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Mechanical Properties of Recycled Plasticized PVB/PVC Blends

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Abstract : The mechanical properties of blends consisting of plasticized poly(vinyl butyral) (PVB) and plasticized poly(vinyl chloride) (PVC) are studied, in order to evaluate the possibility of using recycled PVB waste derived from windshields. PVC was plasticized with 38% of diisononyl phthalate (DINP), while PVB was plasticized with 28% of triethylene glycol, bis(2-ethylhexanoate) (3GO). The optimal process conditions for the PVB/PVC blend in 1:1 ratio were determined. Entropy was used in order to theoretically predict the blends miscibility. The PVB content of each blend composition used was ranging from zero to 100%. Tensile strength and strain were tested. In addition, a comparison between recycled and original PVB, used as constituents of the blend, was performed.

Keywords : poly(vinyl butyral), poly(vinyl chloride), windshield, polymer waste, mechanical properties
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