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Article

Functionalization in solution of polypropylene with a maleinized hyperbranched polyol polyester: Structural, thermal, rheological, and mechanical properties

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Abstract

The functionalization of polypropylene (PP) with a maleinized hyperbranched polyester polyol (MHBP) was performed in solution to obtain PP-*g*-MHBPs. The degree of functionalization (FD) increased with MHBP and dicumyl peroxide (DCP) contents, but the contact angle followed an opposite behavior. The sample obtained with the proportion of 9.0 wt % MHBP and 2.0 wt % DCP and presented the highest FD value. An FD value of 2.4 wt %, produced a reduction of 19° on the contact angle. It was observed by differential scanning calorimetry (DSC) that the PP-*g*-MHBPs obtained by employing 3.0 wt % of MHBP, exhibited a slight reduction of the melting temperature (T_m) with the increase in the amounts of FD and DCP. Some FD values obtained in this study are higher than those obtained both commercial and noncommercial grades of PP functionalized with maleic anhydride. © 2018 Wiley Periodicals, Inc. J. Appl. Polym. Sci. **2019**, *136*, 46932.