

Intercomparison of Measurements of the Thermophysical Properties of Polymethyl Methacrylate

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Results are presented of an international intercomparison of measurements of the thermal conductivity, thermal diffusivity, specific heat capacity, and density of polymethyl methacrylate (PMMA) in the temperature range between -80 and 80 °C. The purpose of this comparison is to investigate the variability in results among guarded hot plate (GHP) and guarded heat flow meter (GHF) laboratories on the one hand and among GHP/GHF and other measuring instruments on the other hand. The primary objectives are to characterize the material properties mentioned and to quantify the effects of thermal contact resistances and of temperature measurements. In regard to a future use of PMMA as a reference material reference data for the thermal conductivity are derived.