

	SHANTHALA POWER LIMITED ELECTRICAL TESTING LABORATORY Shanthala No. 24, Priyadarshini Colony, Gokul Road, Hubballi, Hubli, Dharwad-580030 Karnataka, India Mob No:09449867588 E-Mail ID: reports@shanthalaIndia.com	 NABL T0626KA18423
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TRANSFORMER OIL TEST REPORT		

ELECTRICAL- INSULATING MATERIALS & INSULATORS	ULR No. : NABL T0626KA184232600000490
Customer Address. Mahindra TEQO Private Limited, 1st Floor, Mahindra and Mahindra, Raheja Chamber, No.12 Museum Road, Bangalore Urban Bangalore-560001, Karnataka, India, Bangalore, Karnataka-560001	
Kind Attn: Anil Nayak Contact No: +91 9035549005 Email: Anil.nayak@mahindra.com	

Name of the Work: Transformer Oil Testing. Ref: Work Order No: SPL/MTPL, Date: 01/10/2026. OA No: 822, Date: 01/10/2026. I/W No: 1505, Date: 01/10/2026. Test Report No: SPL-H/CC-490/NTS-11
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SI No.	INDEX							Page No.
	PARTICULARS OF TRANSFORMER OIL SAMPLES							
	Transformer Serial No.	Identification	Plant Location	Make	Capacity	Voltage HV/LV	YOM	
1	PO-22-1878	POWER TRANSFORMER-1	SWICHYARD	T & R	40/50 MVA	110000V/33000V	2022	03-24
2	TR -PO-22-1878	--	SWICHYARD	T & R	40/50 MVA	110000V/33000V	2022	05-24
3	27319	IDT-1	ICR-1	HPS	5500 KVA	33000V/800V	2022	07-24
4	27320	IDT_2	ICR-2	HPS	5500 KVA	33000V/800V	2022	09-24
5	26664	IDT-3	ICR-3	HPS	5500 KVA	33000V/800V	2022	11-24
6	26500	IDT-3	ICR-3	HPS	5500 KVA	33000V/800V	2022	13-24
7	26665	IDT-4	ICR-4	HPS	5500 KVA	33000V/800V	2022	15-24
8	26666	--	ICR-4	HPS	5500 KVA	33000V/800V	2022	17-24
9	07211	IDT-5	ICR-5	HPS	5500 KVA	33000V/800V	2022	19-24
10	27332	IDT-6	ICR-6	HPS	5500 KVA	33000V/800V	2022	21-24
11	302416/22	--	SWITCH YARD	KALPA	100 KVA	33000V/415V	2022	23-24

Co-Ordination By:	Anil Nayak	Mahindra TEQO Private Limited
Sample Collected By:	Subramanua Bandi	M/s. Shanthala Power Ltd Electrical Testing Laboratory, Hubli.

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TRANSFORMER OIL TEST REPORT		

ELECTRICAL- INSULATING MATERIALS & INSULATORS	ULR No. : NABLT0626KA184232600000490
Note: - The test results relate only to the sample(s) tested. - ND: Not Detected. - NA: Not Applicable. - NP: Not Provided. - NM: Not Mentioned. [---]: Customer not mentioned. - CCSUT: Customer Confirmed, Sample Under Testing. - The limits for DGA are valid from the last date of filtration. - mg/kg is equivalent to PPM. - µl/l is equivalent to PPM. - µg/kg is equivalent to PPB. - If the last date of filtration is not specified, the limits for DGA are considered from the year of installation. - The responsibility of Shanthala Power Ltd. Electrical Testing Laboratory, Hubballi is limited only to technical content of this report. All the procedural/legal/operational matters would be the responsibility of the client. - Any Anomaly / Discrepancy in this test report / certificate should be brought to our notice within 60 days from the date of issue. - The Test Report not to be reproduced except in full, without written approval from the laboratory. - Tested samples are disposed off after a period of fortnight from the date of dispatch of the test report, if no back reference is made by the customer. [*] Indicates these all details are provided by customer. - Samples were collected by trained personnel of Shanthala Power Ltd. Electrical Testing Laboratory in accordance with IS 6855:2017 and internal procedures, following a predefined sampling plan.	

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TRANSFORMER OIL TEST REPORT		

ELECTRICAL- INSULATING MATERIALS & INSULATORS		ULR No. : NABLT0626KA184232600000490	
Customer Name *	:	Mahindra TEQO Private Limited, 1st Floor, Mahindra and Mahindra, Raheja Chamber, No.12 Museum Road, Bangalore Urban Bangalore-560001, Karnataka,India, Bangalore, Karnataka-560001	
Contact Person *	:	Anil Nayak	Sample No. : 1 (Bottom)
Contact No *	:	+91 9035549005	Plant Location * : SWICHYARD
E- Mail ID *	:	Anil.nayak@mahindra.com	Customer Identification * : POWER TRANSFORMER-1
Location of Sample Collected *	:	SWICHYARD	Serial Number * : PO-22-1878
Last Date of Filtration *	:	NP	Make * : T & R
Date of Sampling *	:	08/10/2026	Capacity * : 40/50 MVA
Date of Receipt *	:	01/10/2026	Voltage (HV/LV) * : 110000V/33000V
Sample Tested on	:	03/10/2026	Year of Manufacture * : 2022
Oil Temperature *	:	42 °C	Weather Condition * : Dry
Winding Temperature *	:	42 °C	Sample Condition on Receipt : Good
Report Issue Date	:	14/10/2026	Colour of the Oil : Pale Yellow
Location of Test Performed : Shanthala Power Limited Electrical Testing Laboratory Hubli.			
Method of Sampling for Insulating Liquids as per IS 6855:2017			

