

عنوان مقاله:

Study on the Mechano-Optical Behavior of LDPE/Ethylene Vinyl Acetate/Nanoclay Nanocomposites for Film Packaging Applications

محل انتشار:

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خلاصه مقاله:

In this work, optical and mechanical properties of low density polyethylene (LDPE)/Ethylene vinyl acetate (EVA)/Organoclay nanocomposite blown films were investigated. A special grade LDPE including anti block, slip agent and antioxidant additives was used. These additives could help to have optimized optical properties such as good haze and micro-gloss. The presence of silicate organoclay increased the mechanical properties of the PE nanocomposites but reduced their clarity. To eliminate this optical defect, blending EVA with LDPE base nanocomposite was carried out. Morphological studies (Such as SEM, TEM and XRD), mechanical properties (such as tensile properties and tear resistance) as well as differential scanning calorimetry (DSC) experiment were investigated in this work. The results indicated that the mechanical properties of the LDPE/EVA blend samples enhance with addition of clay and increase its content. DCS result also showed that in the presence of clay particles, degree of crystallinity increased and led to reduction in haze percent. Our goal is to prepare LDPE/EVA nanocomposite films with lower haze and higher gloss features which have acceptable mechanical properties for packaging applications

کلمات کلیدی:

Low density polyethylene, Nanocomposite, Montmorillonite, Blown film, Exfoliation

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