Textile fabrics - Determination of the antibacterial activity - Agar diffusion plate test

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EESTI STANDARDI EESSÕNA **NATIONAL FOREWORD**

Käesolev Eesti standard EVS-EN ISO 20645:2005 sisaldab Euroopa standardi EN ISO 20645:2004 ingliskeelset teksti. Käesolev dokument on jõustatud 25.01.2005 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes. Standard on kättesaadav Eesti standardiorganisatsioonist.	This Estonian standard EVS-EN ISO 20645:2005 consists of the English text of the European standard EN ISO 20645:2004. This document is endorsed on 25.01.2005 with the notification being published in the official publication of the Estonian national standardisation organisation. The standard is available from Estonian standardisation organisation.

Käsitlusala: This standard specifies a method for the determination the antibacterial activity of antimicrobial treatments applied to woven, knitted and other flat textiles. This method is applicable to testing hygienic finishes of hydrophilic, air-permeable materials. A minimum diffusion of the antimicrobial finish into the test agar is necessary with this procedure	**Scope:** This standard specifies a method for the determination the antibacterial activity of antimicrobial treatments applied to woven, knitted and other flat textiles. This method is applicable to testing hygienic finishes of hydrophilic, air-permeable materials. A minimum diffusion of the antimicrobial finish into the test agar is necessary with this procedure

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Võtmesõnad: definition, escapement mechanisms, inhibition tests, inspection, materials testing, microbiological-resistance, microbiological-resistance tests, microorganisms, micro-organisms, resistance, testing, tests, textile industry, textile testing, textiles, woven fabrics

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English version

Textile fabrics

Determination of antibacterial activity – Agar diffusion plate test
(ISO 20645 : 2004)

Etoffes – Contrôle de l'activité anti-bactérienne – Essai de diffusion sur plaques de gélose (ISO 20645 : 2004)

Textile Flächengebilde – Prüfung der antibakteriellen Wirkung – Agarplatt-endiffusionstest (ISO 20645 : 2004)

This European Standard was approved by CEN on 2004-09-02.

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Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Management Centre or to any CEN member.

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CEN

European Committee for Standardization
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Foreword

This document (EN ISO 20645:2004) has been prepared by Technical Committee CEN/TC 248 “Textiles and textile products”, the secretariat of which is held by BSI, in collaboration with Technical Committee ISO/TC 38 “Textiles”.

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 2005, and conflicting national standards shall be withdrawn at the latest by June 2005.

This document includes a Bibliography.

CAUTION — This method involves the use of processes that could lead to a hazardous situation. Attention is drawn to the safety precautions in Clause 3.

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

Introduction

The application of an antimicrobial finish to a textile can prevent bacterial growth and might reduce the effects of microbial pathway products, biodeterioration and microbiogenous odours.

This method determines the activity of such treatments qualitatively when different products are compared. Semi-quantitative information on the effect of treatments can be obtained when different concentrations of the same product are compared.

1 Scope

This document specifies a method for the determination of the effect of antibacterial treatments applied to woven, knitted and other flat textiles.

This method is applicable to testing hygienic finishes of hydrophilic, air-permeable materials or antibacterial products incorporated in the fibre. A minimum diffusion of the antibacterial treatment into the test agar is necessary with this procedure.

NOTE Other materials may be tested using this method, provided that it is adapted accordingly.

This method is not suitable for testing textiles treated with antibacterial treatments that react with the agar.

2 Terms and definitions

For the purposes of this document, the following term and definition applies.

antibacterial effect
inhibition of bacterial growth in favourable growing conditions

3 Safety precautions

This method requires the use of bacteria and conditions that promote bacterial growth. Since the bacteria might be pathogenic the tests should be carried out by trained personnel.

Appropriate safety precautions should be observed.

4 Principle

Specimens of the material to be tested are placed on two-layer agar plates. The lower layer consists of a culture medium free from bacteria and the upper layer is inoculated with the selected bacteria. The textiles are tested on both sides. The level of antibacterial activity is assessed by examining the extent of bacterial growth in the contact zone between the agar and the specimen and, if present, the extent of the inhibition zone around the specimen.

5 Apparatus, reagents and culture media

5.1 Apparatus

5.1.1 *Incubator* , capable of maintaining a temperature of (37 ± 1)°C.

5.1.2 *Autoclave*, capable of operating at 121°C and 205 kPa (2,05 bar).

5.1.3 *Water bath*, capable of maintaining a temperature of (45 ± 2)°C.

5.1.4 *Shaker,* for test tubes

5.1.5 *Microscope*, 20 × magnification, lighting from beneath (lens 20x, stereomicroscope 20x).

5.1.6 *Petri dishes*, of glass or polystyrene construction and 9 cm inner diameter