

Viscoelastic Properties of Poly[(butylene succinate)-co-adipate] Nanocomposites

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Abstract

This article reports the viscoelastic properties of poly[(butylene succinate)-co-adipate] (PBSA) nanocomposites. The nanocomposites of PBSA with various loadings of organically modified clay were prepared by melt-mixing in a batch-mixer. The solid and melt-state viscoelastic properties of neat PBSA and various nanocomposites were studied in detail. The dynamic mechanical studies demonstrated an increase in the storage modulus of PBSA matrix with organoclay loading. Melt-state rheological properties were found to be modified with organoclay loading changing from liquid-like, to gel-like and then viscoelastic solid-like. Such changes in viscoelastic properties along with the improvements in thermomechanical properties are expected to open opportunities for the use of PBSA extending its applications from the classical field of packaging to new niches such as tissue-engineering.