Test Condition (LAB):	Ambient Temp in °C : 25-29	RH in % : 40-49
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Sl. No.	Test Parameters	Reference Standard- IS: 1866: 2017	Transformer Oil	Test Results
		Test Method	Limits 72.5kV - 170kV	
1	Break Down Voltage (BDV)/ Di-Electric Strength, Electrode (spherical) gap 2.5mm	IS 6792: 2023 (Power Frequency Test Method) & IS 1866:2017 Mineral Insulating Oils in Elec Equip)	<50kV	63.9,62.1,64.5,61.6,65.3,60.8=63.0

ELECTRICAL- INSULATING MATERIALS & INSULATORS			ULR No. : NABLT0626KA184232600000490		
DISSOLVED GAS ANALYSIS:					
Sl. No.	Parameters	Unit	Test Method	Limits	Test Results
1	Methane(CH4)	µl/l	IS 9434-2019(Partial Degassing Method), IS 10593: 2023(Interpretation of Dissolved & Free Gases Analysis))	30-130	02
2	Ethylene (C2H4)			60-280	05
3	Ethane (C2H6)			20-90	ND
4	Acetylene(C2H2)			2-20	ND
5	Carbon Monoxide(Co)			400-600	109
6	Carbon Dioxide (Co2)			3800-14000	1292
7	Hydrogen (H2)			50-150	ND
8	Total Gas Content % by Volume				10.12

INTERPRETATION & OPINION ON THE TRANSFORMER OIL TEST REPORT:	
Oil Parameters: ♦ The parameters of the oil sample of the transformer tested are within the permissible limits as per IS:1866-2017 “The parameters of Transformer Oil in service”.	
Dissolved Gas Analysis (DGA): ♦ The DGA gas contents are within the permissible limits as per IS 10593:2023.	
OPINION: ♦ All the tests are to be repeated after one year to assess & ensure the condition of the transformer oil. ♦ The results are to be properly documented for future diagnostic reference. ♦ These values are retained as benchmark for future reference.	

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TRANSFORMER OIL TEST REPORT		

ELECTRICAL- INSULATING MATERIALS & INSULATORS		ULR No. : NABLT0626KA184232600000490	
Customer Name *	:	Mahindra TEQO Private Limited, 1st Floor, Mahindra and Mahindra, Raheja Chamber, No.12 Museum Road, Bangalore Urban Bangalore-560001, Karnataka,India, Bangalore, Karnataka-560001	
Contact Person *	:	Anil Nayak	Sample No. : 2 (Oltc)
Contact No *	:	+91 9035549005	Plant Location * : SWICHYARD
E- Mail ID *	:	Anil.nayak@mahindra.com	Customer Identification * : --
Location of Sample Collected *	:	SWICHYARD	Serial Number * : TR -PO-22-1878
Last Date of Filtration *	:	NP	Make * : T & R
Date of Sampling *	:	NP	Capacity * : 40/50 MVA
Date of Receipt *	:	01/10/2026	Voltage (HV/LV) * : 110000V/33000V
Sample Tested on	:	03/10/2026	Year of Manufacture * : 2022
Oil Temperature *	:	42 °C	Weather Condition * : Dry
Winding Temperature *	:	42 °C	Sample Condition on Receipt : Good
Report Issue Date	:	14/10/2026	Colour of the Oil : Pale Yellow
Location of Test Performed : Shanthala Power Limited Electrical Testing Laboratory Hubli.			
Method of Sampling for Insulating Liquids as per IS 6855:2017			

Test Condition (LAB):		Ambient Temp in °C : 25-29		RH in % : 40-49	
Sl. No.	Test Parameters	Reference Standard- IS: 1866: 2017	Oil in service	Test Results	
		Test Method	Limits OLTC		
1	Break Down Voltage (BDV)/ Di-Electric Strength, Electrode (spherical) gap 2.5mm	IS 6792: 2023 (Power Frequency Test Method) & IS 1866:2017 Mineral Insulating Oils in Elec Equip)	>40kV	60.1,59.3,61.0,58.2,62.4,57.6=59.7	



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TRANSFORMER OIL TEST REPORT

ELECTRICAL- INSULATING MATERIALS & INSULATORS

ULR No. : NABL T0626KA184232600000490

DISSOLVED GAS ANALYSIS:

Sl. No.	Parameters	Unit	Test Method	Limits	Test Results
1	Methane(CH4)	μl/l	IS 9434-2019(Partial Degassing Method), IS 10593: 2023(Interpretation of Dissolved & Free Gases Analysis))	No-Limits	02
2	Ethylene (C2H4)			No-Limits	03
3	Ethane (C2H6)			No-Limits	01
4	Acetylene(C2H2)			No-Limits	41
5	Carbon Monoxide(Co)			No-Limits	48
6	Carbon Dioxide (Co2)			No-Limits	588
7	Hydrogen (H2)			No-Limits	05
8	Total Gas Content % by Volume				10.03

INTERPRETATION & OPINION ON THE TRANSFORMER OIL TEST REPORT:

Oil Parameters:

❖ The parameters of the oil sample of the transformer tested are within the permissible limits as per IS:1866-2017 "The parameters of Transformer Oil in service".

Dissolved Gas Analysis (DGA):

❖ The obtained OLTC **DGA** test results are presented in the report and shall be evaluated based on periodic trend analysis as per the note given below.

OPINION:

❖ All the tests are to be repeated after **one year** to assess & ensure the condition of the transformer oil.

❖ **The results are to be properly documented for future diagnostic reference.**

❖ **These values are retained as benchmark for future reference.**

Note: The On Load Tap Changing oil (OLTC) is bound have gases, as we are changing the tap in accordance with incoming voltage, this Tap Changing (During make and break contact of OLTC link) will cause incipient Arcing & Causes sudden increase in the Acetylene gas content along with other Hot metal gases. There is no limit for the gases generation. Please maintain the log book & record the number of Tap Changes & oil changed date etc. If the number of Tap Changes increases please refer manufacturer manual for replacement of oil. Send the sample for every equal number of operations & the trend of gas generation has to be monitored & maintained; if there is much variation in the gases further action has to be carried out.

