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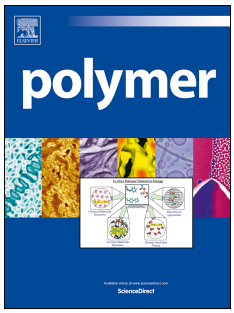

Effect of chain architecture of polyol with secondary hydroxyl group on aggregation structure and mechanical properties of polyurethane elastomer

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GRAPHICAL ABSTRACT

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An Effect of Chain Architecture of Polyol with Secondary Hydroxyl Groups on Aggregation Structure and Mechanical Properties of Polyurethane Elastomer

Polyurethane elastomers (PUEs) using poly(2-ethyl-1,3-hexamethylene adipate) glycol (PEHA) bearing secondary hydroxyl group and poly(2,4-diethyl-1,5-pentamethylene adipate) glycol (PDEPA) and poly(2-butyl-2-ethyl-1,3-trimethylene adipate) glycol (PBETA) with only primary hydroxyl groups were synthesized by a prepolymer method. Aggregation structure and mechanical properties of these PUEs were investigated. Incorporation of secondary hydroxyl groups tended to decrease the cross-linking density and the degree of microphase separation, and the resulting PUE with low Young's moduus.