
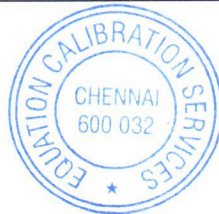
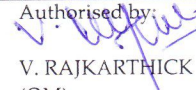


CALIBRATION CERTIFICATE

EQN/FT/7.8/01		Page 1 of 2	
CRF No.	: EQN/CRF/2112007	Date of Calibration	: 01-Dec-21
Certificate No	: 2021-22/EQN/2112007-03	Recom. Due Date	: 30-May-22
ULR No.	: CC276021000011426F		
Customer Details		Calibrated at	: Lab
M/s. BIOLINE LABORATORY		Date of Receipt	: 29-Nov-21
CKS Building 2nd Floor,		Cond. On Receipt	: Satisfactory
No. 21/829 Kallai Main Road,		Date of Issue	: 03-Dec-21
Calicut - 673 003, Kerala			
Details of Test Instrument:			
Description	: Micropipette	Model No.	: --
Range	: 5 - 50µl	Serial No	: 316551
Least Count	: 0.5µl	Identification No.	: BL/KALLAI/BC/PIP-05
Make	: MERILETTE	Accuracy	: As per Manual
Working range	: --	Location	: Biochemistry
Details of Standard Used			
Name	Certificate No.	Valid upto	Traceability
Electronic SemiMicro Balance	2021-22/EQN/MASTER-256	07-May-22	EQN, Chennai.
CP No	: EQN/CP/MS-03		
Environmental Details	: Temperature : 25±2°C		Relative Humidity : 50±10 % RH
Calibration Results			
1. Lower Volume :	5 µl	No. of Measurements :	10
<input type="text" value="4.96"/>	<input type="text" value="4.93"/>	<input type="text" value="5.00"/>	<input type="text" value="5.03"/>
<input type="text" value="5.00"/>	<input type="text" value="4.95"/>	<input type="text" value="4.94"/>	<input type="text" value="5.04"/>
<input type="text" value="4.95"/>	<input type="text" value="4.92"/>		
Mean Value :	4.97 µl		
Error Limits(±)			
Systematic Error :	-0.03 µl	0.13 µl	
Systematic Error :	-0.54 %	2.50 %	
Random Error :	0.04 µl	0.08 µl	
Random Error :	0.85 %	1.50 %	
Measurement Uncertainty :	± 0.36 µl		

 Calibrated by :

K. VIGNESHWARAN
 (Calibration Engineer)

 Authorised by:

V. RAJKARTHICK
 (QM)

CALIBRATION CERTIFICATE

 ULR No. : CC276021000011424F
 Certificate No : 2021-22/EQN/ 2112007-01

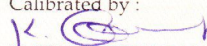
Page 2 of 2

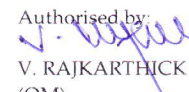
MECHANICAL CALIBRATION (Volume)				
Calibration Results				
2. Middle Volume :	500	μl	No. of Measurements :	10
500.80	499.78		501.30	499.95
499.28	499.70		498.88	500.88
501.06	501.68			
Mean Value :	500.33	μl		
Error Limits(\pm)				
Systematic Error :	0.33	μl	4.00	μl
Systematic Error :	0.07	%	0.80	%
Random Error :	0.94	μl	1.50	μl
Random Error :	0.19	%	0.30	%
Measurement Uncertainty :		\pm	0.36 μl	
3. Nominal Volume :	1000	μl	No. of Measurements :	10
999.50	1002.06		1000.94	1003.22
998.49	1003.70		999.59	999.60
1001.79	999.82			
Mean Value :	1000.87	μl		
Error Limits(\pm)				
Systematic Error :	0.87	μl	8.00	μl
Systematic Error :	0.09	%	0.80	%
Random Error :	1.75	μl	3.00	μl
Random Error :	0.18	%	0.30	%
Measurement Uncertainty :		\pm	0.36 μl	

Remarks

1. The reported Expanded Uncertainty is calculated at 95.45 % C.I. with coverage factor $k=2$
2. The Above Results are within the maximum permissible Error

End of certificate

 Calibrated by :

 K. VIGNESHWARAN
 (Calibration Engineer)

 Authorised by:

 V. RAJKARTHICK
 (QM)