



भारतीय मानक ब्यूरो BUREAU OF INDIAN STANDARDS

(PETROLEUM, COAL & RELATED PRODUCTS DEPARTMENT)

(
AGENDA		
30 April 2024, Tuesday, 1100 - 1600 h		
Lubricants And their Related Products Sectional Committee 16th Meeting		
Chairperson: Dr. Y P Rao, In Personal Capacity Member Secretary: Ms. Kreeti Das		
Meeting mode: Physical		

Venue: BIS Western Regional Laboratory, 9, M.I.D.C., Behind Marol Telephone Exchange, Andheri (East),

Mumbai 400093

ITEM 0 WELCOME AND INTRODUCTORY REMARKS

0.1 Welcome by BIS

0.2 Opening Remarks by the Chairperson

ITEM 1 CONFIRMATION OF THE MINUTES OF THE 15TH MEETING OF PCD 25

The 15th meeting of PCD 25 was held in hybrid mode on 27 October 2023. The minutes of the meeting were circulated to all members through email on 18 November 2023.

- a) Comment related to typing error pointed out by Shri P Ramesh (correction in organization name to Ashok Leyland) and may be accepted.
- b) Comments received on the minutes from Dr. Kavita Rai, reproduced below:

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	- DGAQA	nominations have been
	- IOCL (R&D)	received
	- IOCL (Mktg)	The Subcommittee
	- Avi Oils	REQUESTED main Committee
	- Mitesh Rathod, Swastik Oil	to discuss
	- Harsh Vardhan Jain, Vinni Chemicals	
	 The scope of this Panel is to identify 	COMMITTEE DECISION: The
	the subjects and prepare the	Committee DIRECTED BIS to
	specifications in which Indian Air	contact Dr. Shanmuga Priya from
	Force is interested (Background -	CEMILAC. Dr. Kavita Rai was
	NWIP received from Indian Air Force)	willing to be nominated from IOCL
	 The Subcommittee RECOMMENDED 	(R&D) and Shri Piyush Dubey was
	BIS to seek nomination of	proposed to be nominated from
	representatives from the above	IOCL (Mktg).
	organizations for the panel so that	
	meeting can be called urgently	The Committee DIRECTED BIS to
	 Dr. Kavita Rai suggested the panel to 	follow up with the organizations
	refer to JSS 9150-090 : 2021 Hydraulic	
	fluid for military aircraft OM15 for	REQUESTED Shri Siva Kasturi to
	preparation of working document	convene a meeting for formulation
	 The Committee AGREED with the 	of draft.
	recommendation of Subcommittee	
	and RECOMMENDED to add HPCL in	
	the panel	

[Please change the highlighted portion as "Dr. Kavita Rai was proposed to be nominated from IOCL (R&D)" as Sh. Mukul Maheshwari CGM I/c LT had nominated me for the same in the said meeting.]



ITEM 2 TITLE, SCOPE AND COMPOSITION OF PCD 25

2.1 The title of the Committee is given below:

TITLE - Lubricants and their Related Products Sectional Committee

The Committee may **NOTE**

2.2 The scope of the Committee is given below:

SCOPE – To formulate Indian Standards for terminology; lubricants, bio- lubricants, lubricating oils & greases and their related products like coolants, hydraulic fluids, corrosion preventives, quenching and cutting oils, lubricant produced through synthesis routes and codes of practice for storage, handling, transport and application.

The Committee may **NOTE**

2.3 Liaison with ISO Committees

- ISO/TC 28 Petroleum and related products, fuels and lubricants from natural or synthetic sources (so far as it concerns its own scope)
- ISO/TC 28/SC 4 Classifications and specifications

The Committee may **NOTE**

- **2.4** The present composition of PCD 25 and its Subcommittees is given in **Annex I**.
- **2.4.1** BIS Management has taken a strict view of participation in committee meetings and introduced the following new reforms regarding committee composition:
- a) **Mandatory 50% participation**: Organizations having less than 50% participation recommended to be withdrawn
- b) **Maximum Committee Members**: Composition of committee to be restricted to maximum 30 and balance among stakeholders not more than 1/3 manufacturers and not less than 2/3 other parties like consumers, regulators, ministries, academicians, R&D, and laboratories to be maintained.
- c) **Tenure for Members in Personal Capacity and Private Companies**: Members participating in personal capacity or representing private organizations to be removed/changed in 5 years
- d) **Establishment of Standardization Cells in Industry Association**: Industry associations are required to establish standardization cells and register in BIS standards portal, failing which, they will be removed from Committee.