The usual industrial practice for OLTC (On-Load Tap Changer) oil replacement is either once every two years or more than 5,000 operations, whichever comes first.

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ELECTRICAL- INSULATING MATERIALS & INSULATORS		ULR No. : NABLT0626KA184232600000490	
Customer Name * : Mahindra TEQO Private Limited, 1st Floor, Mahindra and Mahindra, Raheja Chamber, No.12 Museum Road, Bangalore Urban Bangalore-560001, Karnataka,India, Bangalore, Karnataka-560001			
Contact Person *	: Anil Nayak	Sample No.	: 3 (Bottom)
Contact No *	: +91 9035549005	Plant Location *	: ICR-1
E- Mail ID *	: Anil.nayak@mahindra.com	Customer Identification *	: IDT-1
Location of Sample Collected *	: ICR-1	Serial Number *	: 27319
Last Date of Filtration *	: NP	Make *	: HPS
Date of Sampling *	: NP	Capacity *	: 5500 KVA
Date of Receipt *	: 03/10/2026	Voltage (HV/LV) *	: 33000V/800V
Sample Tested on	: 01/10/2026	Year of Manufacture *	: 2022
Oil Temperature *	: 40 °C	Weather Condition *	: Dry
Winding Temperature *	: 40 °C	Sample Condition on Receipt	: Good
Report Issue Date	: 14/10/2026	Colour of the Oil	: Pale Yellow
Location of Test Performed : Shanthala Power Limited Electrical Testing Laboratory Hubli.			
Method of Sampling for Insulating Liquids as per IS 6855:2017			

Test Condition (LAB):	Ambient Temp in °C : 25-29	RH in % : 40-49
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Sl. No.	Test Parameters	Reference Standard- IS: 1866: 2017	Transformer Oil	Test Results
		Test Method	Limits < 72.5kV	
1	Break Down Voltage (BDV)/ Di-Electric Strength, Electrode (spherical) gap 2.5mm	IS 6792: 2023 (Power Frequency Test Method) &IS 1866:2017 Mineral Insulating Oils in Elec Equip)	<40kV	52.1,51.9,53.6,50.8,54.7,49.5=52.1



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TRANSFORMER OIL TEST REPORT

ELECTRICAL- INSULATING MATERIALS & INSULATORS

ULR No. : NABL T0626KA184232600000490

DISSOLVED GAS ANALYSIS:

Sl. No.	Parameters	Unit	Test Method	Limits	Test Results
1	Methane(CH4)	μl/l	IS 9434-2019(Partial Degassing Method), IS 10593: 2023(Interpretation of Dissolved & Free Gases Analysis))	30-130	01
2	Ethylene (C2H4)			60-280	01
3	Ethane (C2H6)			20-90	ND
4	Acetylene(C2H2)			2-20	ND
5	Carbon Monoxide(Co)			400-600	50
6	Carbon Dioxide (Co2)			3800-14000	1230
7	Hydrogen (H2)			50-150	ND
8	Total Gas Content % by Volume				10.12

INTERPRETATION & OPINION ON THE TRANSFORMER OIL TEST REPORT:

Oil Parameters:

❖ The parameters of the oil sample of the transformer tested are within the permissible limits as per IS:1866-2017 "The parameters of Transformer Oil in service".

Dissolved Gas Analysis (DGA):

❖ The DGA gas contents are within the permissible limits as per IS 10593:2023.

OPINION:

❖ All the tests are to be repeated after **one year** to assess & ensure the condition of the transformer oil.

❖ **The results are to be properly documented for future diagnostic reference.**

❖ **These values are retained as benchmark for future reference.**

(Mangala.B.K)
Report Prepared By

(Suresh.S.P)
Reviewed By

(Shreya Mysore)
Authorized Signatory

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ELECTRICAL- INSULATING MATERIALS & INSULATORS		ULR No. : NABLT0626KA184232600000490	
Customer Name * : Mahindra TEQO Private Limited, 1st Floor, Mahindra and Mahindra, Raheja Chamber, No.12 Museum Road, Bangalore Urban Bangalore-560001, Karnataka,India, Bangalore, Karnataka-560001			
Contact Person *	: Anil Nayak	Sample No.	: 4 (Bottom)
Contact No *	: +91 9035549005	Plant Location *	: ICR-2
E- Mail ID *	: Anil.nayak@mahindra.com	Customer Identification *	: IDT_2
Location of Sample Collected *	: ICR-2	Serial Number *	: 27320
Last Date of Filtration *	: NP	Make *	: HPS
Date of Sampling *	: NP	Capacity *	: 5500 KVA
Date of Receipt *	: 03/10/2026	Voltage (HV/LV) *	: 33000V/800V
Sample Tested on	: 01/10/2026	Year of Manufacture *	: 2022
Oil Temperature *	: 40 °C	Weather Condition *	: Dry
Winding Temperature *	: 40 °C	Sample Condition on Receipt	: Good
Report Issue Date	: 14/10/2026	Colour of the Oil	: Pale Yellow
Location of Test Performed : Shanthala Power Limited Electrical Testing Laboratory Hubli.			
Method of Sampling for Insulating Liquids as per IS 6855:2017			

Test Condition (LAB):	Ambient Temp in °C : 25-29	RH in % : 40-49
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Sl. No.	Test Parameters	Reference Standard- IS: 1866: 2017	Transformer Oil	Test Results
		Test Method	Limits < 72.5kV	
1	Break Down Voltage (BDV)/ Di-Electric Strength, Electrode (spherical) gap 2.5mm	IS 6792: 2023 (Power Frequency Test Method) &IS 1866:2017 Mineral Insulating Oils in Elec Equip)	<40kV	70.1,69.9,71.1,68.6,71.8,73.5=70.8



