

BS EN ISO 1833-7:2010



BSI Standards Publication

Textiles — Quantitative chemical analysis

Part 7: Mixtures of polyamide and certain
other fibres (method using formic acid) (ISO
1833-7:2006)

bsi.

...making excellence a habit.™

National foreword

This British Standard is the UK implementation of EN ISO 1833-7:2010. It is identical to ISO 1833-7:2006. It supersedes BS 4407:1988 which will be withdrawn on publication of the other parts of the BS EN ISO 1833 series.

The UK participation in its preparation was entrusted to Technical Committee TCI/80, Chemical testing of textiles.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

© BSI 2011

ISBN 978 0 580 72128 1

ICS 59.060.01

Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 28 February 2011.

Amendments issued since publication

Date	Text affected
------	---------------

ICS 59.060.01

English Version

Textiles - Quantitative chemical analysis - Part 7: Mixtures of
polyamide and certain other fibres (method using formic acid)
(ISO 1833-7:2006)

Textiles - Analyse chimique quantitative - Partie 7:
Mélanges de polyamide et de certaines autres fibres
(méthode à l'acide formique) (ISO 1833-7:2006)

Textilien - Quantitative chemische Analysen - Teil 7:
Mischungen aus Polyamid- und bestimmten anderen
Fasern (Ameisensäure-Verfahren) (ISO 1833-7:2006)

This European Standard was approved by CEN on 12 September 2010.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: Avenue Marnix 17, B-1000 Brussels

Foreword

The text of ISO 1833-7:2006 has been prepared by Technical Committee ISO/TC 38 "Textiles" of the International Organization for Standardization (ISO) and has been taken over as EN ISO 1833-7:2010 by Technical Committee CEN/TC 248 "Textiles and textile products" the secretariat of which is held by BSI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by April 2011, and conflicting national standards shall be withdrawn at the latest by April 2011.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

Endorsement notice

The text of ISO 1833-7:2006 has been approved by CEN as a EN ISO 1833-7:2010 without any modification.

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 1833-7 was prepared by Technical Committee ISO/TC 38, *Textiles*.

This first edition of ISO 1833-7 cancels and replaces Clause 6 of ISO 1833:1977.

ISO 1833:1977 will be cancelled and replaced by ISO 1833-1, ISO 1833-3, ISO 1833-4, ISO 1833-5, ISO 1833-6, ISO 1833-7, ISO 1833-8, ISO 1833-9, ISO 1833-10, ISO 1833-11, ISO 1833-12, ISO 1833-13, ISO 1833-14, ISO 1833-15, ISO 1833-16, ISO 1833-17, ISO 1833-18 and ISO 1833-19.

ISO 1833 consists of the following parts, under the general title *Textiles — Quantitative chemical analysis*:

- *Part 1: General principles of testing*
- *Part 2: Ternary fibre mixtures*
- *Part 3: Mixtures of acetate and certain other fibres (method using acetone)*
- *Part 4: Mixtures of certain protein and certain other fibres (method using hypochlorite)*
- *Part 5: Mixtures of viscose, cupro or modal and cotton fibres (method using sodium zincate)*
- *Part 7: Mixtures of polyamide and certain other fibres (method using formic acid)*
- *Part 8: Mixtures of acetate and triacetate fibres (method using acetone)*
- *Part 9: Mixtures of acetate and triacetate fibres (method using benzyl alcohol)*
- *Part 10: Mixtures of triacetate or polylactide and certain other fibres (method using dichloromethane)*
- *Part 11: Mixtures of cellulose and polyester fibres (method using sulfuric acid)*
- *Part 12: Mixtures of acrylic, certain modacrylics, certain chlorofibres, certain elastanes and certain other fibres (method using dimethylformamide)*
- *Part 13: Mixtures of certain chlorofibres and certain other fibres (method using carbon disulfide/acetone)*

- *Part 14: Mixtures of acetate and certain chlorofibres (method using acetic acid)*
- *Part 15: Mixtures of jute and certain animal fibres (method by determining nitrogen content)*
- *Part 16: Mixtures of polypropylene fibres and certain other fibres (method using xylene)*
- *Part 17: Mixtures of chlorofibres (homopolymers of vinyl chloride) and certain other fibres (method using sulfuric acid)*
- *Part 18: Mixtures of silk and wool or hair (method using sulfuric acid)*
- *Part 19: Mixtures of cellulose fibres and asbestos (method by heating)*
- *Part 21: Mixtures of chlorofibres, certain modacrylics, certain elastanes, acetates, triacetates and certain other fibres (method using cyclohexanone)*

The following parts are under preparation:

- *Part 6: Mixtures of viscose or certain types of cupro or modal or lyocell and cotton fibres (method using formic acid and zinc chloride)*
- *Part 20: Mixtures of elastane and certain other fibres (method using dimethylacetamide)*
- *Part 22: Mixtures of viscose or certain types of cupro or modal or lyocell and flax fibres (method using formic acid and zinc chlorate)*
- *Part 23: Mixtures of polyethylene and polypropylene (method using cyclohexanone)*
- *Part 24: Mixtures of polyester and some other fibres (method using phenol and tetrachloroethane)*

Textiles — Quantitative chemical analysis —

Part 7:

Mixtures of polyamide and certain other fibres (method using formic acid)

1 Scope

This part of ISO 1833 specifies a method, using formic acid, to determine the percentage of polyamide fibre, after removal of non-fibrous matter, in textiles made of binary mixtures of

— polyamide

and

— cotton, viscose, cupro, modal, polyester, polypropylene, chlorofibre, acrylic or glass fibre.

