

Phase Transitions by Dilatometry, Part I: Synthesis, Characterisation and Isotropic to Smectic-A and Smectic-A to Smectic-B Transitions in Two Liquid Crystalline Higher Homologues of N-(*p*-*n*-nonyloxybenzylidene) *p*-*n*-alkylanilines

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Two higher homologues of N(*p*-*n*-nonyloxybenzylidene)*p*-*n*-alkylanilines, viz. the 9O.*m* series with *m* = 12 and 16, are synthesised and characterised by thermal microscopy, differential scanning calorimetry and density studies. The compounds exhibit the phase variants smectic-A, smectic-B and smectic-G. Density studies reveal the first order nature of the isotropic to smectic-A and smectic-A to smectic-B transitions. An estimate of the pressure dependence of the phase transition temperature, using volume and enthalpy data, is presented. A comparison of these results with those reported on *n*O.*m* and other liquid crystalline compounds is presented.

Key words: Phase-transitions in Liquid Crystals; Experimental Determination of Smectic Phases; Mass and Density; Pressure Effects.