INTERNATIONAL STANDARD

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Textiles — Quantitative chemical analysis —

Part 13: Mixtures of certain chlorofibres and certain other fibres (method using carbon disulfide/acetone)

Textiles — Analyse chimique quantitative —

Partie 13: Mélanges de certaines chlorofibres et de certaines autres fibres (méthode au sulfure de carbone/acétone)

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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 1833-13 was prepared by Technical Committee ISO/TC 38, *Textiles*.

This first edition of ISO 1833-13 cancels and replaces Clause 12 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 13: Mixtures of certain chlorofibres and certain other fibres (method using carbon disulfide/acetone)

1 Scope

This part of ISO 1833 specifies a method, using carbon disulfide/acetone, to determine the percentage of chlorofibre, after removal of non-fibrous matter, in textiles made of mixtures of

— certain chlorofibres, whether after-chlorinated or not,

and

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

When the wool or silk content of a mixture exceeds 25 %, the method described in ISO 1833-4 should be used.

When the polyamide content of a mixture exceeds 25 %, the method described in ISO 1833-7 should be used.

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 chlorofibre is dissolved out from a known dry mass of the mixture, with the azeotropic mixture of carbon disulfide and acetone. 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 chlorofibre is found by the difference.

4 Reagents

Use the reagents described in ISO 1833-1 together with those given in 4.1 and 4.2.

4.1 Azeotropic mixture of carbon disulfide and acetone.

Mix 555 ml of carbon disulfide with 445 ml of acetone.

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

4.2 Ethanol.

5 Apparatus

Use the apparatus described in ISO 1833-1 together with those given in 5.1, 5.2 and 5.3.

5.1 Conical flask, minimum capacity 200 ml, glass-stoppered.

5.2 Mechanical shaker.

5.3 Small watch-glass.

6 Test procedure

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

To the specimen contained in the conical flask, add 100 ml of carbon disulfide/acetone reagent per gram of specimen. Stopper the flask tightly and shake the flask on the mechanical shaker for 20 min, loosening the stopper once or twice at the beginning of the process to release any excess pressure.

Decant the supernatant liquid through the weighed filter crucible.

Repeat the treatment with a further 100 ml of fresh reagent.

Continue with this cycle of processes until a drop of the extraction liquid leaves no deposit of chlorofibre on evaporation from a watch-glass.

Transfer the residue from the flask to the filter crucible using more reagent, drain using suction, and wash the crucible and residue three times with 20 ml alcohol and then three times with water. Do not apply suction until each washing liquor has drained under gravity.

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

NOTE With certain mixtures having a high chlorofibre content, there may be substantial shrinkage of the specimen during the drying procedure, as a result of which the dissolution of chlorofibre by the solvent is retarded. This does not, however, affect the ultimate dissolution of the chlorofibre by the solvent.

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

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

Bibliography

[1] ISO 1833-4, *Textiles — Quantitative chemical analysis — Part 4: Mixtures of certain protein and certain other fibres (method using hypochlorite)*

[2] ISO 1833-7, *Textiles — Quantitative chemical analysis — Part 7: Mixtures of polyamide and certain other fibres (method using formic acid)*

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