

Abstract Submitted
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Tribological and thermal properties of blends of melamine-formaldehyde resins with low density polyethylene¹ BERNARD HUANG, WITOLD BROSTOW, TEA DATASHVILI, University of North Texas — Melamine + formaldehyde resin (MFR) was synthesized and blended with a low density polyethylene (LDPE). Tribological, thermal and morphological properties of LDPE + MFR blends containing 1, 5, 10, 20, 25 wt. % MFR were investigated. After preparing the blends with a Brabender preparation station and a compression molding machine, the following properties were determined: wear rate and friction, sliding wear and microhardness. Thermal properties had been analyzed by differential scanning calorimetry (DSC) and thermogravimetric analysis (TGA). A detailed study on the miscibility behaviour of the blends has been made by using Fourier transform infrared spectroscopy (FTIR), environmental scanning electron microscopy (ESEM) and atomic force microscopy (AFM). The morphological observations are correlated with the properties. Thermal analysis, AFM and ESEM support the presence of a partial compatibilization.

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