The Physical and Molecular Properties of New Low Melting Nematics with Negative Dielectric Anisotropy

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The paper presents some basic physical properties (static electric permittivities, refraction indices, density and viscosity) of 2-chloro-4-n′-alkylphenyl esters of 4-*n*-alkylbicyclo[2,2,2]octane-1-carboxylic acids ($n'=7$, $n=5$ and 7) which are, at room temperature, nematics with a negative dielectric anisotropy. On the basis of temperature dependence of the principal static permittivities $\varepsilon_{\parallel}(T)$ and $\varepsilon_{\perp}(T)$ of the nematics, using the Maier-Meier equations, the angle between the dipole moment vector and the long axis of mesogenic molecules, the apparent molecular dipole moment square $\mu^2_{\mathrm{app}}(T)$, and the nematic order parameter $S(T)$ were determined.

Key words: Nematics; Dielectric Anisotropy; Density; Viscosity.