

Viscoelastic Properties of Biodegradable Polymer Blends of Poly(Butylene-Adipate-*co*-Terephthalate) with Thermoplastic Starch

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Abstract. Dynamic-mechanical thermal analysis (DMTA) was used to characterize viscoelastic behaviour of two sets of biodegradable polymer blends consisting of synthetic aromatic-aliphatic co-polyester poly(butylene-adipate-co-terephthalate) (PBAT) and thermoplastic corn starch (TPS) with weight ratios 70:30, 50:50 and 30:70. The first set of blends was prepared by extrusion, the second one underwent additional mixing in Brabender mixer. DMTA thermograms revealed that additional mixing led to lower molecular mobility in TPS domains. Storage for 6 months of both studied sets led only to small changes in measured loss factor temperature dependences for blends with lower TPS content. More pronounced changes were observed for samples with higher TPS content, mainly in their TPS domains indicating decrease in starch chains mobility.