

# PVT Measurements on 4'-*n*-Hexyl-Biphenyl-4-Carbonitrile (6CB) and 4'-*n*-Heptyl-Biphenyl-4-Carbonitrile (7CB) up to 300 MPa

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*P*,  $V_m$ , *T* data were established for 4'-*n*-hexyl-biphenyl-4-carbonitrile (6CB) and 4'-*n*-heptyl-biphenyl-4-carbonitrile (7CB) between 300 and 370 K up to 300 MPa, and specific volumes were determined for the liquid crystalline, isotropic, and also partly for the crystal phases. Volume and enthalpy changes at the phase transitions are also presented. In the case of 6CB, a new crystal phase has been detected, corresponding to a triple point at 338 K and 196 MPa. The *p*,  $V_m$ , *T* data enabled us to separate the entropy change into a volume-dependent part and configurational part. From the molar volumes along the nematic-isotropic phase transition  $T_{NI}(p)$ , the molecular field parameter  $\gamma = \partial \ln T_{NI} / \partial \ln V_{NI}$  was determined.

*Key words:* 6CB, 7CB, High Pressure, *pVT*, Phase transitions, Thermodynamics.

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