
**Textiles — Quantitative chemical
analysis —**

Part 22:

**Mixtures of viscose or certain types
of cupro or modal or lyocell with flax
fibres (method using formic acid and
zinc chloride)**

Textiles — Analyse chimique quantitative —

*Partie 22: Mélanges de viscose ou de certains types de cupro, modal
ou lyocell avec des fibres de lin (méthode à l'acide formique et au
chlorure de zinc)*



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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).

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For an explanation of 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 www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 38, *Textiles*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 248, *Textiles and textile products*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 1833-22:2013), which has been technically revised. The main changes compared to the previous edition are as follows:

- the title has been changed from “Mixtures of viscose or certain types of cupro or modal or lyocell and flax fibres (method using formic acid and zinc chloride)” to “Mixtures of viscose or certain types of cupro or modal or lyocell with flax fibres (method using formic acid and zinc chloride)”;
- the warning has been removed (it is already mentioned in ISO 1833-1);
- [Clause 3](#) (Terms and definitions) has been added and subsequent clauses have been renumbered;
- in [5.2](#) (former 4.2), the sodium hydroxide solution has been removed (as listed in ISO 1833-1:2020);
- in [5.2.1](#), additional instruction in case of the use of zinc chloride other than fused anhydrous zinc chloride has been added;
- in [6.2](#) (former 5.2), the pre-treatment procedure has been replaced with a reference to ISO 1833-1:2020, A.5.25;
- in [5.3.2](#), the heating temperature of 40 °C has been removed and changed to 70 °C;
- in [6.3](#), the testing temperature of 40 °C has been removed and changed to 70 °C, and the neutralisation stage has been detailed;
- in [7.3](#), the d-factors for flax has been updated;
- in [Clause 8](#), “percentage point” has been added to avoid confusion;

- the former informative Annex A, related to proficiency testing results, has been removed as it was based on the former test method setting the testing temperature at 40 °C;
- the Bibliography has been removed.

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

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.

Textiles — Quantitative chemical analysis —

Part 22:

Mixtures of viscose or certain types of cupro or modal or lyocell with flax fibres (method using formic acid and zinc chloride)

1 Scope

This document specifies a method, using formic acid and zinc chloride, to determine the mass percentage of viscose or certain types of cupro or modal or lyocell, after removal of non-fibrous matter, in textiles made of mixtures of

- viscose or certain types of the cupro or modal or lyocell fibres
- with
- flax fibres.

This document is not applicable to mixtures in which the flax fibre has suffered extensive chemical degradation, nor when the viscose, cupro, modal or lyocell fibre is rendered incompletely soluble by the presence of certain permanent finishes or reactive dyes that cannot be removed completely.

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 1833-1:2020, *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

After the removal of the non-cellulosic components (pectin, etc.) related to the flax fibre internal structure by means of pre-treatment with sodium hydroxide, the viscose, cupro or modal or lyocell fibre is dissolved out from a known dry mass of the mixture, with a reagent composed of formic acid and zinc chloride. The residue is collected, washed, dried and weighed; its corrected mass is expressed as a percentage of the dry mass of the mixture. The mass percentage of viscose, cupro, modal or lyocell fibre is found by difference.

If a cupro or modal fibre is found to be present, a preliminary test should be carried out to see whether it is soluble in the reagent.