

Study on the compatibilizing effect of PP-g-MAH and SEBS-g-MAH at the TPO/PLA blends

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The effects of compatibilizers on the mechanical, morphological and rheological properties of the TPO/PLA (80/20, wt%) blends have been studied. The compatibilizers used were polypropylene-g-maleic anhydride (PP-g-MAH) and styrene-ethylene-butylene-styrene-g-maleic anhydride (SEBS-g-MAH) copolymers. From the results of tensile strength of the TPO/PLA (80/20) blends with the PP-g-MAH, the tensile strength of the blends increased when the PP-g-MAH content is up to 4 phr, and the impact strength of the blends increased with the SEBS-g-MAH content. From the results of tensile and impact strengths of the TPO/PLA (80/20) blends, it is suggested that the PP-g-MAH acts as an effective compatibilizer to increase the tensile strength of the blends, while the SEBS-g-MAH is an effective impact modifier to increase the impact strength of the TPO/PLA (80/20) blends. Also, the mixed compatibilizers of the PP-g-MAH (5 phr) and SEBS-g-MAH (5 phr) are effective to increase the impact strength of the TPO/PLA (80/20) blends without losing the tensile strength of the blends, and this result is consistent with the results of morphological and rheological properties of the TPO/PLA (80/20) blends.