

A Model for the Dissemination of Measurement Traceability for Air Pollution Monitoring in Southern Africa

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Abstract

The gas metrology laboratory of the CSIR National Metrology Laboratory (CSIR NML) recently commercialised its facility for the gravimetric preparation of gaseous reference materials. Currently, the laboratory is providing binary mixtures of CO (carbon monoxide), CO₂ (carbon dioxide) in nitrogen and synthetic air to the gas manufacturers for the certification of traceable calibration gases to be used for ambient air monitoring. The laboratory will also complete the pilot project for the preparation of gaseous reference materials for sulphur dioxide (SO₂) in air during the first part of 2006. Currently, the development of primary standard mixtures of nitric oxide (NO) in nitrogen is underway.

Amongst others, the CSIR NML is involved in the organisation of an intercomparison study with other national metrology institutes (NMIs) to ensure the measurement equivalence of the calibration gases to national and international standards. The study will involve the comparison of binary mixtures of CO in nitrogen and CO₂ in synthetic air at urban and ambient levels, respectively.

During this presentation, an overview will be given of the status of the primary standard mixtures (PSMs) of the CSIR NML in terms of measurement traceability and measurement equivalence. Feedback will be given on the progress with the international laboratory comparisons. The way forward for the establishment of measurement traceability and measurement equivalence for laboratories in the SADC region will also be discussed.