The Committee may CONSIDER.

- **2.4.2** The following panel has been created to review the composition of PCD 25 and its SCs:
 - a) Dr. Y P Rao, Chairperson PCD 25 Convenor
 - b) Shri Mukul Maheshwari, Convenor PCD 25:1
 - c) Shri Siva Kasturi, Convenor PCD 25:2
 - d) Dr. T Singh, Convenor PCD 25:3
 - e) Representative from SIAM

The panel needs to meet to review the composition and decide on co-option requests.

The Committee may **CONSIDER**.



2.5 Panels and Working Groups under PCD 25 and its SCs

- i. PCD 25: P1 Panel for Food Grade and Biodegradable Lubricants (Convenor Dr. Kavita Rai, IOCL R&D)
- ii. PCD 25: P5 Panel for Food Grade and Biodegradable Greases (Convenor Dr. Tarunendr Singh, BPCL)
- iii. PCD 25 : P8 Panel for Revision of Standards / Formulation of New Standards on Temporary Corrosion Preventives (Convenor Shri Siva Kasturi, Shell India Markets Private Limited, Mumbai)
- iv. PCD 25:1:P1 Revision of IS 5759: 2006 Antifreeze Coolant (Convenor Shri Harsh Vardhan Jain, Vinni Chemicals Pvt Ltd)
- v. PCD 25:1:P2 Panel for Transmission and e-Axle Fluids for Electric Vehicles (Convenor Shri Anand Kumar, Afton Chemicals Pvt Ltd)
- vi. PCD 25 : 1 : P3 Formulation of Certification Procedure for Engine Oils, Gear Oil, and Axle Oils (Convenor Dr. Pankaj Bhatnagar, IOCL R&D)
- vii. PCD 25:1:P4 Panel for Formulating Standards for Base Oil (Convenor Dr Ajay Kumar Harinarain, IOCL R&D)
- viii. PCD 25 : 2 : P1 Panel for Formulation of Standards on Aviation Grade Hydraulic Fluids (Convenor Shri Siva Kasturi, Shell India Markets Private Limited, Mumbai)
- ix. PCD 25: 3: P1 Panel for Greases for Electric Vehicles (Convenor Dr. T Singh, BPCL)

The Committee may **NOTE**.

ITEM 3 R&D PROJECTS TO SUPPORT STANDARDIZATION

Bureau of Indian Standards (BIS), as the National Standards Body of India is responsible for formulating Indian Standards for products, processes and services. In the pursuit of this endeavour, it has so far developed more than 22000 Indian Standards. It is important that no standard should be developed without intensive and insightful research work, which is not confined only to the review of the existing literature and focus group discussions on the subject chosen for standardization, but also covers the detailed field level study of the existing processes and practices in product manufacturing and service delivery. This requires a large network of domain area experts to carry out the research & development work. The Memorandum of Understanding with the premier educational institutions imparting technical and professional education opens the window to the opportunities to expand this network substantially by utilizing the intellectual capital that resides with the faculty and the research scholars in these institutions. This association is conceived not only as a way to promote research & development work necessary for standards formulation but also to enrich the research ecosystem in these educational institutions.

The R&D guidelines are attached.



R&D Guidelines Sep 2023.pdf

The Subcommittee may **CONSIDER** utilizing the provision of R&D projects for revision of standards/development of new standard

ITEM 4 ACTIVITIES OF PCD 25

4.1 The program of work and list of standards published under PCD 25 are attached.



Program of Work.pdf

The Committee may **NOTE**

4.2 Details of Subcommittee Meetings

Details of Subcommittee	Date of the meeting	Minutes
9 th Meeting of PCD 25:1 Automotive Lubricants & Specialties (Including Brake Fluid and Radiator Coolant) Subcommittee	29 April 2024, 1000 - 1130 h	Will be available after subcommittee meeting
9 th Meeting of PCD 25:2 Industrial Lubricants & Specialty Products Subcommittee	18 April 2024, 1430 - 1630 h	Under preparation
9 th Meeting of PCD 25:3 Automotive And Industrial Greases Subcommittee	1 April 2024, 1030 - 1130 h	MoM - 9th meeting PCD 25 SC 3 .pdf

The Committee may CONSIDER and ENDORSE the recommendations of the Subcommittees.

