

A novel phosphorus polyester frame retardant system for polycarbonate

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Although polycarbonate has been widely used in many technical applications, there exist many potential applications for which an enhancement of PC properties is necessary such as more stringent flame retardant performance. It is essential that new flame retardant systems should be developed to meet the constantly changing demand of new regulations, standards and test methods. In this study, we used a novel phosphorus polyester frame retardant(PET-FR) for polycarbonate at loadings between 5% and 30% by large scale extruder. To compare existing phosphate frame retardant system, we prepared a control group containing widely used phosphate frame retardant, PX-200 (Daihachi). The flame retardancy and mechanical characteristics of those compounds, depended on the flame retardant contents were investigated with vertical burning test (UL-94) and mechanical test. When 10 wt% PET-FR was added into the PC, the UL-94 rating reached V-0 whereas others do not.