



# MEASURE TECHNO LAB

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



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## CALIBRATION CERTIFICATE OF MICRO PIPETTE

CC - 2545

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CALIBRATION CERTIFICATE NO.: MTL / MCL / R12 / 12 - 23

ULR - CC254523000042721F

1.0 Service Request No.: MTL / 12B / 12 / 23 - 24

1.1 Issued to: M/s. Mukherjee Clinical Laboratory,  
43/C/5, Jatindra Sarani, Champadali,  
North 24 Parganas, Kolkata - 700124.

|  |                         |                      |                |               |
|--|-------------------------|----------------------|----------------|---------------|
| 1.2 Description & Identification of item to be Calibrated: | a) Name:                | Micro Pipette        | b) Code No.:   | MCL / MP / 02 |
|  | c) Sl. No.:             | NE459976             | d) Make:       | Erba Manheim  |
|  | e) Model / Type:        | N.S.                 | f) Range:      | 5 µl to 50 µl |
|  | g) Sensor:              | N.A.                 | h) Resolution: | 0.5 µl        |
|  | i) End User:            | Lab                  | j) Accuracy:   | N.S.          |
|  | k) Calibration done at: | On Site / √ In House |                |               |

1.3 Date of receipt of item : 12-12-23

1.4 Physical Condition of DUC : OK

1.5 Date of calibration : 13-12-23

1.6 Recommended date of next calibration : 13-12-24

1.7 Date of Issue : 14-12-23

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           | 5                | 4.9174           | 4.9371                      | -0.0629  | 0.032                                 |
| 2.      | 5 µl to 50 µl    | 25               | 25.0054          | 25.1054                     | 0.1054   | 0.33                                  |
| 3.      |                  | 50               | 49.6552          | 49.8538                     | -0.1462  | 0.33                                  |

Remarks: i) Cubical Expansion co-efficient of pipette material taken as 10<sup>-5</sup> µl / °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  
Kolkata  
S. Manapatra  
Calibration Engineer

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