mumbai
37. Shri Sabyasachi Kumar, Nayara Energy
38. Shri Bimlesh Gupta, Numaligarh Refinery Ltd., Golaghat
39. Shri Parth Jyoti Sharma, Numaligarh Refinery Ltd., Golaghat
40. Shri Srinivas Kothpalli, Numaligarh Refinery Ltd., Golaghat
41. Shri Dinesh Reddy, ONGC, New Delhi
42. Shri K Balasubramanian, Reliance India Ltd., Mumbai
43. Shri Sanjay Tiwari, Reliance India Ltd., Mumbai
44. Shri R V Desai, Reliance BP Mobility Limited, New Delhi
45. Shri Ajay Kumar, Renault Nissan Technology and Business Centre India Private Limited, Chennai
46. Shri K Gnanasekaran, Renault Nissan Technology and Business Centre India Private Limited, Chennai

Petroleum, Coal, and Related Products Department



Bureau of Indian Standards

47. Dr. Sandeep Garg, SIAM, New Delhi

48. Shri N C Sekharan, Ultra Plus Lubes Pvt. Ltd., Mumbai

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50th Meeting of PCD 03

BIS Secretariat

4. Smt. Meenal Passi, Sc. F & Head, PCD

5. Ms. Kreeti Das, Sc. C, PCD

6. Shri Hari Mohan Meena, Sc. C, PCD



Annex B



IS 17021 : 2018 E 20 fuel - Admixture of anhydrous ethanol and gasoline - As fuel for spark ignited engine powered vehicles – Specification

| Sl. No. | Parameter | | Details |
|---------|---|------------------------------------|--|
| 1 | Conformance to Motor Gasoline to IS 2796 | OMC Comments Clause 3.3 | <ul style="list-style-type: none"> OMCs require E20 fuel necessarily conform to IS 17021 irrespective of base gasoline specification and gasoline used to make the E20 blend need not meet IS 2796 specification. Cited cases of in-tank blending happening at refinery and justified. Having such references is a quality give away for the OMCs. |
| | | Panel discussion | <ul style="list-style-type: none"> Convenor mentioned the in-tank blending is happening in few refineries and rest all are terminal blending. Hence, the possibility of provision for in-tank blending cases to delink from IS 2796 to be taken up with PCD 3:1. In the absence of base fuel specification other than IS 2796, delinking of this reference is not possible. |
| | | PCD 3:1 recommendation | <ul style="list-style-type: none"> Refer to main committee PCD 03 for in-tank blending at refinery and decide accordingly |
| | | PCD 3 decision | <ul style="list-style-type: none"> Blending at terminal end: Certificate to be issued at refinery dispatch for base gasoline conforming to IS 2796. Terminal manager certifies quantity of ethanol blended. Blending at refinery end: Ethanol is blended at refinery, certificate to be issued at refinery for E20 as per IS 17021. Then IS 17021 should cover all requirements prescribed in IS 2796, may be checked by Panel 6 under PCD 3:1 |
| 2 | Colour | OMC Comment Table 1 | <ul style="list-style-type: none"> During bulk supply, the ethanol blending is being done at terminal only . During this new dye addition is not feasible so Orange colour is proposed. Change colour from “Red/Green” to “Orange” |
| | | Last PCD 3:1 recommendation | <ul style="list-style-type: none"> Not agreed (Colour is used to differentiate different grades of a particular fuel. Moreover, same colour cannot be used for E10 and E20) |
| | | Panel discussion | <ul style="list-style-type: none"> OMCs highlighted the difficulty of doping different colour dye for E20. Convenor stated; MG 98 grade of E20 is green which is an entirely different colour and not presently dispensed or required. Hence, need not be considered. In the revised draft it is mentioned to be decided by OMC. Rest of all the fuels (E10, E12 and E20) with RON 95 all are red in colour as per existing specification. Hence, red can be standardized for all the RON 95 grades. Moreover, RON 95 grade for E10 is also round the corner for implementation. |



