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Interfacial synthesis and properties of l-lysine-derived optically active poly(ester-imide)s

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Abstract

l-Lysine hydrochloride was transformed to ethyl l-lysine dihydrochloride. This salt was reacted with trimellitic anhydride to yield the corresponding diacid (**1**). Interfacial polycondensation results novel poly(ester-imide)s (PEI_{a-i}). These polymers have inherent viscosities in the range of 0.23–0.47 dl g⁻¹, display optical activity, and are readily soluble in polar aprotic solvents. They start to decompose (*T*_{10%}) above 350 °C and display glass-transition temperatures at 100.42–172.81 °C. All of the above polymers were fully characterized by UV, FT-IR and ¹H NMR spectroscopy, elemental analysis, TGA, DSC, inherent viscosity measurement and specific rotation.

Keywords

Chiral; Optically active; l-Lysine; Poly(ester-imide); Interfacial polymerization