

Level 4 Calibration

Service Documentation

Client Information

Company Pipettes.com A Transcat Company
 Address 77 Main Street
 Hopkinton, MA 01748
 Phone 5084357301

Client Instrument

Manufacturer GILSON
 Model Pipetman P-100
 Serial # X99992X
 ID/User Sample

Laboratory Test Conditions

Temperature (19-24 °C) 21
 Relative Humidity (45-75%) 51
 Bar. Pressure (kPa) 101.2
 Water Den. (gm/ml) 0.9969
 Density Correction (z-factor) 1.0031
 Water Conductivity (μ S) 1.59
 Evaporation Rate (mg) 0.002

Laboratory Test Equipment

Test Balance Serial # 1-1119423483
 Test Balance Model #1-MX5
 Test Balance Readability (mg) 0.001
 Test Balance NIST Cert. Date 24/Oct/2014
 Test Balance NIST Cert Due Date 31/Oct/2015

Replacement Parts

☒ O-Ring ☐ Battery
☒ Seal ☐ Shaft/Nozzle Filter(s)
☐ Friction Ring ☐ Tip Ejector
☐ Shaft/Nozzle ☐ Multi-Channel Tipcone
☐ Plunger button ☐ Housing Screw
☐ Plunger Button Cap ☐ Other (see Comments)
☐ Calibration mechanism was adjusted

Quality Control Authorization

QC Reviewer XX

QC Date 25/Feb/2015

Signature

Mike Anema, Lab Manager

The calibration results published in this certificate were obtained gravimetrically using Grade 3 purified water, equipment manufacturer or validated substitute tips, and ISO8655 compliant test equipment that are traceable to NIST and through NIST to the International System of Units (SI). TTE certifies that the above measuring device meets or exceeds all measurement tolerances, unless otherwise noted. TTE prohibits the reproduction of this document, except in its entirety.

Certificate ID**Comments**

Pipettes.com A Transcat Company

Service Information

Service Date 25/Feb/2015
 Certificate ID # 02252015-X99992X
 Test Technician YY
 Next Due Date 25/May/2015

As Found Data

Test Volumes (μ L)	10	50	100
1	10.05	49.83	99.82
2	10.03	49.86	99.69
3	10.02	49.82	99.68
4	10.06	49.88	99.74
Mean (mg)	10.04	49.85	99.73
Density Corr.	1.0031	1.0031	1.0031
Mean (ul)	10.07	50.00	100.04
Accuracy (% Dev)	0.70	0.00	0.04
Inaccuracy Tolerance	3.5%	0.8%	0.8%
Precision (CV%)	0.18	0.06	0.06
Imprecision Tolerance	1.0%	0.24%	0.15%
Test Uncertainty (\pm uL / \pm %)	0.018 / 0.18%	0.035 / 0.07%	0.127 / 0.13%

Test Result**PASS****PASS****PASS****As Left Data**

Test Volumes (μ L)	10	50	100
1	10.02	49.78	99.74
2	10.00	49.85	99.78
3	10.02	49.82	99.72
4	10.03	49.79	99.83
5	10.00	49.77	99.76
6	10.03	49.84	99.74
7	9.98	49.81	99.81
8	10.02	49.77	99.73
9	10.01	49.79	99.76
10	10.03	49.82	99.71
Mean (mg)	10.01	49.80	99.76
Density Corr.	1.0031	1.0031	1.0031
Mean (ul)	10.04	49.95	100.07
Accuracy (% Dev)	0.40	-0.10	0.07
Inaccuracy Tolerance	3.5%	0.8%	0.8%
Precision (CV%)	0.17	0.06	0.04
Imprecision Tolerance	1.0%	0.24%	0.15%
Test Uncertainty (\pm uL / \pm %)	0.018 / 0.18%	0.035 / 0.07%	0.127 / 0.13%

Test Result**PASS****PASS****PASS**

PASS grade denotes that tolerances have been met according to OEM specifications, exclusive of measurement uncertainty. The risk for reporting a false PASS result is calculated to be < 2%. The reported expanded uncertainty value uses a coverage factor k=2 to a coverage probability of approximately 95%.

Procedure Referenced: PipettesCS0113.1

V2.23