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| | | | <ul style="list-style-type: none"> • OMCs did not agree as (E10) Gasoline is still RON 91 and would like to have orange colour for E20 also considering the ease of terminal operation. It was informed by OMCs that customers do not notice the colour. • OMCs also highlighted the difficulty of doping red colour dye for E20. They cited homogeneity of doping, availability of dye in powder form, and cause staining on filter paper also during the test observed. • The panel convenor decided to refer the issue again to PCD 3:1 |
| | | PCD 3:1 recommendation | <ul style="list-style-type: none"> • From the point of view of end consumer interest, as E20 is not compatible with older vehicles, it was recommended that there should be one colour for E5 and E10, and another colour for E20. Upto E10, the orange dye may be used and for E20, red dye may be used. • However, OMCs feel that once colour, i.e., orange, for all types of gasoline, except premium fuels, will help in their logistics, especially as dispensing pumps are marked clearly about type of gasoline |
| | | PCD 3 decision | <ul style="list-style-type: none"> • The Committee referred the matter back to PCD 3:1 for further deliberation and reaching consensus |
| 3 | E70 Recovery and VLI | OMC Comment Table 1 | <ul style="list-style-type: none"> • Ethanol addition is impacting Recovery of EBMS at 70°C at few of the location. As MS qualities are not similar to each refinery and based on refinery configuration where MS is lighter, this property are impacting final compliance • Change E70 recovery to 10 – 60 (all months) • Change VLI to 1120 (all months) |
| | | Panel discussion | <ul style="list-style-type: none"> • During meeting on 23 Jan 2023, OMCs shared the data on screen showing E70 recovery of E12 and E15 fuel exceeding limit of 58. However, E20 data showed by OMCs had max. value of 57 which is within limit of 58 specified in the standard. • Convenor proposed to keep E70 recovery values as 10 – 58 (all months). For any upward revision, more data of E20 recovery by OMCs is required. • He also requested OEMs also to share data if they have tested E20 fuel. Subsequently decision can be made. • Further it was mentioned by convenor, Ethanol is single boiling fluid at 78 °C, hence there are less chances it will increase the E70 recovery of E20 fuel. • Convenor requested OMCs to directly share as much as possible batch test certificates of E20 fuel to understand the trend and decide increase above 58, if required. Similarly, Convenor asked OMCs to provide data for VLI for the proposed change to 1120 (all months) • During meeting on 21 July 2023, OMCs agreed to provide data in 10 days' time • OMCs enquired from OEMs to check whether one single VLI value will cause any problems in automotive application. OEMs to provide reply in case of any impact making single VLI spec. |
| 4 | Oxygen Content | OMC Comments Table 1 | <ul style="list-style-type: none"> • Reference to MS95 committee recommendation and earlier discussion, this property directly depends on availability of Oxygenates and which impacts oxygen content values. • Oxygen content specification to be revised to 8.0 % Max from current 7.4 % Max. |
| | | Panel discussion | <ul style="list-style-type: none"> • Based on E20 data submitted for by OMCs last year, which had Max. 7.7% of oxygen without MTBE, E20 oxygen content value of Max. 7.6% was already agreed upon by SIAM. • Hence, convenor agreed for changing oxygen content to 7.6% max and included in the draft specification also. It was justified by convenor in the 21st July meeting, Ethanol 19 to 20% will add 6.8 to 7% oxygen to base gasoline. With earlier inputs of OMC even imported gasoline having 0.5% of oxygen, it will meet the 7.6% Max oxygen limit. |




