



MEASURE TECHNO LAB

2, B.T. ROAD (JAYANTI CINEMA COMPLEX), BARRACKPORE,
KOLKATA - 700120, W.B.



Phone : 033 - 2215 - 0032, 2215 - 9687, 8100875519, Mobile: 9831190974,
LAB:- 8100143376, E-mail: measuretechno@yahoo.co.in

CALIBRATION CERTIFICATE OF MICRO PIPETTE

CC - 2545

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ALIBRATION CERTIFICATE NO.: MTL / NRS MCH - ICTC(M) / R03 / 01 - 24

ULR - CC254524000004982F

1.0 Service Request No.: MTL / 22 / 01 / 23 - 24

1.1 Issued to: M/s. NRS MCH - ICTC,
Department of Microbiology,
Kolkata - 700014.

1.2 Description & Identification of item to be Calibrated:	a) Name:	Micro Pipette	b) Code No.:	NRS - ICTC - M - MP - 01
	c) Sl. No.:	11017349	d) Make:	Microlit
	e) Model / Type:	N.S.	f) Range:	20 µl to 200 µl
	g) Sensor:	N.A.	h) Resolution:	1 µl
	i) End User:	Microbiology (ICTC)	j) Accuracy:	N.S.
	k) Calibration done at:	On Site / ✓ In House		

1.3 Date of receipt of item : 22-01-24

1.4 Physical Condition of DUC : OK

1.5 Date of calibration : 24-01-24

1.6 Recommended date of next calibration : 24-01-25

1.7 Date of Issue : 24-01-24

1.8 Environmental Conditions During Calibration:

Temperature:	20 °C ± 2 °C
Humidity:	30 % RH to 75 % RH
Pressure:	1012 mbar

1.9 Method of Calibration: SOP / MASS / 02 (As Per ISO : 8655 - 6 : 2022)

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) Weights Cal. Certificate No. NC-210 (NSTAR, Ahmedabad) (Cal. Date: 16/05/22, Due Date: 15/05/25)
 - ii) Digital Thermometer With Sensor Cal. Certificate No. MTL / TH / DTM / R01 / 09 - 23 (MTL, Barrackpore) (Cal. Date: 15/09/23, Due Date: 15/09/24)

2.1 Result:

Mechanical Calibration: (Mass & Volume)

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	20	20.5103	20.5923	0.5923	0.33
2.	20 µl to 200 µl	100	98.6843	99.0790	-0.9210	0.33
3.		200	200.4347	201.2364	1.2364	0.34

- 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.
 - iv) Calibrations are carried out without any adjustment or repair.

DUC - Device Under Calibration

N.S. - Not Specified

N.A. - Not Applicable

Opinions and Interpretations	
Calibrated	✓ Accepted / Valid for use
Limited Use	Rejected / Out of use

Calibration Engineer
Measure Techno Lab
S. Mahapatra
Calibration Engineer

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

Form No. - MTL/22/2006

Issue No. : 2 Issue Date : 10.11.06

Rev. No. : 04 Rev. Date : 01.04.22

