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I

(Acts whose publication is obligatory)

DIRECTIVE 96/73/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL
of 16 December 1996
on certain methods for the quantitative analysis of binary textile fibre mixtures

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF
THE EUROPEAN UNION,

Having regard to the Treaty establishing the European
Community, and in particular Article 100a thereof,

Having regard to the proposal from the Commission ⁽¹⁾,

Having regard to the opinion of the Economic and Social
Committee ⁽²⁾,

Acting in accordance with the procedure laid down in
Article 189b of the Treaty ⁽³⁾,

Whereas Council Directive 72/276/EEC of 17 July 1972
on the approximation of the laws of the Member States
relating to certain methods for the quantitative analysis
of binary textile fibre mixtures ⁽⁴⁾ has been amended
frequently and substantially; whereas, for reasons of
clarity and rationality, the said Directive should be
consolidated;

Whereas Directive 96/74/EC of the European Parliament
and of the Council of 16 December 1996 on textile
names ⁽⁵⁾ requires labelling to indicate the fibre
composition of textile products, with checks being carried
out by analysis on the conformity of these products with
the indications given on the label;

Whereas the methods used for official tests carried out in
the Member States to determine the fibre composition of
textile products should be uniform, as regards both the
pre-treatment of the sample and its quantitative
analysis;

Whereas Directive 96/74/EC provides that the methods
for sampling and analysis to be used in the Member
States for the purpose of determining the fibre
composition of products will be specified in separate
directives; whereas therefore Annex II to this Directive
lays down 15 uniform methods of analysis for most of
the textile products composed of binary mixtures that are
on the market;

Whereas technical progress necessitates frequent
adaptation of the technical specifications defined by the
separate directives on methods of textile analysis;
whereas, in order to facilitate the implementation of the
measures required to that effect, a procedure should be
laid down establishing, within the Committee for
Directives relating to Textile Names and Labelling, close
cooperation between Member States and the
Commission;

Whereas, in the case of binary mixtures for which there is
no uniform method of analysis at Community level, the
laboratory responsible for the test may determine the
composition of such mixtures using any valid method at
its disposal, indicating in the analysis report the result
obtained and, in so far as this is known, the degree of
accuracy of the method used;

Whereas the provisions of this Directive are in
accordance with the opinion of the Committee for
Directives relating to Textile Names and Labelling;

Whereas this Directive must not affect the obligations of
the Member States concerning the time limits for
transposition of the Directives set out in Annex III,
part B,

⁽¹⁾ OJ No C 96, 6. 4. 1994, p. 20.

⁽²⁾ OJ No C 195, 18. 7. 1994, p. 20.

⁽³⁾ Opinion of the European Parliament of 15 February 1995
(OJ No C 56, 6. 3. 1995, p. 53), Council common position
of 26 February 1996 (OJ No C 196, 6. 7. 1996, p. 20) and
Decision of the European Parliament of 18 June 1996 (OJ
No C 198, 8. 7. 1996, p. 25), Council Decision of 7 October
1996.

⁽⁴⁾ OJ No L 173, 31. 7. 1972, p. 1. Directive as last amended
by Directive 87/184/EEC (OJ No L 75, 17. 3. 1987, p. 21).

⁽⁵⁾ See p. 38 of this Official Journal.

HAVE ADOPTED THIS DIRECTIVE:

Article 1

This Directive concerns methods for the quantitative analysis of certain binary textile fibre mixtures, including the preparation of test samples and test specimens.

Article 2

'Test sample' means a sample of a suitable size for analysis, taken from laboratory bulk samples in turn taken from a batch of articles for analysis.

'Test specimen' means that part of the test sample required to give an individual test result.

Article 3

Member States shall take all necessary steps to ensure that, in accordance with Directive 96/74/EC, the provisions in Annexes I and II on methods for the quantitative analysis of certain binary textile fibre mixtures, including the preparation of test samples and test specimens, are applied in all official tests to determine the composition of textile products put on the market.

Article 4

Any laboratory responsible for the testing of binary mixtures for which there is no uniform method of analysis at Community level shall determine the composition of such mixtures by using any valid method at its disposal, indicating in the analysis report the result obtained and, in so far as this is known, the degree of accuracy of the method used.

Article 5

1. A Committee for Directives relating to Textile Names and Labelling, hereinafter called 'the Committee', is hereby set up; it shall consist of representatives of the Member States with a representative of the Commission as chairman.

2. The Committee shall adopt its own rules of procedure.

3. Adaptations to technical progress in the methods of quantitative analysis provided for in Annex II shall be made in accordance with the procedure laid down in Article 6.

Article 6

1. Where the procedure laid down in this Article is invoked, matters shall be referred to the Committee by its chairman, either on his own initiative or at the request of the representative of a Member State.

2. The representative of the Commission shall submit to the Committee a draft of the measures to be taken. The Committee shall deliver its opinion on the draft within a time limit which the chairman may lay down according to the urgency of the matter. The opinion shall be delivered by the majority laid down in Article 148 (2) of the Treaty in the case of decisions which the Council is required to adopt on a proposal from the Commission. The votes of the representatives of the Member States within the Committee shall be weighted in the manner set out in that Article. The chairman shall not vote.