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| | | | <ul style="list-style-type: none"> For any further increase in oxygen content, data needs to be submitted by OMCs and samples will be sought for testing after reviewing the same. |
| 5 | Addition of Water Content | Bosch Comments Table 1 | <ul style="list-style-type: none"> Addition of water content limit protects engine and fuel systems from corrosion & premature failure, Ref. DIN E20 proposal, dated Aug 2021 Water content, mg/kg, max - Max value of 2000 to be included in the table. |
| | | Panel Discussion | <ul style="list-style-type: none"> During meeting on 23 June 2023, data on water content was shown by Bosch to panel members. Convenor requested him to share more water content data along with its effect on fuel injection system to all the panel members. Panel also requested OMCs to monitor fuel samples and each member to share 5 data of E20 fuel moisture content, also OEMs if measured. Subsequent to the data review decision on the limit can be made. Bosch and M&M data of water content received by BIS prior to 21st July meeting. During meeting on 21 July 2023, Bosch and M&M shared data on water content in fuel samples <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  E20 water and E70 data_M&M.pdf </div> <div style="text-align: center;">  E20_India_Survey_June 2023_BIS - Bosch. </div> </div> <ul style="list-style-type: none"> Based on the data by Bosch and M&M, Convenor proposed a limit of max. 2000 mg/kg of water content in the draft. OMCs mentioned the sample to be tested from retail dispensing. Bosch clarified their data is from retail only. OMCs requested to give them 10 days' time to check and share data on water content in E20 samples and also requested Bosch to share ill-effects of water content on automotive operation Bosch has shared the ill-effects of water content of automotive parts. Attached for reference |
| 6 | Quality Assurance | OMC Comments Clause 8 | <ul style="list-style-type: none"> In earlier specification, MS and EBMS are being covered under IS 2796, in view of this product are meeting compliance. In case of E12/E15 and E20 there is change of IS specification after additions of Ethanol. In view of this, these clarifications are required. Proposed to add: Refinery will issue certificate of IS 17021 based on compliance of all parameters. For blending at terminal, only ethanol content will be certified by OMCs and product will be termed as IS 17021, No further testing will be required. |
| | | Panel discussions | <ul style="list-style-type: none"> BIS clarified that as per specification the representative product after batch formation needs to be certified as per Table parameters. OMCs mentioned the difficulty of testing complete parameters at terminal as per the prevailing Ethanol blending process. Convenor requested OMCs to provide details of critical test parameters of the representative sample which could be tested at terminal, as well as process for testing complete parameters at refinery during or after batch release from terminal and the frequency of final sample (E20) testing at refinery. Subsequently to arrive at the decision. Inputs awaited from OMCs even after 21st July 2023 meeting. |
| 7 | Revised Draft of IS 17021 - | Panel discussions | <ul style="list-style-type: none"> Sulphur content revised as per BS VI requirement in the draft spec was accepted by all the members. Aromatic content was revised to Max. 30% considering 20% blending and base gasoline value of Max. 35. |



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| | <p>Table 1 Parameters, Labelling</p> | | <p>Convenor mentioned with 20% blending Aromatic content in E20 will not exceed 28. However, considering the test repetency and variation this is kept at 30%. No objection was raised in this regard.</p> <ul style="list-style-type: none"> • Convenor mentioned, foot note 12 in the proposed draft (contaminants) should have same words in line with HSD specification as per Panel 5 recommendation, after approval from BPCL and HPCL is obtained for HSD. • Convenor suggestion of revised labelling clause 5.2.2.1 accepted by members. |
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Annex III

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|  | भारतीय मानक ब्यूरो BUREAU OF INDIAN STANDARDS |
| | (PETROLEUM, COAL & RELATED PRODUCTS DEPARTMENT) |
| MINUTES | |
| 18 July 2023, Tuesday, 1500 - 1630 h | |
| Gaseous Fuels Subcommittee, PCD 3:5 | 29th Meeting |
| Convenor: Dr. M O Garg, In personal capacity (Former Director CSIR-IIP) | Member Secretary: Ms. Kreeti Das |

Item 1 OPENING OF THE MEETING

1.1 Welcome address

Ms. Kreeti Das, member secretary, PCD 3, welcomed Convenor and all members to the 29th meeting of PCD 03:5 and thanked everyone for their continued contribution to the work of PCD 03.

1.2 Opening remarks by the Convenor

Dr. M O Garg, Convenor, welcomed all members to the 29th meeting of PCD 03:5. Convenor remarked that this subcommittee is collectively responsible for drafting standards on gaseous fuels. He expressed pleasure over the fact that this subcommittee has achieved its goals in minimum amount of time. He referred to the meeting agenda and brought the attention of members to two important matters – DME blended LPG draft and revision of CBG standard. He requested members for their constructive participation.

