

Standard for Breath Alcohol Measuring Instrument Calibration



WHAT IS AN AAFS STANDARD FACTSHEET?

The AAFS produces clear, concise, and easy-to-understand factsheets to summarize the contents of technical and professional forensic science standards on the OSAC Registry. They are not intended to provide an interpretation for any portion of a published standard.

WHAT IS THE PURPOSE OF THIS STANDARD?

Breath alcohol testing is widely used to determine the alcohol (ethanol) content of an individual.

This standard provides a model for Breath Alcohol Programs to follow in developing and validating a calibration method for evidentiary breath alcohol measuring instruments. Adjustment of an evidentiary breath alcohol instrument is also addressed with the inclusion of requirements for that process.

This standard is not intended to cover preliminary (non-evidentiary) testing, ignition interlock, or federally-regulated testing.

WHY IS THIS STANDARD IMPORTANT? WHAT ARE ITS BENEFITS?

This standard sets detailed foundational requirements to be included in a calibration method for breath alcohol measuring instruments while acknowledging that calibration methods may need to be optimized to meet applicable statutes, regulations, judicial precedence, and this standard. This standard sets the requirements for the calculation of accuracy (bias and precision) and requires measurement uncertainty of the calibration to be evaluated.

Evaluation of instrument performance is required before an adjustment. It is recommended that this data be used to evaluate prior instrument results. After an adjustment, the instrument must be calibrated before the instrument is used for evidential breath alcohol testing..

Minimum elements of a calibration certificate are specified.



HOW IS THIS STANDARD USED, AND WHAT ARE THE KEY ELEMENTS?

Breath Alcohol Programs vary widely in their requirements (statutory, regulatory, programmatic), resources, and oversight/administration. The activities implemented by a Breath Alcohol Program may include the calibration of evidential breath alcohol measuring instruments.

The requirements provided address:

- the development and validation of calibration methods for these instruments, including elements of a calibration method, when to validate/revalidate, specifications of a validation plan, specific experiments/data that must be gathered during validation, and documentation of validation
- adjustment methods
- evaluation of performance following adjustments and calibrations, including minimum interval for calibration frequency and a measurement assurance program
- documentation related to calibration, adjustment, and instrument maintenance

This standard establishes the minimum elements to be included in a calibration certificate and the requirements for issuing an amended calibration certificate.

Informative annexes are included that provide examples of method development, a method validation plan, and required calculations.