4.3 Draft Standards/Amendments for Finalization

Sl. No.	Document Number	Decision in Previous Meetings	Action Taken/Current Status
i.	PCD 25 (25017)WC Food Grade and Biodegradable Lubricants	 Panel 1 created under the Convenorship of Dr Kavita Rai for food grade and biodegradable lubricants. The panel was of the opinion that requirement for food grade and biodegradable lubricant may be incorporated in existing standards for application-wise lubricants She informed that ISO 15380 "Lubricants, industrial oils and related — Family H (Hydraulic systems) — Specifications for hydraulic fluids in categories HETG, HEPG, HEES and HEPR" covers biodegradable base oil for hydraulic system and recommended Committee to adopt it for biodegradable hydraulic oil standard. Hence, the Committee DECIDED to issue ISO 15380 into WC for 2 months for identical adoption 	 ISO 15380 has been circulated into WC with document number PCD 25 (25017)WC for a period of 60 days, ending on 6 May 2024. The Committee may NOTE.



4.4 Draft Standards/Amendments for Approval for Wide Circulation

Sl. No.	Indian Standard/Documen t No.	Decision in Previous Meetings	Action Taken/Current Status
i.	PCD 25(23378)P Food Grade and Biodegradable Greases	 The Committee <i>DECIDED</i> to issue the draft provided by Dr. T Singh into P draft circulation for 1 month. Draft issued into P-draft circulation for 1 month with document no. PCD 25 (23378)P on 25 Aug 2023. Comments received. COMMITTEE DECISION: The Committee <i>RECOMMENDED</i> to discuss the comments 	PCD 25/P5 held meeting on 1 April 2024 to discuss the comments. Resolution of comments by panel attached: Resolution of Comments on PCD 2 The Committee may CONSIDER issuing the
		in meeting of PCD 25 panel 5.	document into WC.

4.5 Drafts Under Preparation

Sl. No.	Indian Standard/New Subject	Decision in Previous Meetings	Action Taken/Current Status
i.	Greases for Solar Panels/Dielectric Grease	 In the 8th meeting, the Committee noted the need for Indian Standard on greases for solar panels/ dielectric grease and requested Dr T. Singh, Convener, PCD 25:3, to look into the subject and present a white paper. In last meeting, the Committee <i>REQUESTED</i> Lubrizol to assist Dr. T Singh in preparing a white paper on the subject. Lubrizol nominated Shri Sandeep Sarode and Shri Nitin Chaudhari to assist Dr. T Singh in preparing a white paper on the subject. COMMITTEE DECISION: The Committee <i>REQUESTED</i> Dr. T Singh to coordinate with Lubrizol for preparation of white paper. 	 Update on the project is awaited. The Committee may CONSIDER.

4.6 Revision/Reaffirmation of Standards Due for Review

Sl. No.	Indian Standard	Due Date	Current Status
1.	IS 14384 : 1996 Colloidal graphite dispersion in oil - Specification	February 2023	 The Committee <i>REAFFIRMED</i> the standard with revision The Committee <i>REQUESTED</i> Dr. T Singh to provide the revised draft by 15 Nov 2023



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IS 16775: 2018

Petroleum and related products -

Guidance for the maintenance and use of triaryl phosphate ester turbine control

IS 10532 (Part 4):