3. (a) The Commission shall adopt the measures envisaged where they are in accordance with the opinion of the Committee.

(b) Where the measures envisaged are not in accordance with the opinion of the Committee, or if no opinion is delivered, the Commission shall without delay propose to the Council the measures to be adopted.

The Council shall act by a qualified majority.

(c) If, within three months of the proposal being submitted to it, the Council has not acted, the proposed measures shall be adopted by the Commission.

Article 7

Member States shall communicate to the Commission the texts of the main provisions of national law which they adopt in the field covered by this Directive.

Article 8

The Directives listed in Annex III, part A, are hereby repealed, without prejudice to the obligations of the Member States concerning the time limits for transposition set out in Annex III, part B.

References to the repealed Directives shall be construed as references to this Directive and should be read in accordance with the correlation table set out in Annex IV.

Article 9

This Directive is addressed to the Member States.

This Directive shall enter into force on the 20th day following that of its publication in the *Official Journal of the European Communities*.

Done at Brussels, 16 December 1996.

For the European Parliament

The President

K. HÄNSCH

For the Council

The President

I. YATES

ANNEX I

PREPARATION OF TEST SAMPLES AND TEST SPECIMENS TO DETERMINE THE FIBRE COMPOSITION OF TEXTILE PRODUCTS

1. FIELD OF APPLICATION

This Annex gives procedures for obtaining laboratory test samples of a suitable size for pre-treatment for quantitative analysis (i.e. of a mass not exceeding 100 g) from laboratory bulk samples, and for selecting test specimens from the laboratory test samples that have been pre-treated to remove non-fibrous matter ⁽¹⁾.

2. DEFINITIONS

- 2.1. Bulk source — That quantity of material which is judged on the basis of one series of test results. This may comprise, for example, all the material in one delivery of cloth; all the cloth woven from a particular beam; a consignment of yarn, a bale or a group of bales of raw fibre.
- 2.2. Laboratory bulk sample — That portion of the bulk source taken to be representative of the whole, and which is available to the laboratory. The size and nature of the laboratory bulk sample should be sufficient to overcome adequately the variability of the bulk source and to facilitate ease of handling in the laboratory ⁽²⁾.
- 2.3. Laboratory test sample — That portion of the laboratory bulk sample that is subjected to pre-treatment to remove non-fibrous matter, and from which test specimens are taken. The size and nature of the laboratory test sample should be sufficient to overcome adequately the variability of the laboratory bulk sample ⁽³⁾.
- 2.4. Test specimen — The portion of material required to give an individual test result, and selected from the laboratory test sample.

3. PRINCIPLE

The laboratory test sample is selected so that it is representative of the laboratory bulk sample.

The test specimens are taken from the laboratory test sample in such a way that each of them is representative of the laboratory test sample.

4. SAMPLING FROM LOOSE FIBRES

- 4.1. Unorientated fibres — Obtain the laboratory test sample by selecting at random tufts from the laboratory bulk sample. Mix thoroughly the whole of the laboratory test sample by means of a laboratory carder ⁽⁴⁾. Subject the web or mixture, including loose fibres and fibres adhering to the equipment used for mixing, to pre-treatment. Then select test specimens, in proportion to the respective masses, from the web or mixture, from the loose fibres and from the fibres adhering to the equipment.

If the card web remains intact after pre-treatment, select the test specimens in the manner described in 4.2. If the card web is disturbed by the pre-treatment, select each test specimen by removing at random at least 16 small tufts of suitable and approximately equal size and then combine them.

- 4.2. Orientated fibres (cards, webs, slivers, rovings) — From randomly selected parts of the laboratory bulk sample cut not less than 10 cross-sections each of mass approximately 1 g. Subject the laboratory test sample so formed to the pre-treatment. Recombine the cross-sections by laying them side by side and obtain the test specimen by cutting through them so as to take a portion of each of the 10 lengths.

5. SAMPLING YARN

- 5.1. Yarn in packages or in banks — Sample all the packages in the bulk laboratory sample.

⁽¹⁾ In some cases it is necessary to pre-treat the individual test specimen.

⁽²⁾ For made-up and finished articles see Section 7.

⁽³⁾ See point 1.

⁽⁴⁾ The laboratory carder may be replaced by a fibre blender, or the fibres may be mixed by the method of 'tufts and rejects'.

Withdraw the appropriate continuous equal lengths from each package either by winding skeins of the same number of turns on a wrap-reel ⁽¹⁾, or by some other means. Unite the lengths side by side either as a single skein or as a tow to form the laboratory test sample, ensuring that there are equal lengths from each package in the skein or tow.

Subject the laboratory test sample to the pre-treatment.

Take test specimens from the laboratory test sample by cutting a bunch of threads of equal length from the skein or tow, taking care to see that the bunch contains all the threads in the sample.

If the tex of the yarn is t and the number of packages selected from the laboratory bulk sample is n , then to obtain a test sample of 10 g, the length of yarn to be withdrawn from each package is $\frac{10^6}{Nt}$ cm.

If nt is high, i.e. more than 2 000, wind a heavier skein and cut it across in two places to make a tow of suitable mass. The ends of any sample in the form of a tow should be securely tied before pre-treatment and test specimens taken from a place remote from the tie bands.

