Monoesterification of styrene-maleic anhydride copolymers with aliphatic alcohols

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Maleic anhydride - styrène copolymers were synthesized in acetone-toluene solution at 60° C by azo-bisisobutironitrile.The copolymers were characterized by Gel Permeation Chromatography and Differential Scanning Calorimetry.The monoesterification of the maleic anhydride-styrène copolymers was carried out with methyl, n-propyl, n-butyl, n-hexyl, noctyl and n-decyl alcohol in tetrahydrofuran solution at 65°C catalyzed by 4dimethylaminopyridine.The esterification degree of the copolymers has been determined by FT-IR and ranged between 68-85%. An increasing reaction rate was observed with increasing alcohol chain length. The glass transition temperature of the monoesterified copolymers were also determined and ranged from 136-242°C for n-decanol and methanol copolymer respectively.