



Textiles — Binary fibre mixtures — Quantitative chemical analysis

AMENDMENT 1

Amendment 1 to International Standard ISO 1833-1977 was developed by Technical Committee ISO/TC 38, *Textiles*, and was circulated to the member bodies in November 1978.

It has been approved by the member bodies of the following countries :

Australia	Germany, F. R.	Romania
Brazil	Ghana	South Africa, Rep. of
Bulgaria	Hungary	Spain
Canada	India	Sweden
Cyprus	Israel	Switzerland
Czechoslovakia	Japan	Turkey
Denmark	Korea, Rep. of	United Kingdom
Egypt, Arab Rep. of	Mexico	USA
Finland	New Zealand	USSR
France	Poland	Yugoslavia

The member bodies of the following countries expressed disapproval of the document on technical grounds :

Belgium
Italy
Netherlands

Page 6

Sub-clause 5.1 : Add at the end of the sub-clause the following sentences :

"However, for certain types of modal fibre which are difficult to dissolve, it is possible to repeat the procedure modified as described in 5.5. This procedure is not always applicable to mixtures containing cotton which has been mercerised".

Sub-clause 5.3.1 : Replace the first paragraph by the following text :

"5.3.1 Formic acid/zinc chloride. Prepare a solution

containing 20 g of anhydrous (fused) zinc chloride and 68 g of anhydrous formic acid {or the equivalent quantity of aqueous formic acid [85 to 98 % (m/m)]}, made up to 100 g with water.

Attention is drawn to 1.3, as the purity of these reagents is essential in this method."

Sub-clause 5.4.2 : Replace this sentence by the following text :

"5.4.2 Heating apparatus, suitable for maintaining the temperature at $40 \pm 2^\circ\text{C}$ (or $70 \pm 2^\circ\text{C}$ if the high temperature is used)."

Page 7

Sub-clause 5.5 : Add the following text between the third and fourth sentences of the third paragraph :

“(For certain modal fibres for which the procedure is not suitable, repeat the determination using a new specimen but maintain the temperature of the reagent at 70 ± 2 °C for a period of 20 ± 1 min. Rinse with a further 20 ml of

reagent, preheated to 70 °C, and then wash the crucible and residue thoroughly with water also at 70 °C.)”

Sub-clause 5.6 : Add at the end of the sub-clause the following sentence :

“(If the high temperature procedure is used, the value of d is 1,03 for cotton.)”



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FOREWORD

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been set up 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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 1833 was developed by Technical Committee ISO/TC 38, *Textiles*. This second edition has been approved by the member bodies of the following countries :

Australia	Hungary	Portugal
Belgium	India	Romania
Bulgaria	Iran	South Africa, Rep. of
Canada	Israel	Spain
Czechoslovakia	Japan	Sweden
Denmark	Korea, Rep. of	Switzerland
Egypt, Arab Rep. of	Mexico	Turkey
Finland	Netherlands	United Kingdom ²⁾
France	New Zealand	U.S.S.R.
Germany ¹⁾	Norway	Yugoslavia
Greece	Poland	

1) With the exception of sub-clauses 1.4.1 and 1.4.6 and clauses 16 and 17.

2) With the exception of clause 18.

The member body of the following country expressed disapproval of the document on technical grounds :

Italy

This second edition cancels and replaces ISO 1833-1973 as well as Amendment 1 and Addendum 1 to the first edition. It also incorporates Amendment 2 and Addendum 2 which were approved by member bodies in 1977 but not published.

