

Investigation of Mechanical and Rheological Properties of Poly (trimethylene terephthalate) (PTT)/Polyethylene Blend Using Carboxylate and Ionomer as Compatibilizers

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Abstract : Poly (trimethylene terephthalate) (PTT) is a linear aromatic polyester with good strength and stiffness, good surface appearance, low shrinkage and war page, and good dimensional stability. However, it has low impact strength which is a problem in automotive application. Thus, modification of PTT with the other polymer or polymer blending is a one way to develop a new material with excellence properties. In this study, PTT/High Density Polyethylene (HDPE) blends and PTT/Linear Low Density Polyethylene (LLDPE) blends with and without compatibilizers base on maleic anhydride grafted HDPE (MAH-g-HDPE) and ethylene-methacrylic acid neutralized sodium metal (Na-EMAA) were prepared by a twin-screw extruder. The blended samples with different ratios of polymers and compatibilizers were characterized on mechanical and rheological properties. Moreover, the phase morphology and dispersion size were studied by using SEM to give better understanding of the compatibility of the blends.

Keywords : poly trimethylene terephthalate, polyethylene, compatibilizer, polymer blend

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