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**New application for aromatic Schiff base: high efficient flame-retardant and anti-dripping action for polyesters**

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**ABSTRACT**

Bonding aryl groups with carbon-nitrogen double bond is a critical structural factor for the self-crosslinking of Schiff bases at high temperature. In this study, a novel aromatic Schiff base “5-(benzylidene-amino)-isophthalic acid dimethyl ester (BA)” has been designed as a self-crosslinking monomer for poly(ethylene terephthalate) (PET) based copolyesters (BA<sub>n</sub>PETs). The cross-linking behaviors, flame retardancy and non-dripping performance of BA<sub>n</sub>PETs have been investigated by simultaneous thermal analysis (TG-DSC), dynamic rheology, limiting oxygen index (LOI), UL-94 vertical burning and cone calorimetry tests. It is found that BA units can cross-link during combustion resulting in high melting viscosity and enhance char forming for BA<sub>n</sub>PETs, which endows the copolyesters with excellent flame retardancy and non-dripping behavior. Incorporating of BA with a low content (only 7.7 mol%), the

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