

Textiles — Determination of antibacterial activity of antibacterial finished products

The European Standard EN ISO 20743:2007 has the status of a British Standard

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National foreword

This British Standard is the UK implementation of EN ISO 20743:2007.

The UK participation in its preparation was entrusted to Technical Committee TCI/80, Chemical testing of textiles.

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.

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

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Foreword

This document (prEN ISO 20743:2007) has been prepared by Technical Committee ISO/TC 38 "Textiles" in collaboration with Technical Committee CEN/TC 248 "Textiles and textile products", 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of an identical text or by endorsement, at the latest by December 2007, and conflicting national standards shall be withdrawn at the latest by December 2007.

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, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

Endorsement notice

The text of ISO 20743:2007 has been approved by CEN as EN ISO 20743:2007 without any modifications.

INTERNATIONAL STANDARD

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Textiles — Determination of antibacterial activity of antibacterial finished products

*Textiles — Détermination de l'activité antibactérienne des produits finis
antibactériens*



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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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.

ISO 20743 was prepared by Technical Committee ISO/TC 38, *Textiles*.

Introduction

These test methods were established in order to address the substantial need for an International Standard to determine antibacterial activity for antibacterial finished textile products.

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Textiles — Determination of antibacterial activity of antibacterial finished products

1 Scope

This International Standard specifies quantitative test methods to determine the antibacterial activity of antibacterial finished textile products including nonwovens.

This International Standard is applicable to all textile products, including cloth, wadding, thread and material for clothing, home furnishings and miscellaneous goods regardless of the type of antibacterial agent used (organic, inorganic, natural or man-made) or the method of application (built-in, after-treatment or grafting).

Based on the intended application and on the environment in which the textile product is to be used, the user can select the most suitable of the following three methods on determination of antibacterial activity:

- a) absorption method (an evaluation method in which test bacterial suspension is inoculated directly onto samples);
- b) transfer method (an evaluation method in which test bacteria are placed on an agar plate and transferred onto samples);
- c) printing method (an evaluation method in which test bacteria are placed on a filter and printed onto samples).

The colony plate count method and the ATP (ATP = Adenosine Tri-phosphate) luminescence method are also specified for measuring the enumeration of bacteria.

2 Normative references

The following referenced documents are indispensable for the application 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.

ISO 6330, *Textiles — Domestic washing and drying procedures for textile testing*

3 Terms and definitions

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

3.1

textile fabric

general term employed for designating textile surfaces, woven fabrics, knitted fabrics, etc., formed by the interlocking of textile materials having a certain cohesion and which are generally intended for clothing or furniture applications

NOTE Often includes certain types of nonwovens.

3.2

control fabric

fabric used to validate the growth condition of test bacteria

NOTE The same fabric as the fabric to be tested but without antibacterial treatment. If this is not possible, then 100 % cotton fabric without fluorescent brighteners or other finish.

3.3

antibacterial agent

product designed to prevent or mitigate the growth of bacteria, to reduce the number of bacteria or to kill bacteria

3.4

antibacterial finish

treatment designed to prevent or mitigate the growth of bacteria, to reduce the number of bacteria or to kill bacteria

3.5

antibacterial activity

activity of an antibacterial finish used to prevent or mitigate the growth of bacteria, to reduce the number of bacteria or to kill bacteria

3.6

plate count method

method in which the number of bacteria present after incubation is calculated by counting the number of colonies according to a ten-time dilution method

NOTE The results are expressed in "CFU (Colony Forming Unit)".

3.7

luminescence method

method in which the amount of ATP contained in bacterial cells is measured

NOTE The results are expressed in "mol of ATP".

3.8

neutralizer

chemical agents used to inactivate, neutralize, or quench the antibacterial properties of antibacterial agents

4 Safety precaution

Test methods specified herein require the use of bacteria.

These tests should be carried out by persons with training and experience in the use of microbiological techniques.

Appropriate safety precautions should be observed with due consideration given to country-specific regulations.

5 Apparatus

Usual laboratory apparatus and, in particular, the following.

5.1 Spectrophotometer, capable of measuring at a 620 nm to 660 nm wavelength, or **McFarland's nephelometer**.

5.2 Incubator, capable of maintaining a constant temperature of $37\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$.