



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

CALIBRATION CERTIFICATE NO.: MTL / SQDPL / R12 / 03 - 24

ULR - CC254524000012790F

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1.0 Service Request No.: MTL / 18A / 03 / 23 - 24

1.1 Issued to: M/s. SpectroQ Diagnostics Pvt. Ltd.
Plot No. - 853 / 4786, 1st Floor,
Jharapada, Govinda Prasad, Cuttack Road,
Bhubaneswar, Khordha - 751006.

1.2 Description & Identification of item to be Calibrated:	a) Name:	Micro Pipette	b) Code No.:	PPT - 05
	c) Sl. No.:	BU07654	d) Make:	Mispa
	e) Model / Type:	N.S.	f) Range:	20 µl to 200 µl
	g) Sensor:	N.A.	h) Resolution:	1 µl
	i) End User:	Lab	j) Accuracy:	N.S.
	k) Calibration done at:	On Site / √ In House		

1.3 Date of receipt of item : 16-03-24

1.4 Physical Condition of DUC : OK

1.5 Date of calibration : 19-03-24

1.6 Recommended date of next calibration : 19-03-25

1.7 Date of Issue : 21-03-24

1.8 Environmental Conditions During Calibration:

Temperature:	20 °C ± 2 °C
Humidity:	30 % RH to 75 % RH
Pressure:	1008 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	20.3484	20.4298	0.4298	0.32
2.	20 µl to 200 µl	100	100.2330	100.6339	0.6339	0.33
3.		200	200.1674	200.9681	0.9681	0.36

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
Calibrated by
Kolkata
S.Mahapatra S.M
Calibration Engineer

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