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ELECTRICAL- INSULATING MATERIALS & INSULATORS

ULR No. : NABLT0626KA184232600000490

DISSOLVED GAS ANALYSIS:

Sl. No.	Parameters	Unit	Test Method	Limits	Test Results
1	Methane(CH4)	μl/l	IS 9434-2019(Partial Degassing Method), IS 10593: 2023(Interpretation of Dissolved & Free Gases Analysis))	30-130	04
2	Ethylene (C2H4)			60-280	01
3	Ethane (C2H6)			20-90	ND
4	Acetylene(C2H2)			2-20	ND
5	Carbon Monoxide(Co)			400-600	84
6	Carbon Dioxide (Co2)			3800-14000	954
7	Hydrogen (H2)			50-150	ND
8	Total Gas Content % by Volume				10.57

INTERPRETATION & OPINION ON THE TRANSFORMER OIL TEST REPORT:

Oil Parameters:

❖ The parameters of the oil sample of the transformer tested are within the permissible limits as per IS:1866-2017 "The parameters of Transformer Oil in service".

Dissolved Gas Analysis (DGA):

❖ The DGA gas contents are within the permissible limits as per IS 10593:2023.

OPINION:

- ❖ All the tests are to be repeated after **one year** to assess & ensure the condition of the transformer oil.
- ❖ **The results are to be properly documented for future diagnostic reference.**
- ❖ **These values are retained as benchmark for future reference.**

(Mangala.B.K)
Report Prepared By

(Suresh.S.P)
Reviewed By

(Shreya Mysore)
Authorized Signatory

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Customer Name * : Mahindra TEQO Private Limited, 1st Floor, Mahindra and Mahindra, Raheja Chamber, No.12 Museum Road, Bangalore Urban Bangalore-560001, Karnataka,India, Bangalore, Karnataka-560001			
Contact Person *	: Anil Nayak	Sample No.	: 5 (Bottom)
Contact No *	: +91 9035549005	Plant Location *	: ICR-3
E- Mail ID *	: Anil.nayak@mahindra.com	Customer Identification *	: IDT-3
Location of Sample Collected *	: ICR-3	Serial Number *	: 26664
Last Date of Filtration *	: NP	Make *	: HPS
Date of Sampling *	: NP	Capacity *	: 5500 KVA
Date of Receipt *	: 03/10/2026	Voltage (HV/LV) *	: 33000V/800V
Sample Tested on	: 01/10/2026	Year of Manufacture *	: 2022
Oil Temperature *	: 43 °C	Weather Condition *	: Dry
Winding Temperature *	: 43 °C	Sample Condition on Receipt	: Good
Report Issue Date	: 14/10/2026	Colour of the Oil	: Pale Yellow
Location of Test Performed : Shanthala Power Limited Electrical Testing Laboratory Hubli.			
Method of Sampling for Insulating Liquids as per IS 6855:2017			

Test Condition (LAB):	Ambient Temp in °C : 25-29	RH in % : 40-49
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Sl. No.	Test Parameters	Reference Standard- IS: 1866: 2017	Transformer Oil	Test Results
		Test Method	Limits < 72.5kV	
1	Break Down Voltage (BDV)/ Di-Electric Strength, Electrode (spherical) gap 2.5mm	IS 6792: 2023 (Power Frequency Test Method) &IS 1866:2017 Mineral Insulating Oils in Elec Equip)	<40kV	56.3,55.9,57.8,54.6,58.1,53.5



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ELECTRICAL- INSULATING MATERIALS & INSULATORS

ULR No. : NABL T0626KA184232600000490

DISSOLVED GAS ANALYSIS:

Sl. No.	Parameters	Unit	Test Method	Limits	Test Results
1	Methane(CH4)	μl/l	IS 9434-2019(Partial Degassing Method), IS 10593: 2023(Interpretation of Dissolved & Free Gases Analysis))	30-130	02
2	Ethylene (C2H4)			60-280	01
3	Ethane (C2H6)			20-90	ND
4	Acetylene(C2H2)			2-20	ND
5	Carbon Monoxide(Co)			400-600	93
6	Carbon Dioxide (Co2)			3800-14000	1631
7	Hydrogen (H2)			50-150	ND
8	Total Gas Content % by Volume				10.28

INTERPRETATION & OPINION ON THE TRANSFORMER OIL TEST REPORT:

Oil Parameters:

❖ The parameters of the oil sample of the transformer tested are within the permissible limits as per IS:1866-2017 "The parameters of Transformer Oil in service".

Dissolved Gas Analysis (DGA):

❖ The DGA gas contents are within the permissible limits as per IS 10593:2023.

OPINION:

- ❖ All the tests are to be repeated after **one year** to assess & ensure the condition of the transformer oil.
- ❖ **The results are to be properly documented for future diagnostic reference.**
- ❖ **These values are retained as benchmark for future reference.**

