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DEGRADATION OF POLYMER BLENDS: A BRIEF REVIEW

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ABSTRACT

The usefulness of any material, including polymer blends, depends on its degradability and durability. The blend composition can significantly affect the degradative behavior of a polymer blend and can differ from the degradation routes of the pure components since the interactions among different species in the blends during degradation, and among the degradation products, can occur. These reactions can lead either to an acceleration of the degradation rate or to a stabilizing effect in comparison with the pure components. Thus, the additive rule cannot be often applied in case of degradation of polymer blends and, therefore, it is difficult to predict the degradative behavior of a polymer blend on the base of the properties of pure components.

This review aims to report the status of the research on degradation of polymer blends focusing on thermal, thermomechanical and photo-oxidative degradation.

Keywords: polymer blends; compatibilization; thermal degradation; photooxidation.

1. INTRODUCTION

The history of polymer blends is quite long and strictly correlated with that of polymers themselves. Indeed, blending two or more polymers may give rise to new polymeric systems with new, interesting and "*ad hoc*" properties, different from those of the two components, thus eliminating the long and expensive route of synthesizing new polymers [1–9]. Nevertheless, an important shortcoming in blending different polymers is that the polymers often form immiscible and incompatible blends, displaying a coarse morphology with