

Conformity assessment of a candidate reference material: Risks related to a certified value due to its uncertainty and a mass balance constraint

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A methodology for the Bayesian evaluation of risks of false decisions on conformity of a multicomponent material due to measurement uncertainty was developed recently [1]. In continuation of this development, an IUPAC/CITAC Guide taking into account the mass balance constraint of the data and using Monte Carlo simulations is now under preparation for publication [2]. The Guide could be helpful in different applications in analytical chemistry and metrology. In particular, when a project for development of a reference material (RM) includes specification limits of the characterized properties, i.e., their desired levels by Sec. 6.2 of ISO Guide 35:2017, evaluation of the risks of false decisions on the RM conformity to these limits is possible according to the concepts of the IUPAC/CITAC guidelines. As an example, the results of testing a potassium iodate batch, considered as a candidate reference material of potassium iodate purity, were analyzed and discussed [3]. Different scenarios of the risks related to determination of potassium iodate purity were studied, when the direct or indirect test method is applied, as well as when both are used simultaneously.

References

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