INTERNATIONAL STANDARD

ISO 22196

Second edition
2011-08-01

Measurement of antibacterial activity on plastics and other non-porous surfaces

Mesurage de l'action antibactérienne sur les surfaces en plastique et autres surfaces non poreuses

Reference number
ISO 22196:2011(E)

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

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*.

This second edition cancels and replaces the first edition (ISO 22196:2007). The main change is the extension of the scope of the standard to include non-porous surfaces other than plastics (for details, see the Introduction).

Introduction

Antibacterial materials and products have been widely and rapidly accepted by general consumers as fulfilling a relatively new function, which is distinguishable from the more traditional function of material protection.

Antibacterial products created by incorporating an antibacterial agent (biocide) can suppress the growth of bacteria on the surfaces of products when conditions exist where growth can occur. They can keep surfaces clean and sanitary and can also have an advantage in minimizing the impact on the environment by minimizing diffusion of the agent. This technology is significant for the quality of life, not only in developed countries but also in developing countries.

Antibacterial products have been widely used in plastics, coating materials, ceramics, natural and artificial leather, stainless steel, rubber, etc. The products involved cover a variety of categories, such as electrical appliances, personal items, household goods, nursing-care articles, pet accessories and aircraft-interior fittings.

The scope of the first edition of ISO 22196 was limited to plastics surfaces. In this second edition, the scope has been extended to include surfaces made of other non-porous materials, thus making the second edition applicable to products of the kinds listed above. The test method, which is based on JIS Z 2801[11], has remained unchanged.

Measurement of antibacterial activity on plastics and other non-porous 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 plastics, and other non-porous, surfaces of products (including intermediate products).

It is not intended to be used to evaluate the effects and propagation of bacteria on non-porous surfaces without antibacterial treatments. ISO 846[1] describes tests to evaluate the effects and propagation of bacteria on non-porous surfaces, which are different from those covered by this International Standard (see e.g. 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, for instance, plastics materials. In the case of plastics, biodegradation is covered in ISO 14851[2], ISO 14852[3] and ISO 14855[4] and related standards.

Building materials are excluded, except where they are used in the same manner as treated articles.

Antibacterial-treated textile products are excluded, even if the surfaces are coated or laminated (such products are covered by ISO 20743[5]).

Photocatalytic materials and products are excluded (such materials and products are covered by ISO 27447[6]).

The results obtained should include a reference to this International Standard and the conditions used. Results obtained with this International Standard indicate antibacterial activity under the specified experimental conditions used, 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*