

Название публикации:

Chemiluminescence and reactivity of the composites based on blends of polypropylene and polyamide

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Аннотация:

The effect of the composition of blends based on isotactic polypropylene (PP) and aliphatic polyamide 6/66-4 (PA) on the rate of photo-oxidation of their mixtures in air at room temperature has been studied. The decay of photoinduced chemiluminescence was studied to determine the kinetics of peroxy radical termination in composites and the rate constants of this process depending on the composition of the mixtures. In the presence of PA, the rate of photo-oxidation of mixtures is much higher than the rates of photo-oxidation of separately taken components, PP and PA. Thus, the kinetics of photo-oxidation of mixtures differs from the simple sum of photo-oxidation kinetics of PP and PA, which should be expected in the absence of chemical and physical interaction of the components of the mixture. A decrease in the rate constants due to PA additives indicates a decrease in the mobility of molecules in the composites and explains the observed increase in photo-oxidation of mixtures.

Ключевые слова:

Chemiluminescence, Kinetics, Mixtures, Oxidation, Polypropylenes, Aliphatic polyamides, Isotactic polypropylene, Peroxy radical, Photo-induced, Physical interactions, Rate constants