BS EN 1104:2018

BSI Standards Publication

Paper and board intended to come into contact with foodstuffs – Determination of the transfer of antimicrobial constituents

National foreword

This British Standard is the UK implementation of EN 1104:2018. It supersedes BS EN 1104:2005, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee PAI/11, Methods of test for paper, board and pulps.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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Compliance with a British Standard cannot confer immunity from legal obligations.

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Date	Text affected

EUROPEAN STANDARD

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English Version

Paper and board intended to come into contact with foodstuffs - Determination of the transfer of antimicrobial constituents

Papier et carton destinés à entrer en contact avec les denrées alimentaires - Détermination du transfert des constituants antimicrobiens

Papier und Pappe vorgesehen für den Kontakt mit Lebensmitteln - Bestimmung des Übergangs antimikrobieller Bestandteile

This European Standard was approved by CEN on 15 July 2018.

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European foreword

This document (EN 1104:2018) has been prepared by Technical Committee CEN/TC 172 “Pulp, paper and board”, the secretariat of which is held by DIN.

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of an identical text or by endorsement, at the latest by May 2019, and conflicting national standards shall be withdrawn at the latest by May 2019.

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 1104:2005.

With regards to EN 1104:2005 the following changes have been made:

a) The definition of the inhibition zone has been clarified;

b) Modified Sabouraud nutrient medium for the preparation of *Aspergillus niger* spores has been replaced by 4 % Sabouraud;

c) Guidelines for interpreting the results in Annex A have been added, including figures: these guidelines are intended to aid the interpretation of results obtained in the framework of application of EN 1104 standard for the various controls performed and for the samples tested;

d) Editorial updating.

According to the CEN-CENELEC Internal Regulations, the national standards organisations 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.

1 Scope

This document specifies a method for the determination of transfer of antimicrobial constituents from paper and board materials and articles intended for food contact.

NOTE The need of using this Standard may be specified by the legislation regarding paper and board intended to come into contact with foodstuffs.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN ISO 186, *Paper and board — Sampling to determine average quality (ISO 186)*

EN ISO 7218, *Microbiology of food and animal feeding stuffs — General requirements and guidance for microbiological examinations (ISO 7218)*

EN ISO 11133, *Microbiology of food, animal feed and water — Preparation, production, storage and performance testing of culture media (ISO 11133)*

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:

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp

3.1
inhibition zone
obvious area in which growth is absent and which forms around test pieces placed on a nutrient medium inoculated with a preselected test microorganism, due to the release of water-soluble antimicrobial constituents; proof of the presence of an inhibition zone is provided by the absence of test micro-organism growth (translucent zone) in a minimum of 2 mm width zone at the edges of the test pieces

4 Principle

A prepared nutrient medium is mixed with an appropriate inoculum and poured into Petri dishes. The test pieces are placed on the nutrient medium before its complete solidification and then incubated. When incubation is terminated, the existence of an inhibition zone is an indicator of the release of antimicrobial constituents.

The test is performed with a bacterium, *Bacillus subtilis*, and with a fungus, *Aspergillus niger*.

NOTE The result is based on a visual decision.

5 Apparatus

All laboratory equipment and parts of the equipment shall be as described in the EN ISO 7218.

5.1 Punch iron

Diameter = 10 mm to 15 mm, sterilizable.