Fire resistant

IS 1118:2019 Gear lubricants, multipurpose

Gear Oil) specification

(Extreme Pressure

Internal combustion engine crankcase oils

IS 13656: 2019

for automotive application (Diesel And Gasoline) -**Specification**

IS 506: 2019

other general purpose grease specification

IS 7623:2019

Multipurpose

industrial grease -Specification

Automotive and

hydraulic fluids -**Specification: Part 4** phosphate esters

fluids

2019

type

ISO / TS 11365:2011

March 2023

March 2024

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नानकः वधप्रदर्शकः	16 th Meeting of PCD 25
•	The standard is based on CS 1419C,
	IND/SL/4116(a) Specification and Defence
	Standard 91-30/Issue 1, 12 July 1977
	Dr. T Singh has requested for latest version of
	this specification, which BIS is trying to
	procure.
	The Subcommittee may CONSIDER .
	The Subcommittee may Consider.
•	The Committee REAFFIRMED the standard
	with revision
•	The Committee DIRECTED BIS to issue the
	latest ISO 11365 : 2017 into WC for 2 months
	for adoption
•	The WC document is under preparation for
	circulation.
•	The Committee may NOTE .
•	The standard is under revision through
	adoption of ISO 12922 : 2020 "Lubricants,
	industrial oils and related products (class L) —
	Family H (hydraulic systems) — Specifications
	for hydraulic fluids in categories HFAE, HFAS,
	HFB, HFC, HFDR and HFDU"
•	Committee may CONSIDER reaffirming the
	standard with revision.
•	The standard is under revision in PCD 25:1/P3
•	Committee may CONSIDER reaffirming the
	standard with revision.
•	The standard is under revision in PCD 25:1/P3
•	Committee may CONSIDER reaffirming the
	standard with revision.
•	Committee may CONSIDER allocating ARP to
	BIS officer or to any Committee member.
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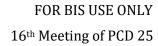
Committee may **CONSIDER** allocating ARP to

BIS officer or to any Committee member.



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8.	IS 8654 : 2019		
	Automotive hydraulic brake fluid, heavy duty - Specification	March 2024	Committee may CONSIDER allocating ARP to BIS officer or to any Committee member.
9.	IS 493 (Part 1) : 2019		
	Specification for general purpose machinery and spindle oils: Part 1 machinery oils	March 2024	Committee may CONSIDER allocating ARP to BIS officer or to any Committee member.
10.	IS 493 (Part 2): 2019		
	Specification for general purpose machinery and spindle oils: Part 2 spindle oils	March 2024	Committee may CONSIDER allocating ARP to BIS officer or to any Committee member.
11.	IS 11159 (Part 5) : 2019 / ISO 6743-4 : 1999		 ISO 6743-4 has been revised in 2015.
	Lubricants, industrial oils and related products (Class L) - Classification: Part 5 family H (Hydraulic Systems)	March 2024	Committee may CONSIDER adopting the latest ISO standard and reaffirm the standard with revision.
12.	IS 11159 (Part 7) : 2019 / ISO 6743-6 : 1990		 ISO 6743-6 has been revised in 2018.
	Lubricants, industrial oils and related products (Class L) - Classification: Part 7 family C (Gear Systems)	March 2024	Committee may CONSIDER adopting the latest ISO standard and reaffirm the standard with revision.
13.	IS 11159 (Part 13) : 2019 / ISO 6743-12		
	Lubricants, industrial oils and related products (Class L) - Classification: Part 13 family Q (Heat Transfer Fluids)	March 2024	 ISO 6743-12 has not been revised. Committee may CONSIDER.





4.7 Revision of Pre-2000 Standard

Sl. No.	Indian Standard	Decision in Previous Meeting	Current Status	
1.	IS 4578: 1997 Lubricants - Lubricating oil for refrigeration machinery - Specification	 In 15th meeting, Shri Abhijit Sarkar informed that he has reviewed the standard and no major updates required. Hence, revised draft may be prepared by incorporating all amendments and making editorial corrections The Committee <i>DIRECTED</i> BIS to prepare the revised draft of the standard and issue into WC for 2 months. 	 As there is only one amendment to the standard, it will not be apt to issue revision to incorporate the amendment or for editorial corrections. Committee may CONSIDER archiving the standard. 	
2.	IS 14745 : 1999 Thermic fluids – Specification	The Committee <i>DIRECTED</i> BIS to follow up with Shri Shakti Mishra, HPCL, to provide the revised draft of the standard by end of November 2023.	 Communication sent to Shri Shakti Mishra along with editable file Revised draft awaited The Committee may CONSIDER 	

ITEM 5 INTERNATIONAL ACTIVITY

5.1 P Membership and Participation

BIS is a participating member of the following ISO technical committees and PCD 25 is the corresponding National Mirror Committee (NMC) dealing with their activities.

Sl. No.	ISO Technical Committee/Subcommittee/WG	Registered Committee Member/Expert
1.	ISO/TC 28 Petroleum and related products, fuels and lubricants from natural or synthetic sources	Dr. Raj Kumar Singh, CSIR – IIP Shri Mukul Maheshwari, IOCL R&D Dr. T Singh, BPCL Shri Siva Kasturi, Shell Head, PCD Ms. Kreeti Das, Member Secretary The Committee may NOTE.
2.	ISO/TC 28/SC 4 Classifications and specifications	Dr. Kavita Rai, IOCL R&D Shri Mukul Maheshwari, IOCL R&D Dr. T Singh, BPCL Head, PC Head, PCD Ms. Kreeti Das, Member Secretary



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The Committee may **CONSIDER** nominating experts from IIP and Convenor of PCD 25:2 in ISO/TC 28/SC 4 as well.

