

Name of research institute or organization:

Spaelti-TS AG, Wiesenstrasse 13, CH-5412 Gebenstorf

Title of project:

Influence of altitude on the result of a piston pipette volume with air cushion

Project leader and team:

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Project description:

In this study, it was verified that the altitude of the measuring station has an effect on the measurement result for the calibration of pipettes with air cushion.

Is a pipette adjusted correctly at 1013hPa, the same pipette can emit an effective volume at 850hPa (about 1500m.a.s.l.), which is near the lower limit of the allowed systematic variation according to ISO8655.

Pipettes with air cushions should be adjusted and calibrated at the location of the operation.

For comparison measurements between laboratories (for example, for round robin tests), the measured results can be corrected to the same altitude as the pilot laboratory. The study shows the accuracy of the correction factor.

For comparative measurements the measured value can be corrected, however the exact dead volume and the capillary rise must be known. These two values must be considered in the measurement uncertainty budget.

Key words:

calibration of pipettes, Pipettes with air cushions, different altitudes, calibrated in different altitudes, Influence of Air cushion, Influence of the amount of metered liquid, Volume of the air cushion

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