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TOUGHENING MODIFICATION OF PC/PET ALLOYS BY EMA

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Polycarbonate/poly(ethylene terephthalate) alloys (PC/PET Alloys) were expected to present an excellent balance of the properties of virgin PC and PET which provide impact resistance, toughness, and chemical resistance. Generally, PC/PET alloys were immiscible or partially miscible that caused in poor mechanical coupling between phases, resulting in low properties. Therefore, in order to improve the properties of alloys, ethylene-methylacelate (EMA) was used as a compatibilizer. The interfacial adhesion between PC and PET in the presence of EMA was good due to the interaction of functional group proportion in the molecular chain. All components were processed in a twin-screw extruder by controlled temperature and screw speed. The mechanical properties of the PC/PET/EMA alloys showed that the addition of EMA increased 537% notched-impact strength. In addition, the morphology and physical properties of alloys were presented in this report.