

Preparation and Properties of Thermotropic  
Liquid Crystalline Polymers

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Two series of thermotropic liquid crystalline copolyesters based on hydroxybenzoic acid (HBA), hydroquinone (HQ), and poly (ethylene terephthalate) (PET) units were prepared by melt polymerization.

The effects of dissymmetrical units and chemical structures on the properties of the copolyester were examined. The dissymmetrical units employed includes 5-tert-butyl-1,3-benzenedicarboxylic acid (5-t BIA), and 1,1, 3-trimethyl-3-phenylindan-4',5-dicarboxylic acid (PIDA). All of these polymers exhibited turbid melts. The flexible PET units lower the transition temperature. The glass transition and heat deflection temperatures apparently increased with increasing 5-t BIA and PIDA content in the main chain of copolyesters. The copolyesters containing the dissymmetrical units were found to have good thermal properties.