(Mangala.B.K)
Report Prepared By

(Suresh.S.P)
Reviewed By

(Shreya Mysore)
Authorized Signatory

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ELECTRICAL- INSULATING MATERIALS & INSULATORS		ULR No. : NABLT0626KA184232600000490	
Customer Name * : Mahindra TEQO Private Limited, 1st Floor, Mahindra and Mahindra, Raheja Chamber, No.12 Museum Road, Bangalore Urban Bangalore-560001, Karnataka,India, Bangalore, Karnataka-560001			
Contact Person *	: Anil Nayak	Sample No.	: 6 (Bottom)
Contact No *	: +91 9035549005	Plant Location *	: ICR-3
E- Mail ID *	: Anil.nayak@mahindra.com	Customer Identification *	: IDT-3
Location of Sample Collected *	: ICR-3	Serial Number *	: 26500
Last Date of Filtration *	: NP	Make *	: HPS
Date of Sampling *	: NP	Capacity *	: 5500 KVA
Date of Receipt *	: 03/10/2026	Voltage (HV/LV) *	: 33000V/800V
Sample Tested on	: 01/10/2026	Year of Manufacture *	: 2022
Oil Temperature *	: 43 °C	Weather Condition *	: Dry
Winding Temperature *	: 43 °C	Sample Condition on Receipt	: Good
Report Issue Date	: 14/10/2026	Colour of the Oil	: Pale Yellow
Location of Test Performed : Shanthala Power Limited Electrical Testing Laboratory Hubli.			
Method of Sampling for Insulating Liquids as per IS 6855:2017			

Test Condition (LAB):	Ambient Temp in °C : 25-29	RH in % : 40-49
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Sl. No.	Test Parameters	Reference Standard- IS: 1866: 2017	Transformer Oil	Test Results
		Test Method	Limits < 72.5kV	
1	Break Down Voltage (BDV)/ Di-Electric Strength, Electrode (spherical) gap 2.5mm	IS 6792: 2023 (Power Frequency Test Method) &IS 1866:2017 Mineral Insulating Oils in Elec Equip)	<40kV	54.8,53.3,55.9,52.6,56.5,51.7=54.1



**SHANTHALA POWER LIMITED
ELECTRICAL TESTING LABORATORY**

Shanthala No. 24, Priyadarshini Colony, Gokul Road, Hubballi, Hubli,
Dharwad-580030 Karnataka, India Mob No:09449867588
E-Mail ID: reports@shanthalaindia.com



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TRANSFORMER OIL TEST REPORT

ELECTRICAL- INSULATING MATERIALS & INSULATORS

ULR No. : NABL T0626KA184232600000490

DISSOLVED GAS ANALYSIS:

Sl. No.	Parameters	Unit	Test Method	Limits	Test Results
1	Methane(CH4)	μl/l	IS 9434-2019(Partial Degassing Method), IS 10593: 2023(Interpretation of Dissolved & Free Gases Analysis))	30-130	02
2	Ethylene (C2H4)			60-280	01
3	Ethane (C2H6)			20-90	ND
4	Acetylene(C2H2)			2-20	ND
5	Carbon Monoxide(Co)			400-600	171
6	Carbon Dioxide (Co2)			3800-14000	2352
7	Hydrogen (H2)			50-150	ND
8	Total Gas Content % by Volume				10.34

INTERPRETATION & OPINION ON THE TRANSFORMER OIL TEST REPORT:

Oil Parameters:

❖ The parameters of the oil sample of the transformer tested are within the permissible limits as per IS:1866-2017 "The parameters of Transformer Oil in service".

Dissolved Gas Analysis (DGA):

❖ The DGA gas contents are within the permissible limits as per IS 10593:2023.

OPINION:

- ❖ All the tests are to be repeated after **one year** to assess & ensure the condition of the transformer oil.
- ❖ **The results are to be properly documented for future diagnostic reference.**
- ❖ **These values are retained as benchmark for future reference.**

(Mangala.B.K)
Report Prepared By

(Suresh.S.P)
Reviewed By

(Shreya Mysore)
Authorized Signatory

	SHANTHALA POWER LIMITED ELECTRICAL TESTING LABORATORY Shanthala No. 24, Priyadarshini Colony, Gokul Road, Hubballi, Hubli, Dharwad-580030 Karnataka, India Mob No:09449867588 E-Mail ID: reports@shanthalaIndia.com	 NABL T0626KA18423
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TRANSFORMER OIL TEST REPORT		

ELECTRICAL- INSULATING MATERIALS & INSULATORS		ULR No. : NABLT0626KA184232600000490	
Customer Name *	:	Mahindra TEQO Private Limited, 1st Floor, Mahindra and Mahindra, Raheja Chamber, No.12 Museum Road, Bangalore Urban Bangalore-560001, Karnataka,India, Bangalore, Karnataka-560001	
Contact Person *	:	Anil Nayak	Sample No. : 7 (Bottom)
Contact No *	:	+91 9035549005	Plant Location * : ICR-4
E- Mail ID *	:	Anil.nayak@mahindra.com	Customer Identification * : IDT-4
Location of Sample Collected *	:	ICR-4	Serial Number * : 26665
Last Date of Filtration *	:	NP	Make * : HPS
Date of Sampling *	:	NP	Capacity * : 5500 KVA
Date of Receipt *	:	03/10/2026	Voltage (HV/LV) * : 33000V/800V
Sample Tested on	:	01/10/2026	Year of Manufacture * : 2022
Oil Temperature *	:	45 °C	Weather Condition * : Dry
Winding Temperature *	:	45 °C	Sample Condition on Receipt : Good
Report Issue Date	:	14/10/2026	Colour of the Oil : Pale Yellow
Location of Test Performed : Shanthala Power Limited Electrical Testing Laboratory Hubli.			
Method of Sampling for Insulating Liquids as per IS 6855:2017			

Test Condition (LAB):	Ambient Temp in °C : 25-29	RH in % : 40-49
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Sl. No.	Test Parameters	Reference Standard- IS: 1866: 2017	Transformer Oil	Test Results
		Test Method	Limits < 72.5kV	
1	Break Down Voltage (BDV)/ Di-Electric Strength, Electrode (spherical) gap 2.5mm	IS 6792: 2023 (Power Frequency Test Method) & IS 1866:2017 Mineral Insulating Oils in Elec Equip)	<40kV	64.1,63.0,65.2,62.5,66.6,60.9=63.7