- 5.2. Yarn on warp — Take the laboratory test sample by cutting a length from the end of the warp, not less than 20 cm long and comprising all the yarns in the warp except the selvedge yarns, which are rejected. Tie the bunch of threads together near one end. If the sample is too large for pre-treatment as a whole divide it into two or more portions, each tied together for pre-treatment, and reunite the portions after each has been pre-treated separately. Take a test specimen by cutting a suitable length from the laboratory test sample from the end remote from the tie band, and comprising all the threads in the warp. For warp of N threads of tex t , the length of a specimen of mass 1 g is $\frac{10^5}{Nt}$ cm.

6. SAMPLING FABRIC

- 6.1. From a laboratory bulk sample consisting of a single cutting representative of the cloth

— Cut a diagonal strip from one corner to the other and remove the selvages. This strip is the laboratory test sample. To obtain a laboratory test sample of x g, the strip area shall be $\frac{x \cdot 10^4}{G}$ cm², where G is the mass of the cloth in g/m².

Subject the laboratory test sample to the pre-treatment and then cut the strip transversely into four equal lengths and superimpose them.

Take test specimens from any part of the layered material by cutting through all the layers so that each specimen contains an equal length of each layer.

If the fabric has a woven design, make the width of the laboratory test sample, measured parallel to the warp direction, not less than one warp repeat of the design. If, with this condition satisfied, the laboratory test sample is too large to be treated as a whole, cut it into equal parts, pre-treat them separately, and superimpose these parts before selection of the test specimen, taking care that corresponding parts of the design do not coincide.

- 6.2. From a laboratory bulk sample consisting of several cuttings

— Treat each cutting as described in 6.1, and give each result separately.

7. SAMPLING MADE-UP AND FINISHED ARTICLES

The bulk laboratory sample is normally a complete made-up or finished article or representative fraction of one.

Where appropriate determine the percentage of the various parts of the article not having the same fibre content, in order to check compliance with Article 9 of Directive 96/74/EC of the European Parliament and of the Council of 16 December 1996 on textile names.

⁽¹⁾ If the packages can be mounted in a convenient creel a number can be wound simultaneously.

Select a laboratory test sample representative of the part of the made-up or finished article, whose composition must be shown by the label. If the article has several labels, select laboratory test samples representative of each part corresponding to a given label.

If the article whose composition is to be determined is not uniform, it may be necessary to select laboratory test samples from each of the parts of the article and to determine the relative proportions of the various parts in relation to the whole article in question.

Then calculate the percentages taking into account the relative proportions of the sampled parts.

Subject the laboratory test samples to the pre-treatment.

Then select test specimens representative of the pre-treated laboratory test samples.

ANNEX II

METHODS FOR QUANTITATIVE ANALYSIS OF CERTAIN BINARY FIBRE MIXTURES

1. GENERAL

Introduction

Methods for the quantitative analysis of fibre mixtures are based on two main processes, the manual separation and the chemical separation of fibres.

The method of manual separation should be used whenever possible since it generally gives more accurate results than the chemical method. It can be used for all textiles whose component fibres do not form an intimate mixture, as for example in the case of yarns composed of several elements each of which is made up of only one type of fibre, or fabrics in which the fibre of the warp is of a different kind to that of the weft, or knitted fabrics capable of being unravelled made up of yarns of different types.

In general, the methods of chemical quantitative analysis are based on the selective solution of the individual components. After the removal of a component the insoluble residue is weighed, and the proportion of the soluble component is calculated from the loss in mass. This first part of the Annex gives the information common to the analyses by this method of all fibre mixtures dealt with in the Annex, whatever their composition. It should thus be used in conjunction with the succeeding individual sections of the Annex, which contain the detailed procedures applicable to particular fibre mixtures. Occasionally, an analysis is based on a principle other than selective solution; in such cases full details are given in the appropriate section.

Mixtures of fibres during processing and, to a lesser extent, finished textiles may contain non-fibrous matter, such as fats, waxes or dressings, or water-soluble matter, either occurring naturally or added to facilitate processing. Non-fibrous matter must be removed before analysis. For this reason a method for removing oils, fats, waxes and water-soluble matter is also given.

In addition, textiles may contain resins or other matter added to confer special properties. Such matter, including dyestuffs in exceptional cases, may interfere with the action of the reagent on the soluble component and/or it may be partially or completely removed by the reagent. This type of added matter may thus cause errors and should be removed before the sample is analysed. If it is impossible to remove such added matter the methods for quantitative chemical analysis given in this Annex are no longer applicable.

Dye in dyed fabrics is considered to be an integral part of the fibre and is not removed.

Analyses are conducted on the basis of dry mass and a procedure is given for determining dry mass.

The result is obtained by applying to the dry mass of each fibre the agreed allowances listed in Annex II to Directive 96/74/EC of the European Parliament and of the Council of 16 December 1996 on textile names.

