

ICS 67.250

English version

Materials and articles in contact with foodstuffs — Polymeric coatings on metal substrates — Guide to the selection of conditions and test methods for overall migration

Werkstoffe und Gegenstände in Kontakt mit Lebensmitteln
– Polymerebeschichtungen auf Substraten aus Metall –
Leitfaden zur Auswahl der Bedingungen und Prüfverfahren
zur Bestimmung der Gesamtmigration

This Technical Specification (CEN/TS) was approved by CEN on 28 July 2002 for provisional application.

The period of validity of this CEN/TS is limited initially to three years. After two years the members of CEN will be requested to submit their comments, particularly on the question whether the CEN/TS can be converted into a European Standard.

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Foreword

This document (CEN/TS 14235:2002) has been prepared by CEN/TC 194 "Utensils in contact with food", the secretariat of which is held by BSI.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

In this Technical Specification the annexes A, B and C are normative.

This Technical Specification includes a Bibliography.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to announce this Technical Specification: 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 polymeric coatings on metal substrates come into contact with food, there are many methods and permitted variations to methods in this Technical Specification.

This Technical Specification 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 polymeric coating on a metal substrate and is intended to be read in its entirety before testing protocols are finalized. A test method for overall migration into aqueous simulants by article filling from polymeric coatings on food and beverage cans and non-stick coatings is given in clause 12. For many polymeric coated articles methods in EN 1186-2 to EN 1186-9 are suitable, according to the form in which the article is tested.

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 Technical Specification validate their procedures by testing certified reference samples and by taking part in a proficiency scheme. 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 Technical Specification gives guidelines for the selection of the appropriate conditions and test methods for the determination of overall migration into food simulants and test media from polymeric coatings on metal substrates which are intended to come into contact with foodstuffs and a test method for overall migration into aqueous simulants by article filling from polymeric coatings on food and beverage cans and non-stick coatings.

NOTE Polymeric coatings on metal substrates are not yet included in the scope of any European Union Directive. This Technical Specification has been prepared to assist in the development of such a Directive.

2 Normative references

This Technical Specification incorporates by dated or 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 or revisions of any of these publications apply to this Technical Specification only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

- EN 1186-2, *Materials and articles in contact with foodstuffs - Plastics - Part 2: Test methods for overall migration into olive oil by total immersion.*
- EN 1186-3, *Materials and articles in contact with foodstuffs - Plastics - Part 3: Test methods for overall migration into aqueous food simulants by total immersion.*
- EN 1186-4, *Materials and articles in contact with foodstuffs - Plastics - Part 4: Test methods for overall migration into olive oil by cell.*
- EN 1186-5, *Materials and articles in contact with foodstuffs - Plastics - Part 5: Test methods for overall migration into aqueous food simulants by cell.*
- EN 1186-6, *Materials and articles in contact with foodstuffs - Plastics - Part 6: Test methods for overall migration into olive oil using a pouch*
- EN 1186-7, *Materials and articles in contact with foodstuffs - Plastics - Part 7: Test methods for overall migration into aqueous food simulants using a pouch.*
- EN 1186-8; *Materials and articles in contact with foodstuffs - Plastics - Part 8: Test methods for overall migration into olive oil by article filling.*
- EN 1186-12, *Materials and articles in contact with foodstuffs - Plastics - Part 12: Test methods for overall migration at low temperatures.*
- EN 1186-13, *Materials and articles in contact with foodstuffs - Plastics - Part 13: Test methods for overall migration at high temperatures.*
- ISO 648 *Laboratory glassware - One-mark pipettes*

3 Terms and definitions

For the purposes of this Technical Specification the following terms and definitions apply.

3.1 polymeric coating

organic material applied in the form of a continuous film on a substrate in such a way as to form a protective layer and/or a functional barrier between food and substrate. They may be applied to the substrate in the form of solution, dispersions, powders, or solvent free preparations.

NOTE This may be different to the definition which is expected to be included in Commission Directive 90/128/EEC when its scope is extended to include polymeric coatings