

Synthesis of Thermotropic Liquid
Crystalline Polyester and Blending
with Low Molecular Weight Mesogen

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Liquid crystalline polyesters based on aromatic triad mesogenic unit and flexible polymethylene spacer containing four to eight methylene units were prepared by melt polycondensation method. Liquid crystalline behavior of the resulting polyesters and the phase behavior for this polyester-low molecular weight nematogen mixtures were observed by DSC and hot stage polarized light microscopy techniques.

Most of the polyesters exhibited nematic texture on melting. The melting temperatures and the transition temperatures from mesophase to isotropic phase were decreased in a zig-zag manner with the number of the polymethylene spacer coinciding with even-odd effects. The temperature ranges over which the mesophase formation and the biphasic region occurred were generally broad. The nematic-isotropic transition curve in polyester-low molecular weight nematogen mixture was nearly linear but the solid-nematic transition curve showed a eutectic melting point in the vicinity of the polyester content of 80wt%.