Light Fastness of Cationic Dyes on Polypropylene-Film Containing Sodium Alkyl Benzene Sulfonate

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The relative effectiveness of four kinds of commercially available stabilizers on the photooxidation of polypropylene(PP) containing alkyl benzene sulfonic acid salt and the light fastness of dyes on this polymer were investigated.

PP was capable of level dyeing with cationic dyes through ionic bond formation. The photooxidation rate of PP containing 8% sodium octyl benzene sulfonate (PP-SOBS) was lower than that of PP containing 8% sodium dodecyl benzene sulfonate (PP-SDBS). Suppressive effect of the stabilizers added in PP-SOBS on the photooxidation was in the order of Chimassorb 944 > Tinuv P > control > 1076+ > DSTDP > Irganox 1076 and in the case of PP-SDBS it was in the order of Chimassorb 944> 1076+ > Irganox 1076 > Tinuv P> control> DSTDP.

The photodegradation of red and yellow dyes on PP-SOBS and PP-SDBS was lower than that of blue dyes on the polymer and the light fastness of the former dyes was improved in the presence of stablizers.