# Textiles - Quantitative chemical analysis - Part 2: Ternary fibre mixtures

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

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| Käesolev Eesti standard EVS-EN ISO 1833-2:2010 sisaldab Euroopa standardi EN ISO 1833-2:2010 ingliskeelset teksti. | This Estonian standard EVS-EN ISO 1833-2:2010 consists of the English text of the European standard EN ISO 1833-2:2010. |
| Standard on kinnitatud Eesti Standardikeskuse 31.10.2010 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas. | This standard is ratified with the order of Estonian Centre for Standardisation dated 31.10.2010 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation. |
| Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 13.10.2010. | Date of Availability of the European standard text 13.10.2010. |
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English Version

# Textiles - Quantitative chemical analysis - Part 2: Ternary fibre mixtures (ISO 1833-2:2006)

Textiles - Analyse chimique quantitative - Partie 2: Mélanges ternaires de fibres (ISO 1833-2:2006)

Textilien - Quantitative chemische Analysen - Teil 2: Ternäre Fasermischungen (ISO 1833-2:2006)

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# Foreword

The text of ISO 1833-2:2006 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 1833-2:2010 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of an identical text or by endorsement, at the latest by April 2011, and conflicting national standards shall be withdrawn at the latest by April 2011.

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**Endorsement notice**

The text of ISO 1833-2:2006 has been approved by CEN as a EN ISO 1833-2:2010 without any modification.

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# Introduction

The methods of quantitative analysis of mixtures of textile fibres are based on two processes: the manual separation and the chemical separation of fibre types.

The method of manual separation should be used whenever possible, since it generally gives more accurate results than the chemical method. It can be used for all textiles whose component fibres do not form an intimate mixture, as, for example, in the case of yarns composed of several elements each of which is made up of one type of fibre, or fabrics in which the warp is of a different type of fibre from the weft, or knitted fabrics capable of being unravelled and made up of yarns of different types.

In general, the methods for quantitative chemical analysis of ternary fibre mixtures are based on the selective solution of the individual components of the mixture. Four variants of this procedure are possible.

— Variant 1: Using two different test specimens, component (a) is dissolved from the first test specimen and component (b) from the second test specimen. The insoluble residues of each test specimen are weighed and the percentage of each soluble component is calculated from the respective losses in mass. The percentage of the third component (c) is calculated by difference.

— Variant 2: Using two different test specimens, a component (a) is dissolved from the first test specimen, and two components (a and b) from the second test specimen. The insoluble residue of the first test specimen is weighed and the percentage of the component (a) is calculated from the loss in mass. The insoluble residue of the second test specimen is weighed: it corresponds to component (c). The percentage of the third component (b) is calculated by difference.

— Variant 3: Using two different test specimens, two components (a and b) are dissolved from the first test specimen and two components (b and c) from the second test specimen. The insoluble residues correspond to the two components (c) and (a) respectively. The percentage of the third component (b) is calculated by difference.

— Variant 4: Using only one test specimen, one of the components is removed, after which the insoluble residue formed by the two other fibres is weighed and the percentage of the soluble component is calculated from the loss in mass. One of the two fibres of the residue is dissolved, the insoluble component is weighed and the percentage of the second soluble component is calculated from the loss in mass.

Where a choice is possible, it is advisable to use one of the first three variants. Where chemical analysis is used, take care to choose methods prescribing solvents which dissolve only the required fibre or fibres, and leave undissolved the other fibre or fibres.

By way of example, Annex B contains a certain number of ternary mixtures, together with methods for analysing binary mixtures which can, in principle, be used for analysing these ternary mixtures.

In order to reduce the possibility of error to a minimum, it is recommended that, whenever possible, chemical analysis using at least two of the four above-mentioned variants should be made.

Mixtures of fibres used during processing and, to a lesser extent, in finished textiles may contain non-fibrous matter such as fats, waxes or dressings, or water-soluble matter either occurring naturally or added to facilitate processing. Non-fibrous matter should be removed before analysis. A method of pre-treatment for removing oils, fats, waxes and water-soluble matter is given in ISO 1833-1:2006, Annex A.

In addition, textiles may contain resins or other matter added to confer special properties. Such matter, including dyestuffs in exceptional cases, may interfere with the action of the reagent on the soluble components and/or it may be partially or completely removed by the reagents.

This type of added matter may thus cause errors and should be removed before the sample is analysed. If it is impossible to remove such added matter, the methods for quantitative chemical analysis given in Annex B are no longer applicable.

Dye in dyed fibre is considered to be an integral part of the fibre and is not removed.

Analyses are conducted on the basis of dry mass and a procedure is given for its determination.

The result is expressed by reference to the dry mass or by reference to this mass after application of the conventional recovery rate.

Before proceeding with any analysis, all the fibres present in the mixture should be identified. In some chemical methods, the insoluble components of a mixture may be partially dissolved in the reagent used to dissolve the soluble component or components. Whenever possible, reagents have been chosen that have little or no effect on the insoluble fibres. If a loss in mass is known to occur during the analysis, the result should be corrected; correction factors are given for this purpose. These factors have been determined in several laboratories by treating, with the appropriate reagent as specified in the method of analysis, fibres cleaned by the pre-treatment. These correction factors apply only to undegraded fibres and different correction factors may be necessary if the fibres have been degraded before or during processing. If the fourth variant, in which a textile fibre is subjected to the successive action of two different solvents, should be used, correction factors should be applied for possible losses in mass undergone by the fibre in the two treatments.

At least two determinations should be made, both in the case of manual separation and in the case of chemical separation.

# Textiles — Quantitative chemical analysis —

# Part 2:
# Ternary fibre mixtures



## 1 Scope

This part of ISO 1833 specifies methods of quantitative chemical analysis of various ternary mixtures of fibres.

The field of application of each method for analysing binary mixtures, specified in the parts of ISO 1833, indicates the fibres to which the method is applicable.

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

## 3 Principle

After identification of the components of a mixture, the non-fibrous matter is removed by a suitable pre-treatment, and then one or more of the four variants of the process of selective solution described in the Introduction is applied.

Except where this presents technical difficulties, it is preferable to dissolve the major fibre component so as to obtain the minor fibre component as the final residue.

## 4 Reagents and apparatus

Use the apparatus and reagents described in ISO 1833-1.

## 5 Conditioning and testing atmosphere

See ISO 1833-1.

## 6 Sampling and pre-treatment of sample

See ISO 1833-1.