Correlation Between Composites Behavior and the Manufacturing Process Used

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Keywords. polyvinyl chloride, alfa fiber, processing, thermal behavior

Abstract.
In this work, alfa fiber reinforced polyvinyl chloride de (PVC) composites treated with PVC-g-MA (5%), used as a compatibilizer, were prepared using three processing techniques: calendering, Brabender, and injection molding. The morphology, the tensile properties, and thermal stability of PVC/alfa composites with and without compatibilizer obtained through these three processes were compared. The dispersion of alfa fiber was better in the injection-molded simples; tensile strength was also higher for the injection-molded samples. Young modulus of composites prepared with injection molding was important compared with those obtained with roll mill and Brabender process. The results showed, to a great extent, that the injection molding process was more effective for the manufacturing of PVC/alfa composites than a two-roll mill and Brabender processes especially with compatibilizer agent.