

Analysis of the Dielectric Anisotropy of Typical Nematics with the Aid of the Maier-Meier Equations

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Using the experimental data on the dielectric anisotropy, density, polarizability, dipole moment, and order parameter in the nematic phase of seven typical liquid crystalline substances, the applicability of the Maier-Meier theory for the description of the dielectric properties of nematics is checked. Substances with different polarity and different tendency to form associates in the nematic phase were studied. It is found that the Maier-Meier equations describe fairly well the dielectric permittivity components of nematics. The estimated values of the angle β formed by the dipole moment with the long molecular axis are compared with those obtained in other studies.

Key words: Nematic Liquid Crystals; Dielectric Anisotropy; Maier-Meier Equations.