Before proceeding with any analysis, all the fibres present in the mixture should have been identified. In some methods, the insoluble component of a mixture may be partially dissolved in the reagent used to dissolve the soluble component. Where possible, reagents have been chosen that have little or no effect on the insoluble fibres. If loss in mass is known to occur during the analysis, the result should be corrected; correction factors for this purpose are given. These factors have been determined in several laboratories by treating, with the appropriate reagent as specified in the method of analysis, fibres cleaned by the pre-treatment. These correction factors apply only to undegraded fibres and different correction factors may be necessary if the fibres have been degraded before or during processing. The procedures given apply to single determinations. At least two determinations on separate test specimens should be made, both in the case of manual separation and in the case of chemical separation. For confirmation, unless technically impossible, it is recommended to use alternative procedures whereby the constituent that was the residue in the standard method is dissolved out first.

I. GENERAL INFORMATION ON METHODS FOR THE QUANTITATIVE CHEMICAL ANALYSIS OF TEXTILE FIBRE MIXTURES

Information common to the methods given for the quantitative chemical analysis of fibre mixtures.

I.1. Scope and field of application

The field of application for each method specifies to which fibres the method is applicable.

I.2. Principle

After the identification of the components of a mixture, the non-fibrous material is removed by suitable pre-treatment and then one of the components, usually by selective solution ⁽¹⁾. The insoluble residue is weighed and the proportion of soluble component calculated from the loss in mass. Except where this presents technical difficulties, it is preferable to dissolve the fibre present in the greater proportion, thus obtaining the fibre present in the smaller proportion as residue.

I.3. Materials and equipment**I.3.1. Apparatus**

I.3.1.1. Filter crucibles and weighing bottles large enough to contain such crucibles, or any other apparatus giving identical results.

I.3.1.2. Vacuum flask.

I.3.1.3. Desiccator containing self-indicating silica gel.

I.3.1.4. Ventilated oven for drying specimens at $150^{\circ} \pm 3^{\circ}\text{C}$.

I.3.1.5. Analytical balance, accurate to 0,0002 g.

I.3.1.6. Soxhlet extractor or other apparatus giving identical results.

I.3.2. Reagents

I.3.2.1. Light petroleum, redistilled, boiling range 40 to 60 °C.

I.3.2.2. Other reagents are specified in the appropriate sections of each method. All reagents used should be chemically pure.

I.3.2.3. Distilled or deionized water.

I.4. Conditioning and testing atmosphere

Because dry masses are determined, it is unnecessary to condition the specimen or to conduct analyses in a conditioned atmosphere.

I.5. Laboratory test sample

Take a laboratory test sample that is representative of the laboratory bulk sample and sufficient to provide all the specimens, each of at least 1 g, that are required.

I.6. Pre-treatment of laboratory test sample ⁽²⁾

Where a substance not to be taken into account in the percentage calculations (see Article 12 (3)), of Directive 96/74/EC of the European Parliament and of the Council of 16 December 1996 on textile names is present, it should first be removed by a suitable method that does not affect any of the fibre constituents.

For this purpose, non-fibrous matter which can be extracted with light petroleum and water is removed by treating the air-dry test sample in a Soxhlet extractor with light petroleum for one hour at a minimum rate of six cycles per hour. Allow the light petroleum to evaporate from the

⁽¹⁾ Method 12 is an exception. It is based on a determination of the content of a constituent substance of one of the two components.

⁽²⁾ See Annex I.1.

sample, which is then extracted by direct treatment consisting in soaking the specimen in water at room temperature for one hour and then soaking it in water at 65 ± 5 °C for a further hour, agitating the liquor from time to time. Use a liquor:specimen ratio of 100:1. Remove the excess water from the sample by squeezing, suction, or centrifuging and then allow the sample to become air-dry.

Where non-fibrous matter cannot be extracted with light petroleum and water, it should be removed by substituting for the water method described above a suitable method that does not substantially alter any of the fibre constituents. However, for some unbleached, natural vegetable fibres (e.g. jute, coir) it is to be noted that normal pre-treatment with light petroleum and water does not remove all the natural non-fibrous substances; nevertheless additional pre-treatment is not applied unless the sample does contain finishes insoluble in both light petroleum and water.

Analysis reports should include full details of the methods of pre-treatment used.

1.7. Test procedure

1.7.1. General instructions

1.7.1.1. Drying

Conduct all drying operations for not less than four hours and not more than 16 hours at 105 ± 3 °C in a ventilated oven with the oven door closed throughout. If the drying period is less than 14 hours, the specimen must be weighed to check that its mass has become constant. The mass may be considered to have become constant if, after a further drying period of 60 minutes, its variation is less than 0,05 %.

Avoid handling crucibles and weighing bottles, specimens or residues with bare hands during the drying, cooling and weighing operations.

Dry specimens in a weighing bottle with its cover beside it. After drying, stopper the weighing bottle before removing it from the oven, and transfer it quickly to the desiccator.

Dry the filter crucible in a weighing bottle with its cover beside it in the oven. After drying, close the weighing bottle and transfer it quickly to the desiccator.

Where apparatus other than a filter crucible is used, drying operations in the oven should be conducted in such a way as to enable the dry mass of the fibres to be determined without loss.

1.7.1.2. Cooling

Conduct all cooling operations in the desiccator the latter placed beside the balance, until complete cooling of the weighing bottles is attained, and in any case for not less than two hours.

1.7.1.3. Weighing

After cooling, complete the weighing of the weighing bottle within two minutes of its removal from the desiccator. Weigh to an accuracy of 0,0002 g.

