INTERNATIONAL STANDARD

ISO 1833-26

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Textiles — Quantitative chemical analysis —

Part 26: Mixtures of melamine and cotton or aramide fibres (method using hot formic acid)

Textiles — Analyse chimique quantitative —
Partie 26: Mélanges de fibres de mélamine et de fibres de coton ou d'aramide (méthode à l'acide formique chaud)

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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 1833-26 was prepared by Technical Committee ISO/TC 38, *Textiles*.

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

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

— *Part 25: Mixtures of polyester and cotton or aramid fibres (method using trichloracetic acid and chloroform)*

— *Part 26: Mixtures of melamine and cotton or aramid fibres (method using hot formic acid)*

The following part is cancelled:

— *Part 23: Mixtures of polyethylene and polypropylene (method using cyclohexanone)*

Textiles — Quantitative chemical analysis —

Part 26: Mixtures of melamine and cotton or aramide fibres (method using hot formic acid)

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 hot formic acid to determine the percentage of melamine fibres after removal of non-fibrous matter, in textiles made of binary mixtures of melamine fibres with cotton or aramid 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 melamine fibre is dissolved out from a known dry mass of the mixture with hot formic acid (90 % by mass). 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 the second constituent is obtained by difference.

4 Reagents

4.1 General

Use the reagents described in ISO 1833-1, together with those specified in 4.2 and 4.3.

4.2 **Formic acid** (90 % mass fraction, relative density at 20 °C: 1,204 g/ml)

Dilute 890 ml of 98 to 100 % mass fraction formic acid (relative density at 20 °C: 1,220 g/ml) to 1 l with water.

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

4.3 **Ammonia**, dilute solution

Dilute 80 ml of concentrated ammonia solution (relative density at 20 °C: 0,880 g/ml) to 1 l with water.

5 Apparatus

5.1 General

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

5.2 Conical flask, of minimum capacity of 200 ml, glass stopper.

5.3 Shaking water bath, or other apparatus, having a reciprocating or circularly platform at a frequency of about 160 cycles per minute (respectively 160 "to-and-fro" per min or 160 rpm), and maintain the flask (5.2) at (90 ± 2) °C.

6 Test procedure

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

6.1 Place the specimen in the conical flask.

6.2 Add 100 ml of formic acid reagent per gram of specimen.

6.3 Insert the stopper and shake the flask to wet out the specimen.

6.4 Maintain the flask in a shaking water bath (5.3) at (90 ± 2) °C for one hour, shaking it vigorously.

NOTE The solubility of melamine is very much dependent on the temperature.

6.5 Cool the flask to room temperature.

6.6 Decant the liquid through the weighed filter crucible.

6.7 Add further 50 ml of formic acid reagent to the flask containing the residue, shake manually and filter the contents of the flask through the filter crucible.

6.8 Transfer any residual fibres to the crucible by washing out the flask with a little more formic acid reagent.

6.9 Drain the crucible with suction and wash the residue with formic acid reagent, hot water, dilute ammonia solution, and finally cold water, draining the crucible with suction after each addition.

6.10 Do not apply suction until each washing liquor has drained under gravity.

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

7 Calculation and expression of results

Calculate the results as described in the general instructions of ISO 1833-1.

The value of the correction factor of variation in mass of insoluble component in the reagent (d) is 1,02.

8 Precision

On a homogeneous mixture of textile materials, the confidence limits of results obtained by this method are not greater than ± 2 for the confidence level of 95 %.

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Price based on 2 pages