1.3 Attendance of the meeting is given at Annex A.

Item 2 TITLE, SCOPE AND COMPOSITION OF PCD 03:5

2.1 The Subcommittee **NOTED** the title and scope of PCD 03:5 as given in Annex I of the agenda.

2.2 The Subcommittee **REVIEWED** the composition of PCD 03:5 as given in Annex I of the agenda and **RECOMMENDED** the following changes:

- a) Dr. M Subramanian has superannuated from IOCL R&D, seek nomination from organization for principal member
- b) Organizations having 1/3rd participation, BIS Sectt to follow up for seeking interest in PCD 3:5 and updated nominations
- c) Organizations having 0/3 participation to be withdrawn from PCD 3:5

COMMITTEE DECISION: The Committee **AGREED with the recommendation of Subcommittee**

Item 3 ACTIVITIES OF GASEOUS FUELS SUBCOMMITTEE, PCD 3:5

3.1 The Subcommittee **NOTED** the list of standards published under PCD 03:5 as given in Annex II of the agenda.



3.2 Revision/Amendment of Indian Standards

| Sl. No. | Indian Standard | Recommendation of Subcommittee |
|---------|--|--|
| i. | PCD 03 (21305) First revision of IS 15958 : 2012 Compressed natural gas CNG for automotive purposes - Specification | <ul style="list-style-type: none"> The Subcommittee NOTED that the document has been finalized and sent for printing as no comments were received on the WC document Ashok Leyland and Cummins emphasized the importance of this standard and enquired when the standard would be available BIS informed that it takes around 2 months for the finalized document to be published and gazetted as an Indian Standard The Subcommittee DIRECTED BIS to inform all members of PCD 3:5 once the document is published as Indian Standard <p>COMMITTEE DECISION: The Committee NOTED.</p> |
| ii. | IS 15127 : 2002/ISO 13686 : 1998 Natural gas — Quality designation | <ul style="list-style-type: none"> The Subcommittee NOTED that no comments were received on the circulated WC document The Subcommittee RECOMMENDED to finalize the document for printing with approval of PCD 03. <p>COMMITTEE DECISION: The Committee APPROVED the finalization of the document for printing.</p> |

3.3 New Standards under Development

| Sl. No. | New Subject | Recommendation of Subcommittee |
|---------|---|---|
| i. | PCD 03(19009)C Adoption of ISO 23306 : 2020 Liquefied natural gas as a fuel for marine applications — Specification | <ul style="list-style-type: none"> The Subcommittee NOTED the publication of the standard as IS 18247 : 2023 / ISO 23306 : 2020 "Liquefied natural gas as a fuel for marine applications – Specification". <p>COMMITTEE DECISION: The Committee NOTED.</p> |
| ii. | 20 percent Dimethyl ether (DME) blended liquefied petroleum gas (LPG) - Specification | <ul style="list-style-type: none"> The Subcommittee DELIBERATED on the clarification sought by Chairperson, PCD 3. In last meeting of PCD 3:5 on 11 April 2023, Dr. Garg, Convenor, PCD 3:5 had also enquired from PCD 03:5 members whether there is any commercial production of DME in the country currently. Shri B Neelam Naidu, CSIR-IIP, informed that there is no commercial production as of now, however, some industries have proposed to set up plant, e.g., Assam Petrochemicals, Thermax etc. Notwithstanding the current unavailability of commercial DME for blending, NITI Aayog is promoting DME blended LPG in its methanol economy program and directed BIS to develop standard for the same. Moreover, Dr. Sitananthan from IOCL R&D also informed that the |



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| | | <p>standard would be beneficial for R&D and testing</p> <ul style="list-style-type: none"> Hence, the Subcommittee RECOMMENDED to proceed with the WC, as also endorsed by PCD 03 in its last meeting on 3 May 2023 The Subcommittee NOTED that Chairperson, PCD 3, had mentioned that he will consult with Dr. Reji Mathai and inputs are awaited. <p>COMMITTEE DECISION: Dr. Ramakumar expressed concern over the limit of 20% blending of DME. He mentioned that World LPG Association has prescribed a limit of 14% for blending while IOCL R&D, in its studies, observed that 3% should be the limit of DME blending. Beyond the 3% limit, compatibility issues of the blended fuel with seal material were observed. Hence, Dr. Ramakumar REQUESTED IOCL R&D to examine the WC document and provide comments on it.</p> |
|--|--|---|