1.7.2. Procedure

Take from the pre-treated laboratory test sample a test specimen weighing at least 1 g. Cut yarn or cloth into lengths of about 10 mm, dissected as much as possible. Dry the specimen in a weighing bottle, cool it in the desiccator and weigh it. Transfer the specimen to the glass vessel specified in the appropriate section of the relevant Community method, reweigh the weighing bottle immediately and obtain the dry mass of the specimen by difference. Complete the test as specified in the appropriate section of the applicable method. Examine the residue microscopically to check that the treatment has in fact completely removed the soluble fibre.

1.8. Calculation and expression of results

Express the mass of the insoluble component as a percentage of the total mass of fibre in the mixture. The percentage of soluble component is obtained by difference. Calculate the results on the basis of clean, dry mass, adjusted by (a) the agreed allowances and (b) the correction factors necessary to take account of loss of matter during pre-treatment and analysis. Calculations should be made by applying the formula given in 1.8.2.

- I.8.1. Calculation of percentage of insoluble component on clean, dry mass basis, disregarding loss of fibre mass during pre-treatment.

$$P_1 \% = \frac{100 \text{ rd}}{m}$$

where

P_1 is the percentage of clean, dry insoluble component

m is the dry mass of the specimen after pre-treatment

r is the dry mass of the residue

d is the correction factor for loss of mass of the insoluble component in the reagent during the analysis. Suitable values of 'd' are given in the appropriate section of each method.

Such values of 'd' are of course the normal values applicable to chemically undegraded fibres.

- I.8.2. Calculation of percentage of insoluble component on clean, dry mass basis, with adjustment by conventional factors and, where appropriate, correction factors for loss of mass during pre-treatment.

$$P_{1A} \% = \frac{100 P_1 \left(1 + \frac{a_1 + b_1}{100} \right)}{P_1 \left(1 + \frac{a_1 + b_1}{100} \right) + (100 - P_1) \left(1 + \frac{a_2 + b_2}{100} \right)}$$

where

P_{1A} is the percentage of insoluble component, adjusted by agreed allowances and for loss of mass during pre-treatment

P_1 is the percentage of clean, dry insoluble component as calculated from the formula shown in I.8.1.

a_1 is the agreed allowance for the insoluble component (see Annex II to the Directive on textile names)

a_2 is the agreed allowance for the soluble component (see Annex II to the Directive on textile names)

b_1 is the percentage loss of insoluble component caused by the pre-treatment

b_2 is the percentage loss of soluble component caused by the pre-treatment

The percentage of the second component ($P_{2A} \%$) is equal to $100 - P_{1A} \%$.

Where a special pre-treatment has been used, the values of b_1 and b_2 should be determined, if possible, by submitting each of the pure fibre constituents to the pre-treatment applied in the analysis. Pure fibres are those free from all non-fibrous material except that which they normally contain (either naturally or because of the manufacturing process), in the state (unbleached, bleached) in which they are found in the material to be analysed.

Where no clean separate constituent fibres used in the manufacture of the material to be analysed are available, average values of b_1 and b_2 as obtained from tests performed on clean fibres similar to those in the mixture under examination, should be used.

If normal pre-treatment by extraction with light petroleum and water is applied, correction factors b_1 and b_2 may generally be ignored, except in the case of unbleached cotton, unbleached flax and unbleached hemp, where the loss due to the pre-treatment is conventionally taken as 4 %, and in the case of polypropylene, where it is taken as 1 %.

In the case of other fibres, losses due to the pre-treatment are conventionally disregarded in calculations.

II. METHOD OF QUANTITATIVE ANALYSIS BY MANUAL SEPARATION**II.1. Field of application**

This method is applicable to textile fibres of all types provided they do not form an intimate mixture and that it is possible to separate them by hand.

II.2. Principle

After identification of the constituents of the textile, the non-fibrous material is removed by suitable pre-treatment and then the fibres are separated by hand, dried and weighed in order to calculate the proportion of each fibre in the mixture.

II.3. Apparatus

II.3.1. Weighing bottle or any other apparatus giving identical results.

II.3.2. Desiccator containing self-indicating silica gel.

II.3.3. Ventilated oven for drying specimens at 105 ± 3 °C.

II.3.4. Analytical balance, accurate to 0,0002 g.

II.3.5. Soxhlet extractor, or other apparatus giving an identical result.

II.3.6. Needle.

II.3.7. Twist tester or similar apparatus.

II.4. Reagents

II.4.1. Light petroleum, redistilled, boiling range 40 to 60 °C.

II.4.2. Distilled or deionized water.

II.5. Conditioning and testing atmosphere

See I.4.

II.6. Laboratory test sample

See I.5.

II.7. Pre-treatment of laboratory test sample

See I.6.

II.8. Procedure**II.8.1. Analysis of yarn**

Select from the pre-treatment laboratory test sample a specimen of mass not less than 1 g. For a very fine yarn, the analysis may be made on a minimum length of 30 m, whatever its mass.

Cut the yarn into pieces of a suitable length and separate the fibre types by means of a needle and, if necessary, a twist tester. The fibre types so obtained are placed in pre-weighed weighing bottles and dried at 105 ± 3 °C until a constant mass is obtained, as described in I.7.1 and I.7.2.

