

**Materials and articles in contact with
foodstuffs - Plastics - Part 1: Guide to
the selection of conditions and test
methods for overall migration**

Materials and articles in contact with foodstuffs -
Plastics - Part 1: Guide to the selection of conditions
and test methods for overall migration

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 1186-1:2002 sisaldab Euroopa standardi EN 1186-1:2002 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 18.09.2002 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 1186-1:2002 consists of the English text of the European standard EN 1186-1:2002.</p> <p>This document is endorsed on 18.09.2002 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p>Käsitlusala: This Part of this European Standard provides a guide to the selection of the appropriate conditions and test methods for the determination of overall migration into food simulants and test media from plastics which are intended to come into contact with foodstuffs.</p>	<p>Scope: This Part of this European Standard provides a guide to the selection of the appropriate conditions and test methods for the determination of overall migration into food simulants and test media from plastics which are intended to come into contact with foodstuffs.</p>
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Võtmesõnad:

Hinnagrupp T

English version

Materials and articles in contact with foodstuffs - Plastics - Part 1: Guide to the selection of conditions and test methods for overall migration

Matériaux et objets en contact avec les denrées alimentaires - Matière plastique - Partie 1: Guide pour le choix des conditions et des méthodes d'essai en matière de migration globale

Werkstoffe und Gegenstände in Kontakt mit Lebensmitteln - Kunststoffe - Teil 1: Leitfaden für die Auswahl der Prüfbedingungen und Prüfverfahren für die Gesamtmigration

This European Standard was approved by CEN on 5 January 2002.

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Foreword

This document EN 1186-1:2002 has been prepared by Technical Committee CEN/TC 194 'Utensils in contact with food', the secretariat of which is held by BSI.

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 October 2002, and conflicting national standards shall be withdrawn at the latest by October 2002.

This document supersedes ENV 1186-1:1994.

This document is one of a series of methods of test for plastics materials and articles in contact with foodstuffs.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EC Directive(s).

For relationship with EC Directive(s), see informative annex ZA which is an integral part of this document.

At the time of preparation and publication of this standard the European Union legislation relating to plastics materials and articles intended to come into contact with foodstuffs is incomplete. Further Directives and amendments to existing Directives are expected which could change the legislative requirements which this standard supports. It is therefore strongly recommended that users of this standard refer to the latest relevant published Directive(s) before commencement of any of the test or tests described in this standard.

The titles of other parts of this European Standard are as follows:

EN 1186 Materials and articles in contact with foodstuffs - Plastics —:

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| Part 2 | Test methods for overall migration into olive oil by total immersion |
| Part 3 | Test methods for overall migration into aqueous food simulants by total immersion |
| Part 4 | Test methods for overall migration into olive oil by cell |
| Part 5 | Test methods for overall migration into aqueous food simulants by cell |
| Part 6 | Test methods for overall migration into olive oil using a pouch |
| Part 7 | Test methods for overall migration into aqueous food simulants using a pouch |
| Part 8 | Test methods for overall migration into olive oil by article filling |
| Part 9 | Test methods for overall migration into aqueous food simulants by article filling |
| Part 10 | Test methods for overall migration into olive oil (modified method for use in cases where incomplete extraction of olive oil occurs) |
| Part 11 | Test methods for overall migration into mixtures of ¹⁴ C-labelled synthetic triglycerides |
| Part 12 | Test methods for overall migration at low temperatures |
| Part 13 | Test methods for overall migration at high temperatures |
| Part 14 | Test method for substitute tests for overall migration into iso-octane and 95 % aqueous ethanol |

Part 15 Alternative test methods to migration into fatty food simulants by rapid extraction into iso-octane and/or 95 % ethanol

Annexes A and B form normative parts of this standard. Annex C is for information only

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

Introduction

No single test method has been devised which can be used to determine overall migration, at all temperatures, in all food simulants. Indeed, owing to the practical difficulties inherent in testing with involatile extractants such as fats and the multitude of applications in which plastics articles come into contact with food, there are many methods and permitted variations to methods in this standard.

EN 1186-1 is intended to give advice on the selection of the most appropriate type of test, test conditions and test method for a given application of a plastics article and is intended to be read in its entirety before testing protocols are finalized. For most plastics articles methods in EN 1186-2 to EN 1186-9 are suitable, according to the form in which the article is tested. Subsequent Parts of this standard are intended to be used in conjunction with the methods in EN 1186-2 to EN 1186-9 for more difficult samples and at other temperatures.

The general criteria for the operation and assessment of testing laboratories as well as the general criteria for laboratory accreditation bodies are set out in EN 45001, EN 45002 and EN 45003. It is recommended that laboratories using this standard validate their procedures by testing certified reference samples and by taking part in a proficiency scheme. Reference plastics samples with well characterized values for overall migration into the fatty food simulant olive oil have been prepared as part of a programme sponsored by the Standards, Measurement & Testing Programme of the European Commission, DG XII. Suitable proficiency schemes are operated in Germany and in the United Kingdom, for example the German Assessment Scheme for Food Testing (GAFT) and the Food Analysis Performance Assessment Scheme (FAPAS) conducted by the Central Science Laboratory of the Ministry of Agriculture, Fisheries and Food.

1 Scope

This Part of this European Standard provides a guide to the selection of the appropriate conditions and test methods for the determination of overall migration into food simulants and test media from plastics which are intended to come into contact with foodstuffs.

2 Normative references

This European Standard incorporates by dated and undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to and revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 1186:2002, *Materials and articles in contact with foodstuffs – Plastics*.

ENV 1186-10, *Materials and articles in contact with foodstuffs – Plastics - Part 10: Test methods for overall migration into olive oil (modified method for use in cases where incomplete extraction of olive oil occurs)*.

ENV 1186-13, *Materials and articles in contact with foodstuffs – Plastics - Part 13: Test methods for overall migration at high temperatures*.

ENV 1186-14, *Materials and articles in contact with foodstuffs – Plastics - Part 14: Test methods for 'substitute tests' for overall migration from plastics intended to come into contact with fatty foodstuffs using test media iso-octane and 95 % ethanol*.

3 Terms and definitions

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

3.1 plastics
organic macromolecular compounds obtained by polymerization, polycondensation, polyaddition or any similar process from molecules with a lower molecular weight or by chemical alteration of natural molecules. Other substances or matter may be added to such compounds

3.2 final article
article in its ready-for-use state or as sold

3.3 sample
material or article under investigation

3.4 test specimen
portion of the sample on which a test is performed

3.5 test piece
portion of the test specimen

3.6 conventional oven
oven where the air within the oven is heated and this heat is then transferred to the food through the plastic as opposed to a microwave oven where the food itself is heated directly by microwave irradiation