TRANSFORMER OIL TEST REPORT

ELECTRICAL- INSULATING MATERIALS & INSULATORS

ULR No. : NABLT0626KA184232600000490

DISSOLVED GAS ANALYSIS:					
Sl. No.	Parameters	Unit	Test Method	Limits	Test Results
1	Methane(CH4)	μl/l	IS 9434-2019(Partial Degassing Method), IS 10593: 2023(Interpretation of Dissolved & Free Gases Analysis))	30-130	03
2	Ethylene (C2H4)			60-280	01
3	Ethane (C2H6)			20-90	ND
4	Acetylene(C2H2)			2-20	ND
5	Carbon Monoxide(Co)			400-600	91
6	Carbon Dioxide (Co2)			3800-14000	1654
7	Hydrogen (H2)			50-150	ND
8	Total Gas Content % by Volume				10.28

INTERPRETATION & OPINION ON THE TRANSFORMER OIL TEST REPORT:

Oil Parameters:
❖ The parameters of the oil sample of the transformer tested are within the permissible limits as per IS:1866-2017 “The parameters of Transformer Oil in service”.

Dissolved Gas Analysis (DGA):
❖ The DGA gas contents are within the permissible limits as per IS 10593:2023.

OPINION:
❖ All the tests are to be repeated after **one year** to assess & ensure the condition of the transformer oil.
❖ **The results are to be properly documented for future diagnostic reference.**
❖ **These values are retained as benchmark for future reference.**

	SHANTHALA POWER LIMITED ELECTRICAL TESTING LABORATORY Shanthala No. 24, Priyadarshini Colony, Gokul Road, Hubballi, Hubli, Dharwad-580030 Karnataka, India Mob No:09449867588 E-Mail ID: reports@shanthalaIndia.com	 NABL T0626KA18423
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TRANSFORMER OIL TEST REPORT		

ELECTRICAL- INSULATING MATERIALS & INSULATORS		ULR No. : NABLT0626KA184232600000490	
Customer Name *	:	Mahindra TEQO Private Limited, 1st Floor, Mahindra and Mahindra, Raheja Chamber, No.12 Museum Road, Bangalore Urban Bangalore-560001, Karnataka,India, Bangalore, Karnataka-560001	
Contact Person *	:	Anil Nayak	Sample No. : 8 (Bottom)
Contact No *	:	+91 9035549005	Plant Location * : ICR-4
E- Mail ID *	:	Anil.nayak@mahindra.com	Customer Identification * : --
Location of Sample Collected *	:	ICR-4	Serial Number * : 26666
Last Date of Filtration *	:	NP	Make * : HPS
Date of Sampling *	:	NP	Capacity * : 5500 KVA
Date of Receipt *	:	03/10/2026	Voltage (HV/LV) * : 33000V/800V
Sample Tested on	:	01/10/2026	Year of Manufacture * : 2022
Oil Temperature *	:	45 °C	Weather Condition * : Dry
Winding Temperature *	:	45 °C	Sample Condition on Receipt : Good
Report Issue Date	:	14/10/2026	Colour of the Oil : Pale Yellow
Location of Test Performed : Shanthala Power Limited Electrical Testing Laboratory Hubli.			
Method of Sampling for Insulating Liquids as per IS 6855:2017			

Test Condition (LAB):	Ambient Temp in °C : 25-29	RH in % : 40-49
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Sl. No.	Test Parameters	Reference Standard- IS: 1866: 2017	Transformer Oil	Test Results
		Test Method	Limits < 72.5kV	
1	Break Down Voltage (BDV)/ Di-Electric Strength, Electrode (spherical) gap 2.5mm	IS 6792: 2023 (Power Frequency Test Method) & IS 1866:2017 Mineral Insulating Oils in Elec Equip)	<40kV	58.8,57.6,59.3,56.4,60.1,55.5=57.9

ELECTRICAL- INSULATING MATERIALS & INSULATORS			ULR No. : NABLT0626KA184232600000490		
DISSOLVED GAS ANALYSIS:					
Sl. No.	Parameters	Unit	Test Method	Limits	Test Results
1	Methane(CH4)	µl/l	IS 9434-2019(Partial Degassing Method), IS 10593: 2023(Interpretation of Dissolved & Free Gases Analysis))	30-130	05
2	Ethylene (C2H4)			60-280	01
3	Ethane (C2H6)			20-90	ND
4	Acetylene(C2H2)			2-20	ND
5	Carbon Monoxide(Co)			400-600	186
6	Carbon Dioxide (Co2)			3800-14000	2622
7	Hydrogen (H2)			50-150	ND
8	Total Gas Content % by Volume				9.44

INTERPRETATION & OPINION ON THE TRANSFORMER OIL TEST REPORT:

Oil Parameters:
❖ The parameters of the oil sample of the transformer tested are within the permissible limits as per IS:1866-2017 “The parameters of Transformer Oil in service”.

Dissolved Gas Analysis (DGA):
❖ The DGA gas contents are within the permissible limits as per IS 10593:2023.

OPINION:
❖ All the tests are to be repeated after **one year** to assess & ensure the condition of the transformer oil.
❖ **The results are to be properly documented for future diagnostic reference.**
❖ **These values are retained as benchmark for future reference.**

	SHANTHALA POWER LIMITED ELECTRICAL TESTING LABORATORY Shanthala No. 24, Priyadarshini Colony, Gokul Road, Hubballi, Hubli, Dharwad-580030 Karnataka, India Mob No:09449867588 E-Mail ID: reports@shanthalaIndia.com		 NABL T0626KA18423

