



**TRANSMISSION CORPORATION OF ANDHRA PRADESH LIMITED**  
(An ISO 9001:2008 Certified Company)

**OIL TESTING LABORATORY :: VIJAYAWADA**  
**TRANSFORMER OIL TEST REPORT**

**SS Name :** TANGUTUR-132/33KV-SUBSTATION

OTR No: VJA10002617

Ref: OTLVJA2308720

Equipment : DRUM-4 (BOTTOM)

<b>Equipment Details</b>		<b>SAMPLE Details</b>	
Make :	Capacity : 31.5 MVA	Sample Dt : 16.08.2023	Oil Temp : 0.0 °C
Sl.no :	Equipment : DRUM-4	Recpt Dt : 16.08.2023	Load@Sample :
YOM :	HV level : 132KV	Test Dt : 16.08.2023	
Total Quantity of Oil in(Litres)		Equipment : 0.00	Container : 2.00

**Remarks :** Oil Sample Collected from New Transformer Tank pertaining to 31.5 MVA  
ECE Make PTR Bearing S.No.S-87525 at 132KVSSS Tangutur

**TEST RESULTS**

Reference standard as per IS: 1866-2017

Sl.no	Parameter	Measured Value	UoM	Violation limit	Test method
01	Acidity	NT	mg/g	<0.200	
02	Hydrogen (H <sub>2</sub> )	ND	ppm		
03	Methane(CH <sub>4</sub> )	ND	ppm		
04	Ethane(C <sub>2</sub> H <sub>6</sub> )	ND	ppm		
05	Ethylene(C <sub>2</sub> H <sub>4</sub> )	ND	ppm		
06	Acetylene(C <sub>2</sub> H <sub>2</sub> )	ND	ppm		
07	Carbon Monoxide (CO)	ND	ppm		
08	Appearance & Colour	CLEAR			
09	B.D.V@ 61.8Hz,with stirrer)	77.9	kV	>40.00	
10	Oxygen (O <sub>2</sub> )	693.52	ppm		
11	Inter Facial Tension	48.59	mN/m	>22.00	
12	Water content	3.7	mg/kg	<30.00	
13	Resistivity @ 90 °C	26.60	GOM	>0.20	
14	Carbon Dioxide(CO <sub>2</sub> )	227.16	ppm		
15	Nitrogen (N <sub>2</sub> )	1783.80	ppm		
16	Flash point	160.1	°C	>135.00	
17	Viscocity @ 40°C	11.427	mm <sup>2</sup> /s	<12.00	
18	Density @20 °C	0.8611	g/cm <sup>3</sup>	<0.895	
19	Tan Delta @ 90 °C, 55Hz	0.024992		<0.500	

<b>Environmental Conditions</b>	Room temp	25.0 ° C	Rel Humidity	40
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NT	NOT TESTED	ND	NOT DETECTED
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Test conditions for BDV:  
Oil Temp: 30.0 ° C  
freq:61.8 Hz,  
Electrode type:Hemispherical brass,  
6 test values: 83.9,82.5,80.1,75.4,73.5,71.9

Test conditions for DDF:  
elec.stress: 1kv/mm,  
freq: 55 HZ.  
Test conditions for Resistivity:  
elec.stress: 250kv/mm,  
electrification time: 60 sec.

**Remarks :** As per IS:1866/2017

Specifications for new oil

BDV before treatment 30KV and after treatment 70KV (general), 60 KV min



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YOM :	HV level : 132KV	Test Dt : 16.08.2023	
Total Quantity of Oil in(Litres)		Equipment : 0.00	Container : 2.00

after filling and prior to energization

Water content limits are 30mg/kg for bulk oil supply, 40mg/kg for delivery in drums(general), 10mg/kg max after filling and prior to energization

Acidity 0.01mg KOH/g max.(general),

0.03 mg KOH/g Max after filling and prior to energization.

IFT 40mN/m min (general), 35mN/m min after filling and prior to energization

Density at 20deg 0.895 g/ml max

Viscosity at 40deg 12mm sq/s max

Flashpoint 135deg min

DDF at 90deg 0.005 max (general), 0.015 max after filling and prior to energization

Resistivity at 90deg 60 GOM min after filling and prior to energization.

Approver ID : 1029317

Name : VENKATA NAGESWARA RAO

Designation : EE/MRT&TRANSFORMERS/VIJAYAWADA

Appr. Dt : 17.08.2023