

---

**Polimerni materiali - Ugotavljanje dokončne anaerobne biodegradacije v pogojih anaerobne razgradnje pri visokem deležu trdnih snovi - Metoda z analizo sproščenega bioplina (ISO 15985:2014)**

Plastics - Determination of the ultimate anaerobic biodegradation under high-solids anaerobic-digestion conditions - Method by analysis of released biogas (ISO 15985:2014)

Kunststoffe - Bestimmung der vollständigen anaeroben biologischen Abbaubarkeit unter anaeroben High-Solid-Aufschlussbedingungen - Verfahren mittels Analyse des freigesetzten Biogases (ISO 15985:2014)

Plastiques - Évaluation de la biodegradation anaérobie ultime dans des conditions de digestion anaérobie à teneur élevée en solides - Méthode par analyse du biogaz libéré (ISO 15985:2014)

**Ta slovenski standard je istoveten z: EN ISO 15985:2017**

---

**ICS:**

83.080.01	Polimerni materiali na splošno	Plastics in general
-----------	--------------------------------	---------------------

**SIST EN ISO 15985:2018****en,fr,de**

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

SIST EN ISO 15985:2018

<https://standards.iteh.ai/catalog/standards/sist/d444561a-b955-4731-bfa2-8cae213c3d7a/sist-en-iso-15985-2018>

EUROPEAN STANDARD

EN ISO 15985

NORME EUROPÉENNE

EUROPÄISCHE NORM

December 2017

ICS 83.080.01

English Version

**Plastics - Determination of the ultimate anaerobic biodegradation under high-solids anaerobic-digestion conditions - Method by analysis of released biogas (ISO 15985:2014)**

Plastiques - Évaluation de la biodégradation anaérobie ultime dans des conditions de digestion anaérobie à teneur élevée en solides - Méthode par analyse du biogaz libéré (ISO 15985:2014)

Kunststoffe - Bestimmung der vollständigen anaeroben biologischen Abbaubarkeit unter anaeroben High-Solid-Aufschlussbedingungen - Verfahren mittels Analyse des freigesetzten Biogases (ISO 15985:2014)

This European Standard was approved by CEN on 17 October 2017.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of 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, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



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

**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

<b>Contents</b>	<b>Page</b>
<b>European foreword.....</b>	<b>3</b>

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

[SIST EN ISO 15985:2018](https://standards.iteh.ai/catalog/standards/sist/d444561a-b955-4731-bfa2-8cae213c3d7a/sist-en-iso-15985-2018)  
<https://standards.iteh.ai/catalog/standards/sist/d444561a-b955-4731-bfa2-8cae213c3d7a/sist-en-iso-15985-2018>

## European foreword

The text of ISO 15985:2014 has been prepared by Technical Committee ISO/TC 61 "Plastics" of the International Organization for Standardization (ISO) and has been taken over as EN ISO 15985:2017 by 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 2018, and conflicting national standards shall be withdrawn at the latest by June 2018.

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.

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, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

### Endorsement notice

**iTeh STANDARD PREVIEW**  
(standards.iteh.ai)

The text of ISO 15985:2014 has been approved by CEN as EN ISO 15985:2017 without any modification.

[SIST EN ISO 15985:2018](https://standards.iteh.ai/catalog/standards/sist/d444561a-b955-4731-bfa2-8cae213c3d7a/sist-en-iso-15985-2018)

<https://standards.iteh.ai/catalog/standards/sist/d444561a-b955-4731-bfa2-8cae213c3d7a/sist-en-iso-15985-2018>

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

SIST EN ISO 15985:2018

<https://standards.iteh.ai/catalog/standards/sist/d444561a-b955-4731-bfa2-8cae213c3d7a/sist-en-iso-15985-2018>

INTERNATIONAL  
STANDARD

ISO  
15985

Second edition  
2014-05-01

---

---

**Plastics — Determination of the  
ultimate anaerobic biodegradation  
under high-solids anaerobic-digestion  
conditions — Method by analysis of  
released biogas**

*Plastiques — Évaluation de la biodégradation anaérobie ultime dans  
des conditions de digestion anaérobie à teneur élevée en solides —  
Méthode par analyse du biogaz libéré*

iTeh STANDARD PREVIEW  
(standards.iteh.ai)