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TRANSFORMER OIL TEST REPORT		

ELECTRICAL- INSULATING MATERIALS & INSULATORS		ULR No. : NABLT0626KA184232600000490	
Customer Name * : Mahindra TEQO Private Limited, 1st Floor, Mahindra and Mahindra, Raheja Chamber, No.12 Museum Road, Bangalore Urban Bangalore-560001, Karnataka,India, Bangalore, Karnataka-560001			
Contact Person * : Anil Nayak		Sample No. : 9 (Bottom)	
Contact No * : +91 9035549005		Plant Location * : ICR-5	
E- Mail ID * : Anil.nayak@mahindra.com		Customer Identification * : IDT-5	
Location of Sample Collected * : ICR-5		Serial Number * : 07211	
Last Date of Filtration * : NP		Make * : HPS	
Date of Sampling * : NP		Capacity * : 5500 KVA	
Date of Receipt * : 03/10/2026		Voltage (HV/LV) * : 33000V/800V	
Sample Tested on : 01/10/2026		Year of Manufacture * : 2022	
Oil Temperature * : 45 °C		Weather Condition * : Dry	
Winding Temperature * : 45 °C		Sample Condition on Receipt : Good	
Report Issue Date : 14/10/2026		Colour of the Oil : Pale Yellow	
Location of Test Performed : Shanthala Power Limited Electrical Testing Laboratory Hubli.			
Method of Sampling for Insulating Liquids as per IS 6855:2017			

Test Condition (LAB):	Ambient Temp in °C : 25-29	RH in % : 40-49
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Sl. No.	Test Parameters	Reference Standard- IS: 1866: 2017	Transformer Oil	Test Results
		Test Method	Limits < 72.5kV	
1	Break Down Voltage (BDV)/ Di-Electric Strength, Electrode (spherical) gap 2.5mm	IS 6792: 2023 (Power Frequency Test Method) &IS 1866:2017 Mineral Insulating Oils in Elec Equip)	<40kV	72.6,71.8,73.9,70.6,74.8,69.0=72.1



**SHANTHALA POWER LIMITED
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TRANSFORMER OIL TEST REPORT

ELECTRICAL- INSULATING MATERIALS & INSULATORS

ULR No. : NABL T0626KA184232600000490

DISSOLVED GAS ANALYSIS:

Sl. No.	Parameters	Unit	Test Method	Limits	Test Results
1	Methane(CH4)	μl/l	IS 9434-2019(Partial Degassing Method), IS 10593: 2023(Interpretation of Dissolved & Free Gases Analysis))	30-130	02
2	Ethylene (C2H4)			60-280	01
3	Ethane (C2H6)			20-90	ND
4	Acetylene(C2H2)			2-20	ND
5	Carbon Monoxide(Co)			400-600	133
6	Carbon Dioxide (Co2)			3800-14000	1957
7	Hydrogen (H2)			50-150	ND
8	Total Gas Content % by Volume				10.03

INTERPRETATION & OPINION ON THE TRANSFORMER OIL TEST REPORT:

Oil Parameters:

❖ The parameters of the oil sample of the transformer tested are within the permissible limits as per IS:1866-2017 "The parameters of Transformer Oil in service".

Dissolved Gas Analysis (DGA):

❖ The DGA gas contents are within the permissible limits as per IS 10593:2023.

OPINION:

- ❖ All the tests are to be repeated after **one year** to assess & ensure the condition of the transformer oil.
- ❖ **The results are to be properly documented for future diagnostic reference.**
- ❖ **These values are retained as benchmark for future reference.**

(Mangala.B.K)
Report Prepared By

(Suresh.S.P)
Reviewed By

(Shreya Mysore)
Authorized Signatory

	SHANTHALA POWER LIMITED ELECTRICAL TESTING LABORATORY Shanthala No. 24, Priyadarshini Colony, Gokul Road, Hubballi, Hubli, Dharwad-580030 Karnataka, India Mob No:09449867588 E-Mail ID: reports@shanthalaIndia.com	 NABL T0626KA18423
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TRANSFORMER OIL TEST REPORT		

ELECTRICAL- INSULATING MATERIALS & INSULATORS		ULR No. : NABLT0626KA184232600000490	
Customer Name *	:	Mahindra TEQO Private Limited, 1st Floor, Mahindra and Mahindra, Raheja Chamber, No.12 Museum Road, Bangalore Urban Bangalore-560001, Karnataka,India, Bangalore, Karnataka-560001	
Contact Person *	:	Anil Nayak	Sample No. : 10 (Bottom)
Contact No *	:	+91 9035549005	Plant Location * : ICR-6
E- Mail ID *	:	Anil.nayak@mahindra.com	Customer Identification * : IDT-6
Location of Sample Collected *	:	ICR-6	Serial Number * : 27332
Last Date of Filtration *	:	NP	Make * : HPS
Date of Sampling *	:	NP	Capacity * : 5500 KVA
Date of Receipt *	:	03/10/2026	Voltage (HV/LV) * : 33000V/800V
Sample Tested on	:	01/10/2026	Year of Manufacture * : 2022
Oil Temperature *	:	45 °C	Weather Condition * : Dry
Winding Temperature *	:	45 °C	Sample Condition on Receipt : Good
Report Issue Date	:	14/10/2026	Colour of the Oil : Pale Yellow
Location of Test Performed : Shanthala Power Limited Electrical Testing Laboratory Hubli.			
Method of Sampling for Insulating Liquids as per IS 6855:2017			

Test Condition (LAB):	Ambient Temp in °C : 25-29	RH in % : 40-49
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Sl. No.	Test Parameters	Reference Standard- IS: 1866: 2017	Transformer Oil	Test Results
		Test Method	Limits < 72.5kV	
1	Break Down Voltage (BDV)/ Di-Electric Strength, Electrode (spherical) gap 2.5mm	IS 6792: 2023 (Power Frequency Test Method) & IS 1866:2017 Mineral Insulating Oils in Elec Equip)	<40kV	75.0,74.2,76.9,72.6,77.8,70.5=74.5



