International Standard

ISO 18184

Textiles — Determination of antiviral activity of textile products

Textiles — Détermination de l'activité virucide de produits textiles

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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

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

This third edition cancels and replaces the second edition (ISO 18184:2019), which has been technically revised.

The main changes are as follows:

— in 14.3.2, the calculation of antiviral activity has been updated;

— a new Annex B has been added for test method for SARS-CoV-2, and subsequent annexes have been moved;

— in Annex E, E.4 has been added for the composition of DMEM medium;

— a new Annex F has been added to give additional examples of the virus strain and host cells.

Any feedback or questions on this document should be directed to the user’s national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

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Introduction

Recently, along with the global improvement in the level of living, consumers are showing the trend to seek healthcare or health protective products. Also, an increase in the people's interest for protection against epidemic diseases has been noted, as the overcrowded commuting train car where the commuters experience every day, the hospitals, nursing homes, etc.

Being supported by the processing technology of textile products to provide a high performance which has been highly developed recently, the health protective and hygiene relating products have been advancing into the market.

Because those products are relatively new and included the technical aspects out of textile technology, the testing methods have been developed by the individual producers to evaluate the product performance. That has resulted in inexistence of a unified test method, hindering for both consumers and producers a true explanation or understanding of those high functional products.

The antiviral textile product is one of those products and includes the technical fields of the textile technology and the biotechnology.

The demand to establish an international standard has been growing in the consumers, retailers, producers, etc. as the stakeholders in the market.

Antiviral textile products are textiles capable of reducing the number of infective virus particles that contact the surface of the textile. This document provides a quantitative test method to assess the antiviral performance of such products.

The data obtained in an objective manner by this document give the common knowledge to all the stake holders such as consumers, producers, retailers, etc. to understand the correct performance of the antiviral textile products.

There are two methods to quantify the number of infective virus, as infective virus titre in this document, which are the plaque method and the $TCID_{50}$ method. The method used can be selected by the experience and the convenience of each testing house. Any appropriate cellular system can be used and that the testing conditions when used should be reported.

See Annexes I, J and K for interlaboratory test results.

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Textiles — Determination of antiviral activity of textile products

WARNING — This document calls for use of the infectious viruses or substances/procedures that may be injurious to the health/environment if appropriate conditions are not observed. It refers only to technical suitability and does not absolve the user from legal obligations relating to health and safety/environment at any stage.

1 Scope

This document specifies testing methods for the determination of the antiviral activity of the textile products.

The textile products include woven and knitted fabrics and non-woven fabrics, cotton, fibres, yarns, braids, feathers, etc.

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.

ISO 105-F02, *Textiles — Tests for colour fastness — Part F02: Specification for cotton and viscose adjacent fabrics*

ISO 3696, *Water for analytical laboratory use — Specification and test methods*

ISO 20743:2021, *Textiles — Determination of antibacterial activity of textile products*

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:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1
virus
original biological entity which has a single type of nucleic acid (DNA or RNA), specific structure that opposes the virus to living organisms with a cellular structure (prokaryotes and eukaryotes), and reproduces from its genetic material by replication within the host cell, and leads to absolute intracellular parasitism

Note 1 to entry: The virion is the infectious viral particle.

3.2
virus activity
ability to replicate in the susceptible and permissive host cells

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