

The bulk rotational viscosity coefficient in a chiral smectic C* liquid crystal

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The method of determination of the bulk values of the rotational viscosity coefficient of the smectic c director in chiral smectic liquid crystals with a helical structure is presented. The measurements were performed using optical detection in the small deformation limit. In contrast to the usual methods, the initial deformation of the helix (caused by strong surface interactions) was avoided by using homeotropic aligned thick samples. The coefficient was measured in 4-methylbutyloxy phenyl-4-octyloxy-benzoate (C8) in the laminar flow limit. The critical temperature dependence of the measured coefficient was observed. The relation between the measured coefficient and the smectic C order parameter is presented.

References

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