

---

---

**Surface active agents — Fabric  
conditioners — Determination of  
antistatic performance**

iTeh Standards  
(<https://standards.iteh.ai>)  
Document Preview

ISO 23324:2020

<https://standards.iteh.ai/catalog/standards/iso/9ba62f44-7eaa-4273-9cd8-4626ec9c4706/iso-23324-2020>



**iTeh Standards**  
**(<https://standards.iteh.ai>)**  
**Document Preview**

ISO 23324:2020

<https://standards.iteh.ai/catalog/standards/iso/9ba62f44-7eaa-4273-9cd8-4626ec9c4706/iso-23324-2020>



**COPYRIGHT PROTECTED DOCUMENT**

© ISO 2020

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office  
CP 401 • Ch. de Blandonnet 8  
CH-1214 Vernier, Geneva  
Phone: +41 22 749 01 11  
Email: [copyright@iso.org](mailto:copyright@iso.org)  
Website: [www.iso.org](http://www.iso.org)

Published in Switzerland

# Contents

Page

Foreword .....	iv
<b>1 Scope .....</b>	<b>1</b>
<b>2 Normative references .....</b>	<b>1</b>
<b>3 Terms and definitions .....</b>	<b>1</b>
<b>4 Principle .....</b>	<b>1</b>
<b>5 Test fabric material .....</b>	<b>2</b>
<b>6 Apparatus and materials .....</b>	<b>2</b>
<b>7 Procedure .....</b>	<b>3</b>
7.1 Preparation of test clothes .....	3
7.1.1 Washing of test clothes .....	3
7.1.2 Drying of test clothes .....	3
7.2 Preparation of conditioner solution .....	4
7.3 Measurement of surface resistance .....	4
7.3.1 Measurement conditions .....	4
7.3.2 Measurement of surface resistance .....	4
<b>8 Expression of results .....</b>	<b>4</b>
8.1 Method of calculation .....	4
8.1.1 Fabric surface resistance ( $R_s$ ) .....	4
8.1.2 Fabric surface resistance coefficient ( $\rho_s$ ) .....	4
8.1.3 Decrease of fabric surface resistance coefficient ( $\Delta\rho_s$ ) .....	5
8.1.4 Decrease of the logarithm of fabric surface resistance coefficient ( $\Delta\lg\rho_s$ ) .....	5
8.2 Expression of results .....	5
<b>9 Test report .....</b>	<b>5</b>
<b>Annex A (informative) Technical specifications for speed controller .....</b>	<b>7</b>
<b>Annex B (informative) .....</b>	<b>9</b>
<b>Bibliography .....</b>	<b>12</b>

## 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 documents 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](http://www.iso.org/directives)).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

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](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 91 *Surface active agents*.

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](http://www.iso.org/members.html).

ISO 23324:2020

<https://standards.iteh.ai/catalog/standards/iso/9ba62f44-7eaa-4273-9cd8-4626ec9c4706/iso-23324-2020>

# Surface active agents — Fabric conditioners — Determination of antistatic performance

## 1 Scope

This document specifies a method for the determination of static electricity elimination (antistatic) performance.

This document is applicable to fabric conditioners and antistatic agents.

NOTE The differences between this document and some International Standards related to static electricity on textiles are listed in [Annex B](#).

## 2 Normative references

There are no normative references in this document.

## 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 <http://www.electropedia.org/>

### 3.1 fabric surface resistance

$R_s$   
resistance measured when electric current flows through the surface of fabric

### 3.2 fabric surface resistance coefficient

$\rho_s$   
surface resistance measured by two electrodes of unit length placed on the fabric surface with the distance of unit length between them

Note 1 to entry: Unit length is expressed in centimetres.

### 3.3 antistatic agent

product used to treat fabric for eliminating static electricity

### 3.4 fabric conditioner

product with both antistatic and softening function, which generally contains cationic surface active agents

## 4 Principle

The electrostatic effect of fabric is subject to not only the amount of static electricity generated, but also the dissipation capacity of electrostatic charge. The fabric surface resistance is a physical quantity characterizing the electrostatic charge attenuation velocity of fabric. Soak the test fabric material in

fabric conditioner solution under specified conditions. Measure the surface resistance of the test fabric material with ultra-high resistance meter before and after soaking. Assess the antistatic performance for fabric conditioner with the decrease of the surface resistance coefficient ( $\Delta\rho_s$ ) or the decrease of the logarithm of the surface resistance coefficient ( $\Delta\lg\rho_s$ ).

## 5 Test fabric material

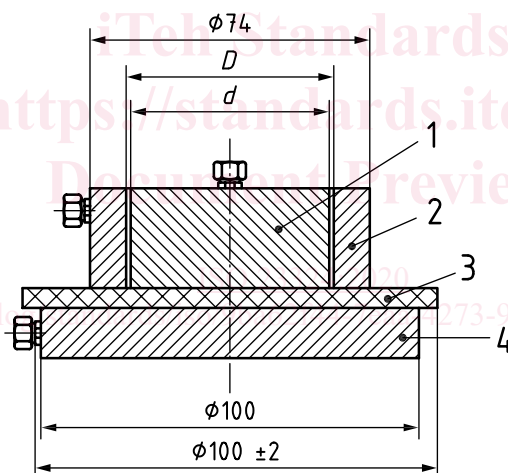
**5.1 Polyester**, white or milky woven twill, with warp 428 threads per decimetre and weft 242 threads per decimetre.

Polyester of other specifications or cloth of other textures can be used. However, only the comparative test result of antistatic performance for different fabric conditioners can be provided, which shall be included in the test report.

## 6 Apparatus and materials

**6.1 Digital ultra-high resistance meter**, with three coaxial electrodes and measuring range from  $1 \times 10^3 \Omega$  to  $1 \times 10^{16} \Omega$ . The intrinsic error within limits shall not exceed 10 % of the indicated value. The pressure that the electrodes press on sample shall be  $100 \text{ g/cm}^2$ . Structure size of coaxial-electrode system is shown in [Figure 1](#).

Dimensions in millimetres



### Key

- 1 measuring electrode
- 2 shield electrode
- 3 test sample
- 4 high-voltage electrode
- $D$  inner diameter of the circular shield electrode
- $d$  diameter of the measuring electrode

**Figure 1 — Coaxial-electrode system**

**6.2 Oven**, regulated at a temperature of  $(45 \pm 2) ^\circ\text{C}$ .

**6.3 Humidistat**. A glass desiccator containing potassium carbonate-saturated solution can be used. The relative humidity (RH) of air at equilibrium shall be 43 % for a temperature between  $10 ^\circ\text{C}$  and  $30 ^\circ\text{C}$ .