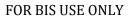
ITEM 6 ANY OTHER BUSINESS

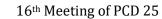
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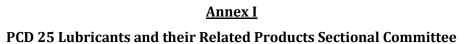
ITEM 7 ANNUAL MEETING CALENDAR

Sl. No.	Sectional Committee / Subcommittee	Dates
1	PCD 25, PCD 25:1, PCD 25:2, PCD 25:3	April 2024
2	PCD 25, PCD 25:1, PCD 25:2, PCD 25:3	1 - 8 & 14 October 2024
3	PCD 25, PCD 25:1, PCD 25:2, PCD 25:3	10 – 14 & 18 February 2025

ITEM 8 VOTE OF THANKS







SI No.	Organization	Member Name	Member Email	Member Designation	Role	14 th	15 th	Total
1.	IN INDIVIDUAL CAPACITY	Dr Y. P. Rao	yprao2012@gmail.com	Chairperson	Chairperson	Y	Y	2/2
2.	Afton Chemicals Private Limited, Mumbai	Shri Anand Kumar	Anand.kumar@aftonchemica l.com		Principal Member	N	Y	1/2
3.	Ashok Leyland Limited, Chennai	Shri D. Balakrishnan	balakrishnan.d2@ashokleyla nd.com	Deputy General Manager- PD	Alternate Member	Y	Y	2/2
		Shri Mahesh P	Mahesh.P@ashokleyland.co m	General Manager	Principal Member			
4.	Bajaj Auto Limited, Pune	Shri Yogesh. R. Mahajan	yrmahajan@bajajauto.co.in		Principal Member	Y	Y	2/2
		Shri Ramesh Goykar	rgoykar@bajajauto.co.in	Manager	Alternate Member			
5.	Balmer Lawrie and Company	Dr. Somnath Chattopadhyay	chattopaddhyay.s@balmerla wrie.com	Sr Manager	Principal Member	Y	N	1/2
	Limited, Kolkata	Shri Madhaba Chandra Dash	dash.mc@balmerlawrie.com	Manager (R&D)	Alternate Member			
6.	Bharat Petroleum Corporation Limited, Mumbai	Shri M Sohail Akhtar	akhtarm@bharatpetroleum.i n	GENERAL MANAGER I/C (P&AD)	Principal Member	Y	Y	2/2

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		Dr Tarunender Singh	singhtarun@bharatpetroleu m.in	General Manager (R&D)	Alternate Member			
7.	Bosch Limited, Bengaluru	Shri Fredrick A.	Fredrick.A@in.bosch.com	Senior Manager (Development)	Principal Member	Y	N	1/2
		Shri Raghuveer Rao	Raghuveer.Rao@in.bosch.co m	Deputy Manager (Development)	Alternate Member			
		Dr. Devendra Singh	devendra@iip.res.in	Principal Scientist	Principal Member	Y	N	1/2
8.	CSIR - Indian Institute of Petroleum, Dehradun	Dr. G.D. Thakre	gdthakre@iip.res.in	Senior Principal Scientist	Alternate Member			
		Dr. Sailesh Kr. Singh	sk.singh@iip.res.in	Senior Scientist	Young Professional			
9.	Chennai Petroleum Corporation Limited, Chennai	Shri H. Ramakrishnan	ram@cpcl.co.in	Senior Manager (QC)	Principal Member	Y	Y	2/2
		Shri M Abdul Kareem	kareem@cpcl.co.in	Dr., DGM (QC)	Alternate Member			
10	Consumer Guidance Society of India, Mumbai	Dr. Sitaram Dixit	sitaram.dixit@gmail.com	Chairman	Principal Member	Y	Y	2/2
		Dr. M. S. Kamath	dr.m.s.kamath@gmail.com	General Secretary	Alternate Member			
11	Directorate General of Quality Assurance, Ministry of Defence, Kanpur	Shri A K Kanaujia	ashokkumar.kanaujia@gov.i n	SSO-II	Principal Member	Y	Y	2/2
		Dr. Om Prakash Singh	omprakash.singh75@gov.in	Principal Scientific Officer	Alternate Member			



