INTERNATIONAL STANDARD

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Textiles — Quantitative chemical analysis —

Part 20: Mixtures of elastane and certain other fibres (method using dimethylacetamide)

Textiles — Analyse chimique quantitative —

Partie 20: Mélanges d'élasthanne et de certaines autres fibres (méthode à la diméthylacétamide)

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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.

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 1833-20 was prepared by Technical Committee ISO/TC 38, *Textiles*.

This first edition, together with ISO 1833-1 to ISO 1833-19 and ISO 1833-21 to ISO 1833-24, cancels and replaces ISO 1833:1977, which has been technically revised.

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

— *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 20: Mixtures of elastane and certain other fibres (method using dimethylacetamide)*

— *Part 21: Mixtures of chlorofibres, certain modacrylics, certain elastanes, acetates, triacetates and certain other fibres (method using cyclohexanone)*

— *Part 24: Mixtures of polyester and certain other fibres (method using phenol and tetrachloroethane)*

The following parts are under preparation:

— *Part 22: Mixtures of viscose or certain types of cupro or modal or lyocell and flax fibres (method using formic acid and zinc chloride)*

— *Part 25: Mixtures of polyester and some other fibres (method using trichloracetic acid and chloroform)*

Part 23 of ISO 1833, *Mixtures of polyethylene and polypropylene (method using cyclohexanone)* was withdrawn by Technical Committee ISO/TC 38.

Textiles — Quantitative chemical analysis —

Part 20: Mixtures of elastane and certain other fibres (method using dimethylacetamide)

WARNING — This part of ISO 1833 calls for the use of substances/procedures that may be injurious to the health/environment if appropriate conditions are not observed. It refers only to technical suitability and does not absolve the user from legal obligations relating to health and safety/environment at any stage.

1 Scope

This part of ISO 1833 specifies a method using dimethylacetamide to determine the percentage of elastane, after removal of non-fibrous matter, in textiles made of binary mixtures of certain elastane fibres with cotton, viscose, cupro, modal, polyamide, polyester or wool fibres.

This method is not applicable when acrylic fibres are present.

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

The elastane fibre is dissolved out from a known dry mass of the mixture with dimethylacetamide (DMA). 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 elastane is found by difference.

4 Reagents

Use the reagents described in ISO 1833-1, together with that specified in 4.1.

4.1 Dimethylacetamide (DMA)

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 items of apparatus described in ISO 1833-1, together with those described in 5.1 and 5.2.

5.1 Conical flask, of minimum capacity 250 ml, glass stoppered.

5.2 Heating apparatus, suitable for maintaining the temperature of the flask within the limits 60 °C to 65 °C.

6 Test procedure

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

Place the specimen in the conical flask.

Add 150 ml of DMA per gram of specimen.

Shake to wet the specimen.

Leave it for at least for 30 min in the double boiler at 60 °C, shaking at intervals.

Filter the contents of the conical flask through the weighted filter crucible (6.1 in ISO 1833-1:2006) and transfer any residual fibres to the crucible by washing out the conical flask with DMA.

Drain the crucible using suction and wash with water. Do not apply suction until the washing liquor has drained under gravity.

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

7 Calculation and expression of results

Calculate the results as described in the instructions in Clause 10 of ISO 1833-1:2006.

The value of d (correction factor of variation in mass of the insoluble component in the reagent) is 1,00, except for wool, for which d is 1,01; and for cotton, for which d is 1,02.

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 a confidence level of 95 %.

Bibliography

[1] ISO 2076, *Textiles — Man-made fibres — Generic names*

[2] ISO 6938, *Textiles — Natural fibres — Generic names and definitions*

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