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Morphology and Properties of Sorona® Based Blends*I. Aravind (a), J.V. Kurian (b), S. Thomas (a)**(a) School of chemical sciences, Mahatma Gandhi University, Priyadarshini Hills P.O.,
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The morphology of immiscible and highly incompatible blends of Sorona® [poly (trimethylene terephthalate)] and EPDM blends has been studied with and without the addition of a compatibilizer precursor EPM-g-MA. These incompatible blends are characterized by a two-phase morphology, narrow interphase, and poor physical and chemical interactions across the phase boundaries. Therefore a reactive route was employed to compatibilize these blends by the addition of maleic anhydride grafted ethylene propylene rubber (EPM-g-MA). The morphology of compatibilised and uncompatibilised blends was examined by scanning electron microscopy (SEM). It was found that the addition of EPM-g-MA reduces the domain size of the dispersed phase followed by a leveling off at higher concentrations of the compatibilizer. The experimental compatibilization results were compared with theoretical predictions. Free volume measurements using positron annihilation lifetime spectroscopy (PALS) were done to analyze the interaction of blends.