

## **Properties of recycled high density polyethylene/recycled polypropylene blends : Effect of maleic anhydride polypropylene**

### **Abstract**

Polymer blending provides an efficient way to develop new materials with improved properties while preserve the primary properties of the materials at lower cost. The blends recycled high density polyethylene (rHDPE) and recycled polypropylene (rPP) with and without maleic anhydride polypropylene (MAPP) have been investigated. The effect of different blend ratios on tensile properties, morphology and melt flow index were studied. The tensile strength and modulus of elasticity of both blends increased with increased of rPP in the blend ratios but the elongation at break decreased. It was found that the tensile strength and modulus of elasticity of compatibilized rHDPE/rPP blends higher than uncompatibilized blends. The SEM micrograph of tensile fractured surface of compatibilized blends showed better interfacial adhesion and interaction between rHDPE and rPP. The melt flow index of compatibilized blends showed better flowability than uncompatibilized blends.

**Keywords;** Blend, Compatibilizer, Recycled High Density Polyethylene, Recycled Polypropylene