
Plastics — Measurement of antibacterial activity on plastics surfaces

Plastiques — Mesurage de l'action antibactérienne sur les surfaces en plastique



PDF disclaimer

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

This document is a preview generated by EVS



COPYRIGHT PROTECTED DOCUMENT

© ISO 2007

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

Contents

Page

Foreword.....	iv
1 Scope	1
2 Normative references	1
3 Terms and definitions	2
4 Materials	2
4.1 Bacteria to be used for the tests	2
4.2 Reagents, culture media and solutions	3
5 Apparatus	5
6 Sterilization of apparatus and storage of stock cultures	5
6.1 Dry-heat sterilization	5
6.2 High-pressure steam sterilization	6
6.3 Preparation of glassware	6
6.4 Maintenance of stock cultures	6
7 Procedure	6
7.1 Pre-culture of bacteria	6
7.2 Preparation of test specimens	6
7.3 Preparation of test inoculum	7
7.4 Inoculation of test specimens	7
7.5 Incubation of the inoculated test specimens	8
7.6 Recovery of bacteria from test specimens	8
7.7 Determining the viable bacteria count by the pour plate culture method	9
8 Expression of results	9
8.1 Determination of the number of viable bacteria	9
8.2 Conditions for a valid test	9
8.3 Calculation of the antibacterial activity	10
8.4 Effectiveness of the antibacterial agent	10
9 Repeatability and reproducibility	10
10 Test report	11
Annex A (normative) Quality of biological materials	12
Annex B (informative) Repeatability and reproducibility	13
Bibliography	16

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 22196 was prepared by Technical Committee ISO/TC 61, *Plastics*, Subcommittee SC 6, *Ageing, chemical and environmental resistance*.

Plastics — Measurement of antibacterial activity on plastics surfaces

1 Scope

WARNING — Handling and manipulation of microorganisms which are potentially hazardous requires a high degree of technical competence and may be subject to current national legislation and regulations. Only personnel trained in microbiological techniques should carry out such tests. Appropriate practices for disinfection, sterilization and personal hygiene must be strictly observed.

This International Standard specifies a method of evaluating the antibacterial activity of antibacterial-treated plastic products (including intermediate products).

NOTE It may also be suitable for other non-porous materials.

It is not intended to be used to evaluate the effects and propagation of bacteria on plastics without antibacterial treatments. ISO 846^[6] describes tests to evaluate the effects and propagation of bacteria on plastics, which are different from those covered by this International Standard. Those who are interested are referred to ISO 846:1997, method C.

Secondary effects of antibacterial treatments, such as the prevention of biodeterioration and odour, are not covered by this International Standard, which is not intended to be used or referenced as a method to document or claim biodegradability of plastics. For biodegradation, refer to ISO 14851, ISO 14852 and ISO 14855 (see the Bibliography) and related standards.

This International Standard does not concern plastic building materials, such as PVC or composites, unless they act in the same way as treated articles.

Any results obtained with this International Standard should always refer to this standard and the conditions used. Results obtained with this International Standard indicate antibacterial activity under the specified experimental conditions used herein, and do not reflect activity under other circumstances where a variety of factors, such as temperature, humidity, different bacterial species, nutrient conditions, etc., have to be considered. A minimum diffusion of the antibacterial agents/chemicals into the test inoculum is necessary with this procedure.

It is recommended that workers consult ISO 7218.

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