Research Article:

UNCERTAINTY OF MEASUREMENT - AN IMPORTANT INSTRUMENT TO EVALUATE THE QUALITY OF RESULTS IN FORMALDEHYDE TESTS

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Abstract:
The measurement uncertainty is a quantitative indicator of the results quality, meaning how well the result represents the value of the quantity being measured. It is a relatively new concept and several guides and regulations were elaborated in order to facilitate laboratories to evaluate it. The uncertainty components are quantified based on data from repeated measurements, previous measurements, knowledge of the equipment and experience of the measurement. Uncertainty estimation involves a rigorous evaluation of possible sources of uncertainty and good knowledge of the measurement procedure. The case study presented in this paper revealed the basic steps in uncertainty calculation for formaldehyde emission from wood-based panels determined by the 1m$^3$ Chamber method. Based on a very well defined Ishikawa Diagram, the expanded uncertainty of 0.044mg/m$^3$ for k=2, at 95% confidence level was established.

Key words: uncertainty of measurement; testing laboratories; formaldehyde emission; quality results.

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