INTERNATIONAL STANDARD

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Textiles — Quantitative chemical analysis —

Part 16: Mixtures of polypropylene fibres and certain other fibres (method using xylene)

Textiles — Analyse chimique quantitative —

Partie 16: Mélanges de fibres de polypropylène et de certaines autres fibres (méthode au xylène)

Reference number
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Foreword

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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 1833-16 was prepared by Technical Committee ISO/TC 38, *Textiles*.

This first edition of ISO 1833-16 cancels and replaces Clause 15 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 16: Mixtures of polypropylene fibres and certain other fibres (method using xylene)

1 Scope

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

— polypropylene fibres

and

— wool, animal hair, silk, cotton, viscose, cupro, modal, acetate, triacetate, polyamide, polyester, acrylic and glass fibres.

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 polypropylene fibre is dissolved from a known dry mass of the mixture with boiling xylene. 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 polypropylene is found by the difference.

4 Reagents

Use the reagent described in ISO 1833-1 as light petroleum together with that given in 4.1.

4.1 **Xylene**, distilling between 137 °C and 142 °C.

SAFETY PRECAUTIONS — The harmful effects of this reagent shall be borne in mind, and full precautions shall be taken during use.

5 Apparatus

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

5.1 Conical flasks, of minimum capacity 200 ml, glass stoppered.

5.2 Reflux condenser, suitable for liquids of high boiling point, fitting the conical flasks.

6 Test procedure

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

Preheat the filter crucible through which the xylene is to be filtered.

To the specimen contained in the conical flask, add 100 ml of the xylene per gram of specimen. Attach the condenser and boil the contents for 3 min. Decant the hot liquid through the weighed filter crucible.

Repeat this treatment twice more, each time using a fresh 50 ml portion of solvent.

Wash the residue remaining in the flask with 30 ml of boiling xylene (twice).

After the treatment with boiling xylene, ensure that the flask containing the residue is cooled sufficiently before the light petroleum is introduced.

Then wash the residue remaining in the flask with 75 ml of the light petroleum (twice).

After the second wash with light petroleum, filter the residue through the filter crucible and allow it to drain.

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

NOTE Hot extraction apparatus, using the appropriate procedures, giving identical results, may be used.[1)]

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

For homogeneous mixtures of textile materials, the confidence limits of results obtained by this method are not greater than $\pm$ 1 for the confidence level of 95 %.

1) See, for example, the apparatus described in Melliand Textilberichte 56 (1975), pp. 643-645.

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