3.4 Comments on Indian Standards

| Sl. No. | New Subject | Recommendation of Subcommittee |
|---------|--|--|
| 5. | <p>IS 16087 : 2016</p> <p>Biogas (Biomethane) — Specification (first revision)</p> | <ul style="list-style-type: none"> BIS presented the comparative chart prepared for CBG (biomethane) after collating data from EN 16723-1 “Specifications for biomethane for injection in the natural gas network”, EN 16723-2 “Automotive fuel specification”, EN 16726 “Quality of gas (Group H)”, and proposal of Maruti Udyog. It was noted that EN standards do not specify a minimum value for methane percentage, however, a methane number of minimum 65 is prescribed for automotive application. Additional, CO₂ content is prescribed as maximum 4% and O₂ content as maximum 1% mol/mol. The Subcommittee was also informed that there is no ISO standard for specification of CBG (biomethane). The Subcommittee DELIBERATED on the proposal of Maruti Udyog and asked BIS Sectt to confirm from them if Wobbe Index should also be included in the standard, and if yes, what should be the value. The Subcommittee RECOMMENDED to meet again, once input is received from Maruti Udyog, to prepare an amendment for WC. The Subcommittee also DIRECTED BIS to ensure that ARAI and OEMs attend the meeting and to invite CBG manufacturers for discussion. <p>COMMITTEE DECISION: The Committee NOTED the status and Dr. Ramakumar informed that ARAI has done studies on CBG with automobiles. He also RECOMMENDED to contact Shri Shantanu Gupta, Ex-Director of Alternate Energy Division at IOCL and national coordinator for SATAT program and explore the possibility of involving him in the amendment of the standard. The Committee also RECOMMENDED to gather performance and compositional data on CBG from manufacturers.</p> |



4.1 BIS Sectt informed the Subcommittee that ISO/TC 255 is seeking new work item proposals to expand the work of the Committee. As ISO standard on specification of CBG (biomethane) is not available, it was proposed by BIS to submit this as NWIP in ISO/TC 255.

The Subcommittee **AGREED** with the proposal and **DIRECTED** BIS to prepare the NWIP form, get it vetted by Convenor, and submit it to ISO/TC 255 with approval of PCD 03.

COMMITTEE DECISION: The Committee **AGREED** with the recommendation of Subcommittee

Item 5 DATE AND PLACE FOR THE NEXT MEETING

The Subcommittee **DECIDED** to convene next meeting after inputs are received from Maruti Udyog.



**Annex A
(Item 1.3)**

Attendance for 29th Meeting of Gaseous Fuels Subcommittee, PCD 03:5

Members

| Sl. No. | Organization | Name |
|---------|--|---|
| 1. | In personal capacity | Dr. Madhukar Garg (<i>Convenor</i>) |
| 2. | GAIL (India) Limited, New Delhi | Ajit Kumar Jha |
| 3. | CSIR-Indian Institute of Petroleum, Dehradun | Shri B Neelam Naidu |
| 4. | Indian Oil Corporation (R and D Centre), Faridabad | Dr. M. Sithanathan |
| 5. | Mangalore Refinery and Petro Chemical Limited, Mangalore | Ms. Jyothi Prashanth |
| 6. | Nayara Energy Limited, Mumbai | Shri Sabyasachi Kumar |
| 7. | Nayara Energy Limited, Mumbai | Shri Milankumar Vasoya |
| 8. | Reliance India Limited, Mumbai | Shri Balasubramanian K |
| 9. | Society of Indian Automobile Manufacturers (SIAM), Delhi | Shri Kartik Sharma (Cummins – representing SIAM) |
| 10. | Society of Indian Automobile Manufacturers (SIAM), Delhi | Shri V Faustino (Ashok Leyland – representing SIAM) |
| 11. | Tata Motors Limited, Pune | Shri Shailendra Dewangan |

BIS Secretariat

| Sl. No. | Organization | Name |
|---------|----------------------------|-----------------------|
| 1. | Bureau of Indian Standards | Ms. Kreeti Das |
| 2. | Bureau of Indian Standards | Shri Hari Mohan Meena |