

Thermodynamic Measurements on Selected Liquid Crystals at Normal and Elevated Pressures

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Z. Naturforsch. **56 a**, 262–266 (2001); received December 5, 2000

Densities have been determined for two 5-*n*-alkyl-2-(4-isothiocyanatophenyl)-1,3-dioxanes (6DBT, 10DBT), 4-*n*-tetradecyl-4'-cyanobiphenyl (14CB), 4-*n*-octyl-4'-thiocyanatobiphenyl (8BT) and two laterally aryl-branched mesogens 4-cyanobenzyl 5-(4-*n*-octyloxybenzoyloxy)-2-undecyloxybenzoate (4CNOUB), 3-cyanobenzyl 2,5-bis(4-*n*-octyloxybenzoyloxy)benzoate (3CNBOB). The densities have been measured in the isotropic, nematic (only 3CNBOB) and smectic phases with a vibrating tube densimeter. The densities decrease with increasing alkyl chain length within a homologous series. Furthermore the enthalpy changes accompanying the phase transitions have been determined by DSC.

Key words: Specific Volumes; Density; DSC; Liquid Crystals; Thermodynamics.