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Degradable Plastics For Vehicles Such As Cars

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Abstract

A plastic may degrade in response to a trigger. The kinetics of degradation have long been characterized by the rate of weight loss, which is a function of time. In this review, we summarize biomarkers for evaluating plastic degradation heterogeneously. Here, we study heterogeneous degradation in terms of the spatial distribution of the degraded products, the action of chemicals and mechanics, the applied load upon the crack, exposure the crack front to chemical attack, and stresses that are concentrated at the crack tip. We also review the effects of additives and PLA, a polymer in which additives are used to hydrolyze. We will a crack in PLA film using stresses, now a crack in a polymer film can be hydrolyzed in a few days in contrast to years through a microscopic crack in a metal or ceramic. The crack propagation is accelerated by load but not sensitive to humidity and temperature. We also review the effects of additives and plastics for hydrolysis and sustainability.

Keywords

Degradation; Plastics; Hydrolysis; pH; Cracking

1. Introduction

Degradable plastics were developed soon after the rise of the plastics industry with applications including packaging [1], agriculture [2], and medicine [3], [4]. They are used in varied plastic products by manufacturing processes, including injection molding, extrusion, and blow molding. Degradation is a non-linear single polymer chains or small molecules in response to attack by water, light, or microbes. Degradation is a non-linear process [5], [6], [7], [8], [9], [10], [11], [12], [13], [14], [15], [16], [17], [18], [19], [20], [21], [22], [23], [24], [25], [26], [27], [28], [29], [30], [31], [32], [33], [34], [35], [36], [37], [38], [39], [40], [41], [42], [43], [44],

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