**SHANTHALA POWER LIMITED
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TRANSFORMER OIL TEST REPORT

ELECTRICAL- INSULATING MATERIALS & INSULATORS

ULR No. : NABLT0626KA184232600000490

DISSOLVED GAS ANALYSIS:

Sl. No.	Parameters	Unit	Test Method	Limits	Test Results
1	Methane(CH4)	μl/l	IS 9434-2019(Partial Degassing Method), IS 10593: 2023(Interpretation of Dissolved & Free Gases Analysis))	30-130	07
2	Ethylene (C2H4)			60-280	55
3	Ethane (C2H6)			20-90	05
4	Acetylene(C2H2)			2-20	01
5	Carbon Monoxide(Co)			400-600	55
6	Carbon Dioxide (Co2)			3800-14000	826
7	Hydrogen (H2)			50-150	01
8	Total Gas Content % by Volume				10.12

INTERPRETATION & OPINION ON THE TRANSFORMER OIL TEST REPORT:

Oil Parameters:

❖ The parameters of the oil sample of the transformer tested are within the permissible limits as per IS:1866-2017 "The parameters of Transformer Oil in service".

Dissolved Gas Analysis (DGA):

❖ The DGA gas contents are within the permissible limits as per IS 10593:2023.

OPINION:

- ❖ All the tests are to be repeated after **one year** to assess & ensure the condition of the transformer oil.
- ❖ **The results are to be properly documented for future diagnostic reference.**
- ❖ **These values are retained as benchmark for future reference.**

(Mangala.B.K)
Report Prepared By

(Suresh.S.P)
Reviewed By

(Shreya Mysore)
Authorized Signatory

	SHANTHALA POWER LIMITED ELECTRICAL TESTING LABORATORY Shanthala No. 24, Priyadarshini Colony, Gokul Road, Hubballi, Hubli, Dharwad-580030 Karnataka, India Mob No:09449867588 E-Mail ID: reports@shanthalaIndia.com	 NABL T0626KA18423
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TRANSFORMER OIL TEST REPORT		

ELECTRICAL- INSULATING MATERIALS & INSULATORS		ULR No. : NABLT0626KA184232600000490	
Customer Name *	:	Mahindra TEQO Private Limited, 1st Floor, Mahindra and Mahindra, Raheja Chamber, No.12 Museum Road, Bangalore Urban Bangalore-560001, Karnataka,India, Bangalore, Karnataka-560001	
Contact Person *	:	Anil Nayak	Sample No. : 11 (Bottom)
Contact No *	:	+91 9035549005	Plant Location * : SWITCH YARD
E- Mail ID *	:	Anil.nayak@mahindra.com	Customer Identification * : --
Location of Sample Collected *	:	SWITCH YARD	Serial Number * : 302416/22
Last Date of Filtration *	:	NP	Make * : KALPA
Date of Sampling *	:	NP	Capacity * : 100 KVA
Date of Receipt *	:	03/10/2026	Voltage (HV/LV) * : 33000V/415V
Sample Tested on	:	01/10/2026	Year of Manufacture * : 2022
Oil Temperature *	:	45 °C	Weather Condition * : Dry
Winding Temperature *	:	45 °C	Sample Condition on Receipt : Good
Report Issue Date	:	14/10/2026	Colour of the Oil : Pale Green
Location of Test Performed : Shanthala Power Limited Electrical Testing Laboratory Hubli.			
Method of Sampling for Insulating Liquids as per IS 6855:2017			

Test Condition (LAB):	Ambient Temp in °C : 25-29	RH in % : 40-49
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Sl. No.	Test Parameters	Reference Standard- IS: 1866: 2017	Transformer Oil	Test Results
		Test Method	Limits < 72.5kV	
1	Break Down Voltage (BDV)/ Di-Electric Strength, Electrode (spherical) gap 2.5mm	IS 6792: 2023 (Power Frequency Test Method) & IS 1866:2017 Mineral Insulating Oils in Elec Equip)	<40kV	60.9,59.2,61.3,58.8,62.6,57.5=60.0

	SHANTHALA POWER LIMITED ELECTRICAL TESTING LABORATORY Shanthala No. 24, Priyadarshini Colony, Gokul Road, Hubballi, Hubli, Dharwad-580030 Karnataka, India Mob No:09449867588 E-Mail ID: reports@shanthalaindia.com	 NABL T0626KA18423
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TRANSFORMER OIL TEST REPORT		

ELECTRICAL- INSULATING MATERIALS & INSULATORS			ULR No. : NABLT0626KA184232600000490		
DISSOLVED GAS ANALYSIS:					
Sl. No.	Parameters	Unit	Test Method	Limits	Test Results
1	Methane(CH ₄)	μl/l	IS 9434-2019(Partial Degassing Method), IS 10593: 2023(Interpretation of Dissolved & Free Gases Analysis))	30-130	05
2	Ethylene (C ₂ H ₄)			60-280	01
3	Ethane (C ₂ H ₆)			20-90	ND
4	Acetylene(C ₂ H ₂)			2-20	ND
5	Carbon Monoxide(Co)			400-600	186
6	Carbon Dioxide (Co ₂)			3800-14000	2622
7	Hydrogen (H ₂)			50-150	ND
8	Total Gas Content % by Volume				9.44

INTERPRETATION & OPINION ON THE TRANSFORMER OIL TEST REPORT: Oil Parameters: ♦ The parameters of the oil sample of the transformer tested are within the permissible limits as per IS:1866-2017 “The parameters of Transformer Oil in service”. Dissolved Gas Analysis (DGA): ♦ The DGA gas contents are within the permissible limits as per IS 10593:2023. OPINION: ♦ All the tests are to be repeated after one year to assess & ensure the condition of the transformer oil. ♦ The results are to be properly documented for future diagnostic reference. ♦ These values are retained as benchmark for future reference.

**** END OF THE REPORT ****