

Morphology and Thermal Properties of Compatibilized PA12/PP Blends with Boehmite Alumina Nanofiller Inclusions

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Keywords:

- boehmite alumina;
- morphology and properties;
- polyamide 12;
- polymer blends;
- poly(propylene)

Abstract

Boehmite alumina nanoparticles are added to PP-*g*-MAH-compatibilized blends of PA 12 and PP to study the effects of nanoparticle loading in the resulting composites. WAXD and SEM data suggest that the nanoparticles enhanced the coalescence of PP. DSC, DMA, and TGA reveal that the final properties such as crystallization temperature, flexural storage modulus, thermal degradation temperature, etc., improve with increasing nanoparticle loading for blend-based composites. FTIR results show that the nanoparticles interfere with the interfacial activity at 5 wt% nanoparticle loading. All results are compared between the neat polymers and the compatibilized blend and show that despite a slight increase in dispersed-phase domain size, all other properties improve with the addition of AlO(OH).

<http://onlinelibrary.wiley.com/doi/10.1002/mame.201100254/abstract>