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TNI	**Biodegradovateľné plasty** **Stav normalizácie a nové perspektívy**	**TNI** **CEN/TR 17910** 64 8011

Biodegradable plastics - Status of standardization and new prospects

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Biodegradable plastics - Status of standardization and new prospects

Plastiques biodégradables - État de la normalisation et nouvelles perspectives

Bioabbaubare Kunststoffe - Stand der Normung und neue Perspektiven

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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European foreword

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Introduction

Biodegradable plastics have been developed starting from late 80s of the last century in parallel with the development of methodologies for the characterization of degradation (including biodegradation, disintegration, detection of potential ecotoxic by-products produced during biodegradation) of solid materials. The industry developed together with standardization and certification bodies a reliable governing framework needed to develop the market. After 30 years, a wide range of biodegradable products are commercially available. Standard test methods and specifications are available enabling the characterization and certification of those products.

There is an increasing interest to find out more information on the nature of biodegradable plastics and their fundamental characteristics that was fulfilled by going to the source, i.e. by directly examining the technical standards. The analysis of standards by persons who are not experts in the science of biodegradation or standardization and therefore unaware of the underlying reasons for some test schemes, has led to the direct application of such schemes in the context of communications, creating paradoxical situations. Several criticisms did surface based on the erroneous interpretation of the testing schemes. For example, many were puzzled by the 90 % mineralization pass level (rather than 100 % i.e. “complete”) required by the standard specifications to show biodegradability, ignoring that biodegradation involves biomass formation, a very basic knowledge in biochemistry and microbiology. This commingling between technical requirements and media communication created a great deal of confusion among the public and put the Industry, Standardization, and Certification under increased pressure.

CEN experts acknowledge the communication issues and therefore created the underlying document that summarizes the state of standardization and enters into the merits of the individual tests to explain the reasons for some technical solutions and the criteria adopted. This exercise also becomes a preliminary step to highlight potential gaps, the need for updating some standards, or new frontiers to be explored to complete the characterization of biodegradable plastic materials.

1 Scope

This document summarizes the state of standardization in the field of biodegradable plastics and plastics products at CEN and ISO level. It explains the underlying scientific principles of biodegradation that provide the foundations for relevant test methods and enters into the merits of the individual tests to explain and clarify the reasons for the adoption of specific solutions and criteria.

This document primarily focusses on standards adopted by CEN covering environmental biodegradation testing and relevant specifications. It also includes information on disintegration and eco-toxicity tests. A full list of the international standards considered in this document is provided in Annex A.

In a second part, this document highlights areas where standardization in this field is currently lacking and where future developments may be anticipated and useful.

2 Normative references

There are no normative references in this document.