II.8.2. Analysis of cloth

Select from the pre-treated laboratory test sample, well away from all selvages, a specimen of mass not less than 1 g, with edges carefully trimmed to avoid fraying and running parallel with weft or warp yarns, or in the case of knitted fabrics in the line of wales and courses. Separate the different fibre types, collect them in pre-weighed weighing bottles and proceed as described in II.8.1.

II.9. Calculation and expression of results

Express the mass of each fibre constituent as a percentage of the total mass of the fibres in the mixture. Calculate the results on the basis of clean, dry mass, adjusted by (a) the agreed allowances and (b) the correction factors necessary to take account of loss of matter during pre-treatment.

II.9.1. Calculation of percentage masses of clean, dry fibre, disregarding loss of fibre mass during pre-treatment:

$$P_1 \% = \frac{100 m_1}{m_1 + m_2} = \frac{100}{1 + \frac{m_2}{m_1}}$$

where

P_1 is the percentage of the first clean, dry component

m_1 is the clean, dry mass of the first component

m_2 is the clean, dry mass of the second component.

II.9.2. For calculation of the percentage of each component with adjustment by agreed allowances and, where appropriate, by correction factors for loss of matter during pre-treatment, see I.8.2.**III.1. Precision of the methods**

The precision indicated in individual methods relates to the reproducibility.

The reproducibility refers to the reliability, i.e. the closeness of agreement between experimental values obtained by operators in different laboratories or at different times using the same method and obtaining individual results on specimens of an identical consistent mixture.

The reproducibility is expressed by confidence limits of the results for a confidence level of 95 %.

By this is meant that the difference between two results in a series of analyses made in different laboratories would, given a normal and correct application of the method to an identical and consistent mixture, be exceeded only in five cases out of a 100.

III.2. Test report**III.2.1. State that the analysis was conducted in accordance with this method.****III.2.2. Give details of any special pre-treatment (see I.6).****III.2.3. Give the individual results and the arithmetic mean, each to an accuracy of 0,1.**

2. SPECIAL METHODS — SUMMARY TABLE

Method	Field of application		Reagent
No 1	Acetate	Certain other fibres	Acetone
No 2	Certain protein fibres	Certain other fibres	Hypochlorite
No 3	Viscose, cupro or certain types of modal	Cotton	Formic acid and zinc chloride
No 4	Polyamide or nylon	Certain other fibres	Formic acid, 80 % m/m
No 5	Acetate	Triacetate	Benzyl alcohol
No 6	Triacetate	Certain other fibres	Dichloromethane
No 7	Certain cellulose fibres	Polyester	Sulphuric acid, 75 % m/m
No 8	Acrylics, certain modacrylics or certain chlorofibres	Certain other fibres	Dimethylformamide
No 9	Certain chlorofibres	Certain other fibres	Carbon disulphide/acetone, 55,5/44,5 v/v
No 10	Acetate	Certain chlorofibres	Glacial acetic acid
No 11	Silk	Wool or hair	Sulphuric acid, 75% m/m
No 12	Jute	Certain animal fibres	Nitrogen content method
No 13	Polypropylene	Certain other fibres	Xylene
No 14	Chlorofibres (homopolymers of vinyl chloride)	Certain other fibres	Concentrated sulphuric acid method
No 15	Chlorofibres, certain modacrylics, certain elastanes, acetates, triacetates	Certain other fibres	Cyclohexanone

METHOD No 1

ACETATE AND CERTAIN OTHER FIBRES

(Acetone method)

1. FIELD OF APPLICATION

This method is applicable, after removal of non-fibrous matter, to binary mixtures of:

1. acetate (19)

with

2. wool (1), animal hair (2 and 3), silk (4), cotton (5), flax (7), true hemp (8), jute (9), abaca (10), alfa (11), coir (12), broom (13), ramie (14), sisal (15), cupro (21), modal (22), protein (23), viscose (25), acrylic (26), polyamide or nylon (30) and polyester (31).

In no circumstances is the method applicable to acetate fibres which have been deacetylated on the surface.

2. PRINCIPLE

The acetate is dissolved out from a known dry mass of the mixture, with 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 dry acetate is found by difference.

3. APPARATUS AND REAGENTS (additional to those specified in the general instructions)

3.1. Apparatus

Glass-stoppered conical flasks of at least 200 ml capacity.

3.2. Reagent

Acetone.

4. TEST PROCEDURE

Follow the procedure described in the general instructions and proceed as follows:

To the specimen contained in a glass-stoppered conical flask of at least 200 ml capacity, add 100 ml of acetone per gram of specimen, shake the flask, stand it for 30 minutes at room temperature, stirring from time to time, and then decant the liquid through the weighed filter crucible.

Repeat the treatment twice more (making three extractions in all), but for periods of 15 minutes only, so that the total time of treatment in acetone is one hour. Transfer the residue to the filter crucible. Wash the residue in the filter crucible with acetone and drain with suction. Refill the crucible with acetone and allow to drain under gravity.

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

5. CALCULATION AND EXPRESSION OF RESULTS

Calculate the results as described in the general instructions. The value of 'd' is 1,00.