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12	Gulf Oil Lubricants India Limited, Mumbai	Shri Girish Jange	girish.jange@gulfoil.co.in	Sr. General Manager - Global Technology	Principal Member	N	Y	1/2
		Shri Jencen Mathai Arivannoor	jencen.arivannoor.ch@gulfoi l.co.in	Sr. R&D Scientist	Alternate Member			
	Hindustan Petroleum Corporation Limited, Mumbai	Shri Lokender Singh Tevathiya	lokender@hpcl.in	Chief Manager - Quality Control	Principal Member	Y	Y	2/2
13		Shri Ashish Khanna	akhanna@hpcl.in	General Manager - Technical Services	Alternate Member			
		Shri Abhijit A Sarkar	aasarkar@hpcl.in	Deputy General Manager – Product Development & OEM Business	Young Professional			
	Indian Oil Corporation (MKTG), Mumbai	Shri Abhijeet Chakraborti	achakravorty@indianoil.in	Chief Manager (Lube QC)	Alternate Member	N	Y	1/2
14		Shri H S Negi	negihs@indianoil.in	Dy. General Manager (Technical Services)	Principal Member			
4 -	Indian Oil Corporation (R and D Centre), Faridabad	Dr Pankaj Bhatnagar	bhatnagarp@indianoil.in	Chief General Manager	Alternate Member	Y	Y	2/2
15		Shri Mukul Maheshwari	maheshwarim@indianoil.in	Chief General Manager In- Charge (LT)	Principal Member			

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	5 Lubrizol India Limited, Mumbai	Shri Rahul Misra	rahul.misra@lubrizol.com	Senior Director- Technology	Principal Member	Y	N	1/2
16		Shri Avinash Kamuni	avinash.kamuni@lubrizol.co m	Technology Manager-Engine oils	Alternate Member			
17	Mahindra and Mahindra Limited, Mumbai	Shri R. Ramaprabhu	r.ramaprabhu@mahindra.co m		Principal Member	Y	N	1/2
10	National Test House, Kolkata	Shri Bhaskar N Barsagade	bnbarsagade@nth.gov.in	Scientist B (Chemical)	Alternate Member	N	Y	1/2
18		Dr. Mangesh Gharpure	m.gharpure@nth.gov.in	Scientist C (Chemical)	Principal Member			
19	Netra NTPC Limited, Noida	Shri Rajiv Satyakam	rsatyakam@ntpc.co.in	AGM-NETRA	Principal Member	N	N	0/2
		Ms. Vani G. D.	vanigd@ntpc.co.in	Manager-NETRA	Alternate Member			
20	Reliance India Limited, Mumbai	Shri Balasubramanian K	Balasubramanian.kuppuswa my@ril.com	Vice President	Principal Member	N	Y	1/2
		Shri K. K. Sreeramachandran	sreeramachandran.kartha@r il.com	Vice President - Strategy	Alternate Member			
21	Research Designs and Standards Organization (RDSO), Lucknow	Shri Bharat Prasad	bharatprasad2501@gmail.co m	Assistant Research Officer	Alternate Member	N	N	0/2
		Shri Kamal Prakash Singh	singh150566@gmail.com	Deputy Director (M&C)	Principal Member			

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22	Society of Indian Automobile Manufacturers (SIAM), Delhi	Shri Prashant Kumar Banerjee	pkbanerjee@siam.in	Executive Director	Principal Member	Y	N	1/2
		Dr. Sandeep Garg	sgarg@siam.in	Dy. Executive Director	Alternate Member			
23	Swastik Oil Products Manufacturing Company Private Limited, Mumbai	Shri Bhupendra Rathod	bhupendrarathod2002@yah oo.co.in		Principal Member	Y	N	1/2
		Shri Sanat Rathod	sanatswastikoil@gmail.com		Alternate Member			
		Shri Mitesh Rathod	mitesh@swastikoil.com		Young Professional			
24	Tata Motors Limited, Pune	Shri Pallipalayam Gowrishankar	p.gowrishankar@tatamotors. com	General Manager	Principal Member	Y	Y	2/2
		Shri Pallav Chatterjee	pallav.chatterjee@tatamotor s.com	Senior Manager	Alternate Member			
25	Vinni Chemicals Pvt. Ltd., New Delhi	Shri Harsh Vardhan Jain	harsh@vinnichemicals.com		Principal Member	Y	N	1/2