It is also applicable to mixtures with wool and animal hair, but when the wool content exceeds 25 %, the method described in ISO 1833-4 should be used.

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

3 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.

4 Reagents

Use the reagents described in ISO 1833-1 together with those given in 4.1 and 4.2.

4.1 Formic acid, 80 % (mass fraction) (ρ 1,19 g/ml).

Dilute 880 ml of 90 % (mass fraction) formic acid (ρ 1,20 g/ml) to 1 l with water. Alternatively, dilute 780 ml of 98 % to 100 % (mass fraction) formic acid (ρ 1,22 g/ml) to 1 l with water. The concentration is not critical within the range 77 % to 83 % (mass fraction) formic acid.

NOTE Formic acid at 80 % (mass fraction) has a density $\rho = 1,186$ g/ml.

4.2 Ammonia, dilute solution.

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

5 Apparatus

Use the apparatus described in ISO 1833-1 together with that given in 5.1.

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

6 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, 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 liquor has drained under gravity.

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

7 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.

8 Precision

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

Bibliography

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

British Standards Institution (BSI)

BSI is the national body responsible for preparing British Standards and other standards-related publications, information and services.

BSI is incorporated by Royal Charter. British Standards and other standardization products are published by BSI Standards Limited.

About us

We bring together business, industry, government, consumers, innovators and others to shape their combined experience and expertise into standards-based solutions.

The knowledge embodied in our standards has been carefully assembled in a dependable format and refined through our open consultation process. Organizations of all sizes and across all sectors choose standards to help them achieve their goals.

Information on standards

We can provide you with the knowledge that your organization needs to succeed. Find out more about British Standards by visiting our website at bsigroup.com/standards or contacting our Customer Services team or Knowledge Centre.

Buying standards

You can buy and download PDF versions of BSI publications, including British and adopted European and international standards, through our website at bsigroup.com/shop, where hard copies can also be purchased.

If you need international and foreign standards from other Standards Development Organizations, hard copies can be ordered from our Customer Services team.

Subscriptions

Our range of subscription services are designed to make using standards easier for you. For further information on our subscription products go to bsigroup.com/subscriptions.

With **British Standards Online (BSOL)** you'll have instant access to over 55,000 British and adopted European and international standards from your desktop. It's available 24/7 and is refreshed daily so you'll always be up to date.

You can keep in touch with standards developments and receive substantial discounts on the purchase price of standards, both in single copy and subscription format, by becoming a **BSI Subscribing Member**.

PLUS is an updating service exclusive to BSI Subscribing Members. You will automatically receive the latest hard copy of your standards when they're revised or replaced.

To find out more about becoming a BSI Subscribing Member and the benefits of membership, please visit bsigroup.com/shop.

With a **Multi-User Network Licence (MUNL)** you are able to host standards publications on your intranet. Licences can cover as few or as many users as you wish. With updates supplied as soon as they're available, you can be sure your documentation is current. For further information, email bsmusales@bsigroup.com.

BSI Group Headquarters

389 Chiswick High Road London W4 4AL UK

Revisions

Our British Standards and other publications are updated by amendment or revision.

We continually improve the quality of our products and services to benefit your business. If you find an inaccuracy or ambiguity within a British Standard or other BSI publication please inform the Knowledge Centre.

Copyright

All the data, software and documentation set out in all British Standards and other BSI publications are the property of and copyrighted by BSI, or some person or entity that owns copyright in the information used (such as the international standardization bodies) and has formally licensed such information to BSI for commercial publication and use. Except as permitted under the Copyright, Designs and Patents Act 1988 no extract may be reproduced, stored in a retrieval system or transmitted in any form or by any means – electronic, photocopying, recording or otherwise – without prior written permission from BSI. Details and advice can be obtained from the Copyright & Licensing Department.

Useful Contacts:

Customer Services

Tel: +44 845 086 9001

Email (orders): orders@bsigroup.com

Email (enquiries): cservices@bsigroup.com

Subscriptions

Tel: +44 845 086 9001

Email: subscriptions@bsigroup.com

Knowledge Centre

Tel: +44 20 8996 7004

Email: knowledgecentre@bsigroup.com

Copyright & Licensing

Tel: +44 20 8996 7070

Email: copyright@bsigroup.com



...making excellence a habit.™