Irish Standard
I.S. EN ISO 16929:2021

Plastics - Determination of the degree of disintegration of plastic materials under defined composting conditions in a pilot-scale test (ISO 16929:2021)

I.S. EN ISO 16929:2021

Incorporating amendments/corrigenda/National Annexes issued since publication:

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National Foreword

I.S. EN ISO 16929:2021 is the adopted Irish version of the European Document EN ISO 16929:2021, Plastics - Determination of the degree of disintegration of plastic materials under defined composting conditions in a pilot-scale test (ISO 16929:2021)

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 16929

March 2021

ICS 83.080.01

Supersedes EN ISO 16929:2019

English Version

Plastics - Determination of the degree of disintegration of plastic materials under defined composting conditions in a pilot-scale test (ISO 16929:2021)

Plastiques - Détermination du degré de désintégration des matériaux plastiques dans des conditions de compostage définies lors d'un essai à échelle pilote (ISO 16929:2021)

Kunststoffe - Bestimmung des Zersetzungsgrades von Kunststoffmaterialien unter festgelegten Bedingungen der Kompostierung mittels einer Technikumsmaßstab-Prüfung (ISO 16929:2021)

This European Standard was approved by CEN on 13 March 2021.

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COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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European foreword

This document (EN ISO 16929:2021) has been prepared by Technical Committee ISO/TC 61 "Plastics" in collaboration with Technical Committee CEN/TC 249 “Plastics” the secretariat of which is held by NBN.

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of an identical text or by endorsement, at the latest by September 2021, and conflicting national standards shall be withdrawn at the latest by September 2021.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN ISO 16929:2019.

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The text of ISO 16929:2021 has been approved by CEN as EN ISO 16929:2021 without any modification.

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I.S. EN ISO 16929:2021

INTERNATIONAL STANDARD

ISO 16929

Fourth edition
2021-03

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

Plastiques — Détermination du degré de désintégration des matériaux plastiques dans des conditions de compostage définies lors d'un essai à échelle pilote

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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 documents 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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Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

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 fourth edition cancels and replaces the third edition (ISO 16929:2019), which has been technically revised.

The main changes compared to the previous edition are as follows:

— in 6.1.1, the minimum amount of biowaste has been changed to 15 kg from 30 kg due to the smaller size of composting bins;

— in 6.2.2.3, a separate temperature profile has been added to cover tests including also production of compost for ecotoxicity tests.

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.

Introduction

The biological treatment of biodegradable plastic materials includes aerobic composting in well-operated, municipal or industrial biological waste treatment facilities. Determining the degree of disintegration of plastic materials in a pilot-scale plant is an important step within a test scheme to evaluate the industrial compostability of such materials.

To claim industrial compostability, a material not only has to disintegrate in a composting system, it also has to biodegrade in a composting system (as can be shown by standard test methods) and has to complete its biodegradation during the end-use of the compost. Furthermore, the compost has to meet the relevant quality criteria, including low content of regulated metals, no ecotoxicity, and no obviously distinguishable residues.

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

1 Scope

This document defines a test method used to determine the degree of disintegration of plastic materials in a pilot-scale aerobic composting test under defined conditions. It forms part of an overall scheme for the evaluation of the industrial compostability of plastics as outlined in ISO 17088.

The test method laid down in this document is also used to determine the influence of the test material on the composting process and the quality of the compost obtained. This test method cannot be used to determine the aerobic biodegradability of a test material.

NOTE Other methods are available for this test (for example, see ISO 14851, ISO 14852 or ISO 14855-1 and ISO 14855-2).

2 Normative references

There are no normative references in this document.

3 Terms and definitions

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

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

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

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

3.1
degradation
irreversible process leading to a significant change in the structure of a material, typically characterized by a loss of properties (e.g. integrity, molecular mass or structure, mechanical strength) and/or by fragmentation, affected by environmental conditions, proceeding over a period of time and comprising one or more steps

3.2
biodegradation
degradation (3.1) caused by biological activity especially by enzymatic action leading to a significant change in the chemical structure of a material

3.3
disintegration
physical breakdown of a material into very small fragments

3.4
compost
organic soil conditioner obtained by *biodegradation* (3.2) of a mixture principally consisting of various vegetable residues, occasionally with other organic material, and having a limited mineral content