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## **Effect of Elastomer Type on Mechanical and Morphological Properties of PET Based Ternary Composites**

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Effect of elastomer type in ternary composites consisting of recycled poly(ethylene terephthalate) (PET), short glass fiber (SGF) and thermoplastic elastomer have been studied. In these composites, recycled PET forms the matrix, elastomer acts as the toughener and SGF acts as the reinforcing component. In this study, at a selected composition of 20 % elastomer – 20 % glass fiber – 60 % recycled PET, effect of elastomer type was examined by using following elastomers: Lotader AX8900, which is a terpolymer of ethylene, acrylic ester and glycidyl methacrylate; Lotader AX8840, which is a copolymer of ethylene and glycidyl methacrylate; Elvaloy PTW, which is an ethylene terpolymer containing epoxy functionality; Elvaloy 1224 AC, which is a copolymer of ethylene and methyl acrylate and Lotryl 28 MA 07 which is a random copolymer of ethylene and an ester type acrylic derivative. The ternary composites were prepared using a co-rotating twin screw extruder by keeping extrusion process parameters constant. Tensile properties and impact strength values of the composites were evaluated. The highest tensile strength value was obtained for the composite including Elvaloy 1224 AC elastomer. The composites of PET/SGF/Elvaloy PTW elastomer had the highest impact strength value among the other composites studied. Morphologies of the composites were examined by using SEM (scanning electron microscope). It was observed that the composites having high impact strength values exhibited better fiber matrix adhesion.