6. PRECISION

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

METHOD No 2

CERTAIN PROTEIN FIBRES AND CERTAIN OTHER FIBRES

(Method using hypochlorite)

1. FIELD OF APPLICATION

This method is applicable, after removal of non-fibrous matter, to binary mixtures of:

1. certain protein fibres, namely: wool (1), animal hair (2 and 3), silk (4), protein (23) with
2. cotton (5), cupro (21), viscose (25), acrylic (26), chlorofibres (27), polyamide or nylon (30), polyester (31), polypropylene (33), elastane (39) and glass fibre (40).

If different protein fibres are present, the method gives the total of their amounts but not their individual quantities.

2. PRINCIPLE

The protein fibre is dissolved out from a known dry mass of the mixture, with a hypochlorite solution. 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 dry protein fibre is found by difference.

Either lithium hypochlorite or sodium hypochlorite can be used for the preparation of the hypochlorite solution.

Lithium hypochlorite is recommended in cases involving a small number of analyses or for analyses conducted at fairly lengthy intervals. This is because the percentage of hypochlorite in solid lithium hypochlorite — unlike that in sodium hypochlorite — is virtually constant. If the percentage of hypochlorite is known, hypochlorite content need not be checked iodometrically for each analysis, since a constant weighed portion of lithium hypochlorite can be employed.

3. APPARATUS AND REAGENTS (other than those specified in the general instructions)

3.1. Apparatus

- (i) Erlenmeyer flask with ground-glass stopper, 250 ml;
- (ii) thermostat, adjustable to $20 (\pm 2) ^\circ\text{C}$.

3.2. Reagents

(i) *Hypochlorite reagent*

(a) Lithium hypochlorite solution

This consists of a freshly prepared solution containing $35 (\pm 2)$ g/l of active chlorine (approximately 1 M), to which $5 (\pm 0,5)$ g/l of previously dissolved sodium hydroxide is added. To prepare, dissolve 100 grams of lithium hypochlorite containing 35 % active chlorine (or 115 grams containing 30 % active chlorine) in approximately 700 ml of distilled water, add 5 grams of sodium hydroxide dissolved in approximately 200 ml of distilled water and make up to 1 litre with distilled water. The solution which has been freshly prepared need not be checked iodometrically.

(b) Sodium hypochlorite solution

This consists of a freshly prepared solution containing $35 (\pm 2)$ g/l of active chlorine (approximately 1 M) to which $5 (\pm 0,5)$ g/l of previously dissolved sodium hydroxide is added.

Check the active chlorine content of the solution iodometrically before each analysis.

(ii) *Acetic acid, dilute solution*

Dilute 5 ml of glacial acetic acid to 1 litre with water.

4. TEST PROCEDURE

Follow the procedure described in the general instructions and proceed as follows: mix approximately 1 gram of the sample with approximately 100 ml of the hypochlorite solution (lithium or sodium hypochlorite) in the 250 ml flask and agitate thoroughly in order to wet out the sample.

Then heat the flask for 40 minutes in a thermostat at 20 °C and agitate continuously, or at least at regular intervals. Since the dissolution of the wool proceeds exothermically, the reaction heat of this method must be distributed and removed. Otherwise, considerable errors may be caused by the incipient dissolution of the non-soluble fibres.

After 40 minutes, filter the flask contents through a weighed glass-filter crucible and transfer any residual fibres into the filter crucible by rinsing the flask with a little hypochlorite reagent. Drain the crucible with suction and wash the residue successively with water, dilute acetic acid, and finally water, draining the crucible with suction after each addition. Do not apply suction until each washing liquor has drained under gravity.

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

5. CALCULATION AND EXPRESSION OF RESULTS

Calculate the results as described in the general instructions. The value of 'd' is 1,00, except for cotton, viscose and modal, for which 'd' = 1,01, and unbleached cotton, for which 'd' = 1,03.

6. PRECISION

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

METHOD No 3

VISCOSE, CUPRO OR CERTAIN TYPES OF MODAL AND COTTON

(Method using formic acid and zinc chloride)

1. FIELD OF APPLICATION

This method is applicable, after removal of non-fibrous matter, to binary mixtures of:

1. viscose (25) or cupro (21), including certain types of modal fibre (22),

with

2. cotton (5).

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

This method is not applicable to mixtures in which the cotton has suffered extensive chemical degradation nor when the viscose or cupro is rendered incompletely soluble by the presence of certain dyes or finishes that cannot be removed completely.

2. PRINCIPLE

The viscose, cupro or modal fibre is dissolved from a known dry mass of the mixture, with a reagent consisting 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 percentage of dry viscose, cupro or modal fibre is found by difference.

3. APPARATUS AND REAGENTS (other than those specified in the general instructions)

3.1. Apparatus

- (i) glass-stoppered conical flasks of at least 200 ml capacity;
- (ii) apparatus for maintaining flasks at $40 (\pm 2) ^\circ\text{C}$.

3.2. Reagents

- (i) Solution containing 20 g of fused anhydrous zinc chloride and 68 g of anhydrous formic acid made up to 100 g with water (namely 20 parts by mass of fused anhydrous zinc chloride to 80 parts by mass of 85 % m/m formic acid).

