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Plastics — Determination of the degree of disintegration of plastic materials under composting conditions in a laboratory-scale test

Plastiques — Détermination du degré de désintégration de matériaux plastiques dans des conditions de compostage lors d'un essai de laboratoire

Reference number
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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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This document was prepared by Technical Committee ISO/TC 61, *Plastics*, Subcommittee SC 14, *Environmental aspects,* in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 249, *Plastics,* in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This third edition cancels and replaces the second edition (ISO 20200:2015), which has been technically revised.

The main changes are as follows:

— the Clause 3 “Terms and definitions” has been updated;

— a new incubation mode (type 2) has been added, based on two stages (see Clause 4 and 7.3);

— the dimensions of the samples has been modified (see 7.1).

Any feedback or questions on this document should be directed to the user’s national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

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Introduction

The test method described in this document determines the degree of disintegration of plastic materials when exposed to a composting environment. The method does not require special bioreactors, and is scaled for use in any general-purpose laboratory. It requires the use of a standard and homogeneous synthetic solid waste. The synthetic waste components are dry, clean, safe products, which can be stored in the laboratory without any odour or health problems. The synthetic waste is of constant composition and devoid of any undesired plastic material which could be erroneously identified as test material at the end of testing, altering the final evaluation. The bioreactors are small, as is the amount of synthetic waste to be composted (approximately 3 l). With the limited amount of test material, this method provides a simplified test procedure.

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Plastics — Determination of the degree of disintegration of plastic materials under composting conditions in a laboratory-scale test

1 Scope

This document specifies a method of determining the degree of disintegration of plastic materials when exposed to a laboratory-scale composting environment. The method is not applicable to the determination of the biodegradability of plastic materials under composting conditions. Further testing is necessary to be able to claim compostability.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

ISO 3310-1, *Test sieves — Technical requirements and testing — Part 1: Test sieves of metal wire cloth*

3 Terms and definitions

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

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1
compost
organic soil conditioner obtained by biodegradation of a mixture consisting principally of vegetable, fruit and garden residues, occasionally with other organic material and having a limited mineral content

[SOURCE: ISO 14855-2:2018, 3.1, modified — “fruit and garden” was added.]

3.2
compostability
potential of a material to be biodegraded and disintegrated in a defined and controlled *composting* (3.3) process without leaving visible and toxic residues

Note 1 to entry: ISO 17088 or another suitable standard are used to prove compostability.

3.3
composting
aerobic process designed to produce *compost* (3.1)

3.4
laboratory scale composting
aerobic process designed to produce *compost* (3.1) at laboratory scale under environmental conditions simulating those experienced in an industrial compost pile

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