CONTENTS

	Page
0 Introduction.	1
1 Information common to the methods given for the quantitative chemical analysis of binary fibre mixtures	2
2 Mixtures of acetate and certain other fibres	4
3 Mixtures of certain protein and certain other fibres	4
4 Mixtures of viscose or cupro and cotton fibres using sodium zincate	5
5 Mixtures of viscose or certain types of cupro or modal and cotton fibres using formic acid and zinc chloride.	6
6 Mixtures of nylon 6 or nylon 6.6 and certain other fibres	6
7 Mixtures of acetate and triacetate fibres using acetone	7
8 Mixtures of acetate and triacetate fibres using benzyl alcohol.	7
9 Mixtures of triacetate and certain other fibres.	8
10 Mixtures of cellulose and polyester fibres.	8
11 Mixtures of acrylic, certain modacrylics or certain chlorofibres and certain other fibres	9
12 Mixtures of certain chlorofibres and certain other fibres	10
13 Mixtures of acetate and certain chlorofibres	11
14 Mixtures of jute and certain animal fibres.	11
15 Mixtures of polypropylene fibres and certain other fibres	13
16 Mixtures of chlorofibres (homopolymers of vinyl chloride) and certain other fibres	13
17 Mixtures of silk and wool or hair	14
18 Mixtures of cellulose fibres and asbestos	15

Textiles — Binary fibre mixtures — Quantitative chemical analysis

0 INTRODUCTION

In general, the methods described in this International Standard are based on the selective solution of an individual component. After the removal of a component, the insoluble residue is weighed, and the proportion of soluble component is calculated from the loss in mass. The information common to the analyses by this method of all fibre mixtures, whatever their composition, is given in clause 1 of this International Standard. This should be used in conjunction with the succeeding individual clauses of the document which contain the detailed procedures applicable to particular fibre mixtures. Where, occasionally, an analysis is based on a principle other than selective solution, full details are given in the appropriate clause.

Mixtures of fibres during processing and, to a lesser extent, finished textiles may contain fats, waxes or dressings, either occurring naturally or added to facilitate processing. Salts and other water-soluble matter may also be present. Some or all of these substances would be removed during analysis, and calculated as the soluble-fibre component. To avoid this error, non-fibrous matter must be removed before analysis and a method of pre-treatment for removing oils, fats, waxes and water-soluble matter is given in clause 1.

In addition, textiles may contain resins or other matter added to bond the fibres together or to confer special properties, such as water-repellence or crease-resistance. Such matter, including dyestuffs in exceptional cases, may interfere with the action of the reagent on the soluble component and/or it may be partially or completely removed by the reagent. This type of added matter may also cause errors and should be removed before the sample is analysed. If it is impossible to remove such added matter, the methods of analysis are no longer applicable. Dye in dyed fibres is considered to be an integral part of the fibre and is not removed.

Most textile fibres contain water, the amount depending on the type of fibre and on the relative humidity of the surrounding air. Analyses are conducted on the basis of dry

mass, and a procedure for determining the dry mass of test specimens and residues is given in clause 1. The result is therefore obtained on the basis of clean, dry fibres.

Provision is made for recalculating the result on the basis of

- 1) agreed allowances for moisture content ¹⁾,
- 2) agreed allowances for moisture and also for
 - a) fibrous matter removed in the pre-treatment, and
 - b) non-fibrous matter (for example, fibre dressing, processing oil, or size) that can be properly regarded as part of the fibre as an article of commerce.

In some methods, the insoluble component of a mixture may be partially dissolved in the reagent used to dissolve the soluble component. Where possible, reagents have been chosen that have little or no effect on the insoluble fibres. If loss in mass is known to occur during the analysis, the result should be corrected; correction factors for this purpose are given. These correction factors have been determined in several laboratories by treating, in 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 during processing.

The procedures given apply to single determinations; at least two determinations on separate test specimens should be made, but more may be carried out if desired. Before proceeding with any analysis, all the fibres present in the mixture should have been identified. For confirmation, unless it is technically impossible, it is recommended that use be made of alternative procedures whereby the constituent that would be the residue in the standard method is dissolved out first.

If it is practicable to separate the components of a mixture manually, that method should be used in preference to the chemical methods of analysis given in this International Standard.

¹⁾ Suitable values are the official regains, where available, of the respective fibres