



# MEASURE TECHNO LAB

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



CC - 2545

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## CALIBRATION CERTIFICATE OF MICRO PIPETTE

CALIBRATION CERTIFICATE NO.: MTL / HE / R06 / 09 - 24

ULR - CC254524000045114F

Page: 1 of 1

1.0 Service Request No.: MTL / 13A / 09 / 24 - 25

1.1 Issued to: M/s. Halder Enterprise,  
458 / 1A, Motilal Colony,  
P.O. - Rajbari, P.S. - Airport, Pin - 700081.

1.2 Description & Identification of item to be Calibrated:	a) Name:	Micro Pipette	b) Code No.:	HE / MP - 01
	c) Sl. No.:	TD737056	d) Make:	Meril
	e) Model / Type:	Merilette	f) Range:	100 µl to 1000 µl
	g) Sensor:	N.A.	h) Resolution:	5 µl
	i) End User:	Laboratory	j) Accuracy:	N.S.
	k) Calibration done at:	On Site / √ In House		

1.3 Date of receipt of item : 13-09-24

1.4 Physical Condition of DUC : OK

1.5 Date of calibration : 14-09-24

1.6 Recommended date of next calibration : 14-09-25

1.7 Date of Issue : 16-09-24

1.8 Environmental Conditions During Calibration:

Temperature:	20 °C ± 2 °C
Humidity:	30 % RH to 75 % RH
Pressure:	1003 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	100	97.5849	97.9752	-2.0248	0.35
2.	100 µl to 1000	500	501.1928	503.1976	3.1976	0.37
3.	µl	1000	1000.2578	1004.2588	4.2588	0.38

- 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  
Calibrated by:  
Measure Techno Lab  
Kolkata  
K. Baral  
Calibration Engineer

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