SIST EN ISO 15985:2018

<https://standards.iteh.ai/catalog/standards/sist/d444561a-b955-4731-bfâ2-8cae213c3d7a/sist-en-iso-15985-2018>



Reference number  
ISO 15985:2014(E)

© ISO 2014

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

SIST EN ISO 15985:2018

<https://standards.iteh.ai/catalog/standards/sist/d444561a-b955-4731-bfa2-8cae213c3d7a/sist-en-iso-15985-2018>



**COPYRIGHT PROTECTED DOCUMENT**

© ISO 2014

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office  
Case postale 56 • CH-1211 Geneva 20  
Tel. + 41 22 749 01 11  
Fax + 41 22 749 09 47  
E-mail [copyright@iso.org](mailto:copyright@iso.org)  
Web [www.iso.org](http://www.iso.org)

Published in Switzerland



# Contents

Page

Foreword.....	iv
Introduction.....	v
<b>1 Scope.....</b>	<b>1</b>
<b>2 Normative references.....</b>	<b>1</b>
<b>3 Terms and definitions.....</b>	<b>1</b>
<b>4 Principle.....</b>	<b>2</b>
<b>5 Test environment.....</b>	<b>2</b>
<b>6 Reagents.....</b>	<b>2</b>
<b>7 Apparatus.....</b>	<b>3</b>
<b>8 Procedure.....</b>	<b>3</b>
8.1 Preparation of the inoculum.....	3
8.2 Preparation of test material and reference material.....	4
8.3 Start-up of the test.....	4
8.4 Incubation period.....	4
8.5 Termination of the test.....	5
<b>9 Calculation and expression of results.....</b>	<b>5</b>
9.1 Calculation of gaseous carbon.....	5
9.2 Calculation of the percentage biodegradation.....	5
9.3 Calculation of loss in mass.....	6
9.4 Expression of results.....	6
<b>10 Validity of results.....</b>	<b>6</b>
<b>11 Test report</b> <a href="https://standards.iteh.ai/catalog/standards/sist/d444561a-b955-4731-bfa2-8cae213c3d7a/sist-en-iso-15985-2018">https://standards.iteh.ai/catalog/standards/sist/d444561a-b955-4731-bfa2-8cae213c3d7a/sist-en-iso-15985-2018</a> .....	<b>6</b>
<b>Annex A (informative) Principle of test system.....</b>	<b>8</b>
<b>Annex B (informative) Example of loss in mass determination.....</b>	<b>9</b>
<b>Bibliography.....</b>	<b>10</b>

## ISO 15985:2014(E)

### 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)).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

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

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 15985:2004). It also incorporates the Technical Corrigendum ISO 15985:2004/Cor.1:2007.

The main changes are:

- a) requirements regarding disintegration removed in the whole document;
- b) units added where necessary;
- c) bibliography updated.

## Introduction

New types of plastic are being developed in which biodegradability is a specifically sought-for characteristic. These plastics and derived products can be added to or used as feedstock for biological recycling and recovery in aerobic composting plants or anaerobic biogasification plants. To make sure these plastics are fit for biological recycling, their biodegradability must be demonstrated, preferably by standard test methods.

Standard test methods which determine the degree of biodegradation under aerobic, high-solids conditions have been developed (e.g. ISO 14855-1 and ISO 14855-2). However, it is well known from the literature that the degree of biodegradation can differ significantly depending on the environmental conditions such as the presence or the absence of oxygen (aerobic or anaerobic). To have a complete understanding of the biodegradation characteristics of a plastic under these different environmental conditions, various methods are required.

This International Standard specifies a method for the determination of the ultimate anaerobic biodegradation of plastic materials under high-solids conditions. This is representative of systems for the anaerobic biogasification of the organic fraction of municipal solid waste. Another method for determining the degree of anaerobic biodegradation is ISO 11734. However, this method is designed for soluble test materials in aqueous test conditions and at low concentrations (typically detergents) which is not typical of plastics.

## iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST EN ISO 15985:2018](https://standards.iteh.ai/catalog/standards/sist/d444561a-b955-4731-bfa2-8cae213c3d7a/sist-en-iso-15985-2018)

<https://standards.iteh.ai/catalog/standards/sist/d444561a-b955-4731-bfa2-8cae213c3d7a/sist-en-iso-15985-2018>