

<b>EUROMET PROJECT</b> <b>FINAL REPORT</b>
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1. Ref. No.:	2. Subject Field: Thermometry	
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4A. Partners: (institutions) BNM-INM, PTB	4B. CEC funded?  No	
5. Participating countries: France (FR), Germany (GE)		
6. Title: Workshop of the WG 3 of the CCT and EUROMET on Uncertainties and CMCs in the field of Thermometry		
7. Progress: <b>Final report of the "Workshop of the WG 3 of the CCT and EUROMET on Uncertainties and CMCs in the field of Thermometry"</b> The Workshop of the WG 3 of the CCT and EUROMET on Uncertainties and CMCs in the field of Thermometry has been jointly organised by PTB and BNM-INM and was held from February 5 to 6, 2001 at PTB, Berlin. The workshop aimed at to review state-of-the-art uncertainties in thermometry and to develop common criteria for quoting uncertainties to be stated in Appendix C of the Mutual Recognition Arrangement (MRA) describing the Calibration and Measurement Capabilities (CMC) of the different institutes. Participants from 29 countries attended the workshop and represented not only EUROMET but also the other regional metrological organisations APMP, COOMET, SADCMET, and SIM. The talks at the workshop covered the evaluation of uncertainty budgets for the calibration of standard platinum resistance thermometers (SPRTs), industrial platinum resistance thermometers, noble metal thermocouples, and liquid-in-glass precision thermometers. For the calibration of SPRTs special contributions discussed the calibration uncertainties at the defining fixed-points including the influence of impurities. As well the uncertainty propagation between fixed points including the influence of non-uniqueness and uncertainty correlation was addressed in several talks. In round table discussions procedures for quoting uncertainties were developed. For the characteristics of SPRTs it was deemed to be necessary to include in the uncertainty budget components taking into account the uncertainty propagation due to non-uniqueness, uncertainty correlation, repeatability of the thermometer, oxidation and reduction of the platinum wire, and drift of the resistance with time. Based on the discussions a summary paper "Uncertainty budgets for characteristics of SPRTs calibrated according to the ITS-90" was prepared which lists the uncertainties in two different categories. Whereas the best category of uncertainty can be obtained only with considerable effort by a small number of leading workers in the field, the normal category can be easily obtained at present in national metrology institutes. Also the papers "Uncertainty budget for calibration of noble metal thermocouples" and "Uncertainty budgets for the calibrations of liquid-in-glass precision thermometers" were revised according to the discussions at the workshop. These papers had been discussed at the EUROMET Meeting of Contact Persons for Thermometry in Budapest and were adopted to be guidelines for the review of uncertainties in the CMC lists by regional metrological organisations.		
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