



MEASURE TECHNO LAB

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CALIBRATION CERTIFICATE OF MICRO PIPETTE

CALIBRATION CERTIFICATE NO.: MTL / KSDH / R03 / 04 - 23

ULR - CC254523000008968F

1.0 Service Request No.: MTL / 05 / 04 / 23 - 24

1.1 Issued to: HIV Testing Laboratory,
ICTC Unit,
Kharagpur Sub Division Hospital,
Kharagpur, Paschim Medinipur,
Pin - 721301.

1.2 Description & Identification of item to be Calibrated:

a) Name:	Micro Pipette	b) Code No.:	KSDH / ICTC / MP - 02
c) Sl. No.:	19227538	d) Make:	Microlit
e) Model / Type:	N.S.	f) Range:	5 µl to 50 µl
g) Sensor:	N.A.	h) Resolution:	1 µl
i) End User:	Laboratory	j) Accuracy:	N.S.
k) Calibration done at:	On Site / <input checked="" type="checkbox"/> In House		

1.3 Date of receipt of item : 04-04-23

1.5 Date of calibration : 05-04-23

1.7 Date of Issue : 07-04-23

1.8 Environmental Conditions During Calibration:

Temperature: 20 °C ± 2 °C
Humidity: 30 % RH to 75 % RH
Pressure: 1005.3 mbar

1.4 Physical Condition of DUC : OK
1.6 Recommended date of next calibration : 05-04-24

1.9 Method of Calibration:

SOP / MASS / 02 (As Per ISO : 8655 - 6 : 2002)

2.0 Traceability :

a) Standards used for calibration are traceable to National standards through NABL Accredited Laboratory.
b) The following standards / Equipment have been used.

- i) Digital Thermometer With Sensor Cal. Certificate No. MTL / TH / DTM / R01 / 09 - 22 (MTL, Barrackpore) (Cal. Date: 16/09/22, Due Date: 16/09/23)
- ii) Weights Cal. Certificate No. NC-210 (NSTAR, Ahmedabad) (Cal. Date: 16/05/22, Due Date: 15/05/25)

2.1 Result :

Mechanical Calibration

Sl. No.	Parameter/ Range	Nominal Value µl	Mass of Water mg	Volume of Water at 20 °C µl	Error µl	Measurement Expanded Uncertainty ± µl
1.	Volume	5	5.1002	5.1206	0.1206	0.039
2.	5 µl to 50 µl	25	25.1586	25.2592	0.2592	0.39
3.		50	50.1809	50.3816	0.3816	0.39

- Remarks: i) Cubical Expansion co-efficient of pipette material taken as $10^{-5} \mu\text{l} / ^\circ\text{k}$.
ii) This result has an expanded uncertainty with a coverage factor $k=2$ at approximately 95% confidence level.
iii) The calibration certificate issued for this instrument is to be used for scientific or industrial purposes only.

DUC - Device Under Calibration

N.S. - Not Specified

N.A. - Not Applicable

Opinions and Interpretations

Calibrated	<input checked="" type="checkbox"/>	Accepted / Valid for use
Limited Use	<input type="checkbox"/>	Rejected / Out of use

Calibration Engineer
Measure Techno Lab
Kolkata
K. Barát
Calibration Engineer

Checked / Approved by:
KOLKATA
Quality & Technical Manager
S. Pandey