

Permittivity Measurements Using Open-Ended Sensors and Reference Liquid Calibration an Uncertainty Analysis

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Results of the uncertainty analysis of the error-corrected permittivity measurements of materials using open-ended sensors are reported. Uncertainties in the permittivities of the reference liquids due to the uncertainties in the Cole-Cole parameters are discussed. The effect of the selection of these parameters of reference liquids, when used as calibration standards for error-corrected permittivity measurements, is highlighted. Measurements are performed on 15 and 30 ppt saline and the results are presented along with the measurement uncertainties resulting from uncertainties in Cole-Cole parameters of the reference liquids.

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