Accounting for Measurement Uncertainty Sources as the Basis for Developing Test Methods

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This paper analyzes the requirements for analytical weights in a number of interstate standards developed based on international standards for test methods. It is shown that incorrect interpretation of the terms precision, accuracy and sensitivity can lead to the establishment of technically impossible requirements. Based on modeling the uncertainty of density measurements using the apparent mass method, the sufficiency of using weights of high (II) and special (I) accuracy classes is justified, as well as the inexpediency of more stringent requirements.

The purpose of the work is to demonstrate the need for a transition to a system for developing test methods based on a quantitative assessment of sources of uncertainty, which is consistent with the principles of a risk-based approach and contributes to improving the effectiveness and reliability of conformity assessment.

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