

Plastics — Evaluation of compostability — Test scheme and specifications

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National foreword

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A list of organizations represented on PRI/82 can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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Prüfschema und Spezifikationen

This European Standard was approved by CEN on 9 November 2006.

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Foreword

This document (EN 14995:2006) has been prepared by Technical Committee CEN/TC 249 "Plastics", the secretariat of which is held by IBN/BIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by June 2007, and conflicting national standards shall be withdrawn at the latest by June 2007.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

Introduction

This European Standard defines the requirements for plastic materials to be considered organically recoverable. It provides a framework which can be used to support claims of compostability of plastics. The approach of this European Standard is comparable to that of EN 13432 which defines the requirements for packaging materials.

Organic recovery of used plastic materials is one of several recovery options within the overall life cycle of plastic materials.

This European Standard presents a framework for assessment to determine whether the requirements of this European Standard have been met. Its approach is similar to that of systems standards such as the EN ISO 9000 and EN ISO 14000 series.

1 Scope

This European Standard specifies requirements and procedures to determine the compostability or anaerobic treatability of plastic materials by addressing four characteristics:

- I) biodegradability,
- II) disintegration during biological treatment,
- III) effect on the biological treatment process and
- IV) effect on the quality of the resulting compost.

NOTE For packaging EN 13432 applies.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN ISO 14851, *Determination of the ultimate aerobic biodegradability of plastic materials in an aqueous medium - Method by measuring the oxygen demand in a closed respirometer (ISO 14851:1999)*

EN ISO 14852, *Determination of the ultimate aerobic biodegradability of plastic materials in an aqueous medium — Method by analysis of evolved carbon dioxide (ISO 14852:1999)*

EN ISO 14855, *Determination of the ultimate aerobic biodegradability and disintegration of plastic materials under controlled composting conditions — Method by analysis of evolved carbon dioxide (ISO 14855:1999)*

ISO 16929, *Plastics — Determination of the degree of disintegration of plastic materials under defined composting conditions in a pilot-scale test*

OECD Guidelines for Testing of Chemicals 208: *Terrestrial Plants, Growth Test; Organisation for Economic Co-operation and Development, 2 rue André Pascal, F - 75775 Paris*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1

constituent of a plastic material

every pure chemical material or substance of which a plastic material is composed

3.2

disintegration

physical falling apart into very small fragments of a plastic material

3.3

ultimate biodegradation

breakdown of an organic chemical compound by microorganisms in the presence of oxygen to carbon dioxide, water and mineral salts or any other elements present (mineralization) and new biomass or in the absence of oxygen to carbon dioxide, methane, mineral salts and new biomass

3.4

total dry solids

amount of solids obtained by taking a known amount of plastic material or compost and drying at about 105 °C to constant weight

3.5

volatile solids

amount of solids obtained by subtracting the residues of a known amount of plastic material or compost after incineration at about 550 °C from the total dry solids content of the same sample. The volatile solids content is an indication of the amount of organic matter

4 Requirements

4.1 Control of constituents

Constituents known to be, or expected to become, harmful to the environment during the biological treatment process (see Clause 8), in excess of the limits given in A.1, shall not be deliberately introduced into plastic materials intended to be designated as suitable for organic recovery.

4.2 Assessment

4.2.1 General

Except as identified in 4.3, assessment of the biological treatability of plastic materials shall include the following 5 assessment procedures as a minimum:

- characterization (4.2.2);
- biodegradability (4.2.3);
- disintegration including effects on the biological treatment process (4.2.4);
- compost quality (4.2.5);
- recognizability (4.2.6).