CONTENTS

Physical ageing in a thermotropic liquid-crystalline polymer. J. A. H. M. Buijs* and G. J. Vroeget TNO Plastics and Rubber Research Institute, PO Box 6031, 2600JA Delft, The Netherlands (Received 4 January 1993; revised 30 March 1993). The effects of physical ageing on the mechanical properties of a liquid-crystalline copolyester (LCP) were determined.Â In the solid state, thermotropic main-chain liquid-crystalline polymers (LCPs) behave similarly to semi-crystalline flexible polymers in many respects. The main difference is the structural arrangement on a molecular. *To whomcorrespondenceshould be addressed t Present address: Van't Hoff Laboratorium, Universiteit Utrecht, PO Box 80051, 3508TB Utrecht,The Netherlands. An investigation of the flow, mechanical, tribological properties, such as tensile, bending, impact strengths, friction and wear rate was conducted for various blends of three polymers, namely, LCP (liquid crystalline polymer), PAR (polyarylate) and PA (polyamide).The results were summarized as follows;1) The tensile and bending strength of blends of LCP 25/75 PAR (LCP 25%, PAR 75%) was greater than that of neat PAR.2) The frictional coefficient and wear rate of blends of LCP 25/75 PAR and LCP 25/75 PA were smaller than that of neat LCP, neat PAR and neat PA.3) The dependence of frictional spe The structure of thermotropic liquid-crystal polymer fibers varies depending on the raw material polymer and fiber manufacturing conditions but generally is a highly oriented fibrillar structure. With HBA/HNA fiber, macrofibrils having a size of about 5 Î¼m, fibrils having a size of about 0.5 Î¼m and microfibrils having a size of about 0.05 Î¼m, together with a very thin skin layer having a thickness of about 1 Î¼m have been observed.27 Donald et al. observed a banded structure in polarized light, with the striations lying.Â Xiao and Takahashi pointed out that while the arrangement of HBA and HNA in the molecular chain does not change, the a-axis and b-axis X-ray data do change, which suggests that sequences rich in HBA may have aggregated.28 Yang and Krigbaum New liquid crystalline thermosets have been prepared from end-functional monomers and oligomers of varying molecular weight. Both triazine and epoxy networks were explored. Of primary interest was the exploitation of the mesophase properties of these networks for developing polymers with high thermal stability and low coefficients of thermal expansion (CTE). Curing was carried out either within the nematic mesophase or the isotropic phase of the prepolymers. Transition temperatures associated with the mesophase were observed to change after curing under these two sets of conditions.Â Lee, Jun Yeob and Jang, Jyongsik 2006. The effect of mesogenic length on the curing behavior and properties of liquid crystalline epoxy resins. Polymer, Vol. 47, Issue. 9, p. 3036. Time resolved X-ray diffraction from thermotropic liquid crystalline (LC) materials has been studied in conjunction with standard LC characterization techniques to investigate phase transitions and alignment due to applied electric fields. A more detailed understanding of the kinetics of the interaction between LC systems and applied fields is being sought. Both the effect of electric fields on the inter-molecular structure and the orientation parameter have been evaluated as a function of temperature for LC model compounds. These results are compared to observations of these mesogens in appli