

Original Paper

Measurement of Moisture Content of Some Hydrated Ionic Materials by Oven Drying

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Abstract

Many instruments used for measuring of moisture content in solid materials, such as thermobalances and Karl Fisher titrators, require calibration or verification. The calibration could be performed by using some hydrated ionic compounds [such as lactose monohydrate, sodium tartrate dihydrate (STDH), potassium citrate monohydrate (PCMH), among others], which require the certification in their moisture content value. The moisture content of these compounds could be obtained theoretically, however there are few published papers about the measured values and their uncertainty. The measurement of moisture content of these materials could be performed by the oven drying method. In this work, the measurement process of the moisture content of STDH and PCMH using a forced convection drying oven is described. The obtained results are showing that is possible to reach uncertainties smaller than 0.06 % ($k = 1$) of moisture content for these compounds, whose values are good enough for the calibration and verification of thermobalances and Karl Fisher equipments.

Keywords

Sodium tartrate dihydrate – Potassium citrate monohydrate – Oven drying method – Karl Fisher titrators – Thermobalances – Uncertainty estimation