INTERNATIONAL STANDARD

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Textiles — Quantitative chemical analysis —

Part 7: Mixtures of polyamide with certain other fibres (method using formic acid)

Textiles — Analyse chimique quantitative —

Partie 7: Mélanges de polyamide avec certaines autres fibres (méthode à l'acide formique)

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Foreword

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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).

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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*.

This second edition cancels and replaces the first edition (ISO 1833-7:2006), which has been technically revised.

The main changes compared to the previous edition are as follows:

— the title was changed from “Mixtures of polymide **and** certain other fibres...” to “Mixtures of polymide **with** certain other fibres...”;

— in Clause 1, some remaining fibres were added;

— in Clause 8, a specific d-factor for melamine was added;

— in Clause 9, “percentage point” to avoid confusion was added.

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

Textiles — Quantitative chemical analysis —

Part 7:
Mixtures of polyamide with certain other fibres (method using formic acid)

1 Scope

This document specifies a method, using formic acid, to determine the mass percentage of polyamide fibre, after removal of non-fibrous matter, in textiles made of mixtures of

— polyamide

with

— cotton, viscose, cupro, modal, lyocell, polyester, polypropylene, chlorofibre, acrylic, glass fibre, elastomultiester, elastolefin and melamine, or

— wool (if the wool content is less than or equal to 25 %), or animal hair fibres.

This document does not apply when the wool content exceeds 25 %; ISO 1833-4 applies.

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, *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 polyamide is dissolved out from a known dry mass of the mixture, with aqueous formic acid. The residue is collected, washed, dried, and weighed; its mass, corrected if necessary, is expressed as a percentage of the dry mass of the mixture. The percentage of polyamide fibre is found by the difference.

5 Reagents

Use the reagents described in ISO 1833-1 together with those given in 5.1 and 5.2.

5.1 Formic acid, 80 % (mass fraction) (ρ = 1,19 g/ml at 20 °C).

Dilute 880 ml of 90 % (mass fraction) formic acid (ρ = 1,20 g/ml at 20 °C) to 1 l with water. Alternatively, dilute 780 ml of 98 % to 100 % (mass fraction) formic acid (ρ = 1,22 g/ml at 20 °C) to 1 l with water.

The concentration is not critical within the range 77 % to 83 % (mass fraction) formic acid.

5.2 Ammonia, dilute solution.

Dilute 80 ml of concentrated ammonia solution (ρ = 0,88 g/ml at 20 °C) to 1 l with water.

6 Apparatus

Use the apparatus described in ISO 1833-1 together with that given in 6.1.

6.1 Conical flask, minimum capacity 200 ml, glass-stoppered.

7 Test procedure

Follow the general procedure given in ISO 1833-1, and then proceed as follows.

To the specimen contained in the conical flask, add 100 ml of formic acid per gram of specimen. Insert the stopper, shake the flask to wet out the specimen, and allow the flask to stand for 15 min at room temperature, shaking it at intervals.

Filter the contents of the flask through a weighed filter crucible and transfer any residual fibres to the crucible by washing out the flask with a little more formic acid.

Drain the crucible using suction and wash the residue on the filter successively with formic acid, hot water, dilute ammonia solution, and finally cold water, draining the crucible using suction after each addition. Do not apply suction until each washing liquid has drained under gravity.

Finally, drain the crucible using suction, dry the crucible and residue, then cool and weigh them.

8 Calculation and expression of results

Calculate the results as described in the general instructions of ISO 1833-1.

The value of d is 1,00 except for melamine, for which d is 1,01.

9 Precision

On a homogeneous mixture of textile materials, the confidence limits of the results obtained by this method are not greater than ±1 percentage point for the confidence level of 95 %.

Bibliography

[1] ISO 1833-4, *Textiles — Quantitative chemical analysis — Part 4: Mixtures of certain protein fibres with certain other fibres (method using hypochlorite)*

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