

Plastics - Determination of the degree of disintegration of plastic materials under simulated composting conditions in a laboratory-scale test (ISO 20200:2015)

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

See Eesti standard EVS-EN ISO 20200:2015 sisaldab Euroopa standardi EN ISO 20200:2015 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 20200:2015 consists of the English text of the European standard EN ISO 20200:2015.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 09.12.2015.	Date of Availability of the European standard is 09.12.2015.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile [standardiosakond@evs.ee](mailto:standardiosakond@evs.ee).

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EUROPEAN STANDARD

EN ISO 20200

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English Version

## Plastics - Determination of the degree of disintegration of plastic materials under simulated composting conditions in a laboratory-scale test (ISO 20200:2015)

Plastiques - Détermination du degré de désintégration de matériaux plastiques dans des conditions de compostage simulées lors d'un essai de laboratoire (ISO 20200:2015)

Kunststoffe - Bestimmung des Zersetzungsgrades von Kunststoffmaterialien unter nachgebildeten Kompostierungsbedingungen mittels einer Prüfung im Labormaßstab (ISO 20200:2015)

This European Standard was approved by CEN on 17 October 2015.

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COMITÉ EUROPÉEN DE NORMALISATION  
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## European foreword

This document (EN ISO 20200:2015) 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of an identical text or by endorsement, at the latest by June 2016, and conflicting national standards shall be withdrawn at the latest by June 2016.

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

This document supersedes EN ISO 20200:2005.

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

### Endorsement notice

The text of ISO 20200:2015 has been approved by CEN as EN ISO 20200:2015 without any modification.

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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](http://www.iso.org/directives)).

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: [Foreword - Supplementary information](#)

The committee responsible for this document is ISO/TC 61, *Plastics*, Subcommittee SC 5, *Physical-chemical properties*.

This second edition cancels and replaces the first edition (ISO 20200:2004), which has been technically revised with the following changes:

- a) the term "heavy metal" has been replaced by "regulated metal" ([3.2](#));
- b) the term "commercial" has been replaced by "municipal or industrial" ([Clause 4](#) and [5](#));
- c) the numerical value of R 42,8 % has been replaced by 42,3 % ([Clause 13](#));
- d) the variability of the results has been raised from 10 % to 20 % ([Clause 13](#)).

## Introduction

The test method described in this International Standard determines the degree of disintegration of plastic materials when exposed to a composting environment. The method is simple and inexpensive, 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. This test method is not aimed at determining the biodegradability of plastic materials under composting conditions. Further testing will be necessary before being able to claim compostability.

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

## 1 Scope

This International Standard 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, in whole or in part, are normatively referenced in this document and are indispensable for its application. 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.

### 3.1

#### **compost**

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

### 3.2

#### **compostability**

ability of a material to be biodegraded in a composting process

Note 1 to entry: To claim compostability, it must have been demonstrated that a material can be biodegraded and disintegrated in a composting system (as can be shown by standard test methods) and completes its biodegradation during the end-use of the compost. The compost must meet the relevant quality criteria. Quality criteria are, e.g. low regulated metal content, no ecotoxicity, no obviously distinguishable residues.

### 3.3

#### **composting**

aerobic process designed to produce compost

### 3.4

#### **disintegration**

physical breakdown of a material into very small fragments

### 3.5

#### **dry mass**

mass of a sample measured after drying

Note 1 to entry: Dry mass is expressed as a percentage of the mass of the wet sample.

### 3.6

#### **mesophilic incubation period**

incubation at 25 °C to allow the development of microorganisms growing at room temperature