INTERNATIONAL STANDARD

ISO 1833-27

First edition
2018-09

Textiles — Quantitative chemical analysis —

Part 27: Mixtures of cellulose fibres with certain other fibres (method using aluminium sulfate)

Textiles — Analyse chimique quantitative —

Partie 27: Mélanges de fibres cellulosiques avec certaines autres fibres (méthode au sulfate d'aluminium)

Reference number
ISO 1833-27:2018(E)

© ISO 2018



COPYRIGHT PROTECTED DOCUMENT

© ISO 2018

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
Fax: +41 22 749 09 47
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

 © ISO 2018 – All rights reserved

Contents

Page

Foreword ..... **iv**
Introduction ..... **v**
1 Scope **1**
2 Normative references **1**
3 Terms and definitions **1**
4 Principle **1**
5 Reagent **1**
6 Apparatus **2**
7 Sampling and pre-treatment of sample **2**
7.1 Sampling 2
7.2 Pre-treatment of laboratory test sample 2
8 Preparation of carbonization solution **2**
9 Test procedure **2**
9.1 General 2
9.2 Soaking the test specimen with carbonization solution 2
9.3 Carbonizing 3
9.4 Removal of carbonized fibre 3
10 Calculation and expression of results **3**
11 Precision **3**
Bibliography **4**

© ISO 2018 – All rights reserved

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).

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).

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

For an explanation on 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 the following URL: www.iso.org/iso/foreword.html.

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

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.

A list of all parts in the ISO 1833 series can be found on the ISO website.

© ISO 2018 – All rights reserved

Introduction

There are several kinds of test methods to determine the composition of fibre mixtures which include manual separation, chemical and microscopical methods. Chemical methods (selective dissolution method) for the analysis of fibre composition are applicable to most of the textile products. The procedure of such test method is that a component is dissolved out by chemical solvents, and then the insoluble residue is weighed. Caution should be exercised in handling chemical solvents such as sulfuric acid (70 %), hydrochloric acid (20 %) and dimethylformamide, etc. These solvents are hazardous and not easy to handle.

An alternative test method can be an eco-friendly and safer test method due to using non-hazardous chemicals. For the mixture of cellulose fibres and some other fibres, cellulose fibre is degraded through carbonization by a small amount of acid and heat treatment, and the residue remains without damage. Environmental condition and safety in the testing room can be improved by this test method.

© ISO 2018 – All rights reserved

Textiles — Quantitative chemical analysis —

Part 27: Mixtures of cellulose fibres with certain other fibres (method using aluminium sulfate)

WARNING — This document calls for the use of 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 a method, using aluminium sulfate, to determine the mass percentage of cellulose fibres, after removal of non-fibrous matter, in textiles made of mixtures of

— cellulose fibres (natural or regenerated)

with

— polyester, polyamide, acrylic, wool and elastane fibres.

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 1833-1:2006, *Textiles — Quantitative chemical analysis — Part 1: General principles of testing*

3 Terms and definitions

No terms and definitions are listed in this document.

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/

4 Principle

The cellulose fibres are degraded from a known dry mass of the mixture with aluminium sulfate and then heat treatment, but the residue remains without damage. The residue is collected, washed, dried and weighed; its mass is expressed as a percentage of the dry mass of the mixture. The percentage of cellulose fibre is found by difference.

5 Reagent

Use the reagents described in ISO 1833-1 together with the following.

© ISO 2018 – All rights reserved