NB:

Attention is drawn, in this respect, to point I.3.2.2, which lays down that all reagents used should be chemically pure; in addition, it is essential to use only fused anhydrous zinc chloride.

- (ii) Ammonium hydroxide solution: dilute 20 ml of a concentrated ammonia solution (specific gravity 0,880 g/ml) to 1 litre with water.

4. TEST PROCEDURE

Follow the procedure described in the general instructions and proceed as follows: place the specimen immediately in the flask, pre-heated to $40 ^\circ\text{C}$. Add 100 ml of the solution of formic acid and zinc chloride, pre-heated to $40 ^\circ\text{C}$ per gram of specimen. Insert the stopper and shake the flask vigorously. Keep the flask and its contents at a constant temperature of $40 ^\circ\text{C}$ for two hours and a half, shaking the flask at hourly intervals. Filter the contents of the flask through the weighed filter crucible and with the help of the reagent transfer to the crucible any fibres remaining in the flask. Rinse with 20 ml of reagent.

Wash crucible and residue thoroughly with water at $40 ^\circ\text{C}$. Rinse the fibrous residue in approximately 100 ml of cold ammonia solution (3.2.ii) ensuring that this residue remains wholly immersed in the solution for 10 minutes⁽¹⁾; then rinse thoroughly with cold water.

Do not apply suction until each washing liquor has drained under gravity. Finally, drain the remaining liquid with suction, dry the crucible and residue, and cool and weigh them.

⁽¹⁾ To ensure that the fibrous residue is immersed in the ammonia solution for 10 minutes, one may, for example, use a filter crucible adaptor fitted with a tap by which the flow of the ammonia solution can be regulated.

5. CALCULATION AND EXPRESSION OF RESULTS

Calculate the results as described in the general instructions. The value of 'd' for cotton is 1,02.

6. PRECISION

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

METHOD No 4

POLYAMIDE OR NYLON, AND CERTAIN OTHER FIBRES

(Method using 80 % m/m formic acid)

1. FIELD OF APPLICATION

This method is applicable, after removal of non-fibrous matter, to binary mixtures of:

1. polyamide or nylon, (30),
with
2. wool (1), animal hair (2 and 3), cotton (5), cupro (21), modal (22), viscose (25), acrylic (26), chlorofibre (27), polyester (31), polypropylene (33) and glass fibre (40).

As mentioned above, this method is also applicable to mixtures with wool, but when the wool content exceeds 25 %, method No 2 should be applied (dissolving wool in a solution of alkaline sodium hypochlorite).

2. PRINCIPLE

The polyamide fibre is dissolved out from a known dry mass of the mixture, with formic acid. 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 dry polyamide or nylon is found by difference.

3. APPARATUS AND REAGENTS (other than those specified in the general instructions)

3.1. Apparatus

Glass-stoppered conical flask of at least 200 ml capacity.

3.2. Reagents

- (i) Formic acid (80 % m/m, relative density at 20 °C: 1,186). Dilute 880 ml of 90 % m/m formic acid (relative density at 20 °C: 1,204) to 1 litre with water. Alternatively, dilute 780 ml of 98 to 100 % m/m formic acid (relative density at 20 °C: 1,220) to 1 litre with water.

The concentration is not critical within the range 77 to 83 % m/m formic acid.

- (ii) Ammonia, dilute solution: dilute 80 ml of concentrated ammonia solution (relative density at 20 °C: 0,880) to 1 litre with water.

4. TEST PROCEDURE

Follow the procedure described in the general instructions and proceed as follows: to the specimen contained in the conical flask of at least 200 ml capacity, add 100 ml of formic acid per gram of specimen. Insert the stopper, shake the flask to wet out the specimen. Stand the flask for 15 minutes at room temperature, shaking it at intervals. Filter the contents of the flask through the weighed filter crucible and transfer any residual fibres to the crucible by washing out the flask with a little formic acid reagent. Drain the crucible with suction and wash the residue on the filter successively with formic acid reagent, hot water, dilute ammonia solution, and finally cold water, draining the crucible with suction after each addition. Do not apply suction until each washing liquor has drained under gravity. Finally, drain the crucible with suction, dry the crucible and residue, and cool and weigh them.

5. CALCULATION AND EXPRESSION OF RESULTS

Calculate the results as described in the general instructions. The value of 'd' is 1,00.

6. PRECISION

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

METHOD No 5

ACETATE AND TRIACETATE

(Method using benzyl alcohol)

1. FIELD OF APPLICATION

This method is applicable, after removal of non-fibrous matter, to binary mixtures of:

- acetate (19)
- with
- triacetate (24)

2. PRINCIPLE

The acetate fibre is dissolved out from a known dry mass of the mixture, with benzyl alcohol at 52 ± 2 °C.

The residue is collected, washed, dried and weighed; its mass is expressed as a percentage of the dry mass of the mixture. The percentage of dry acetate is found by difference.

3. APPARATUS AND REAGENTS (other than those specified in the general instructions)

3.1. Apparatus

- (i) Glass-stoppered conical flask of at least 200 ml capacity.
- (ii) Mechanical shaker.
- (iii) Thermostat or other apparatus for keeping the flask at a temperature of 52 ± 2 °C.

3.2. Reagents

- (i) Benzyl alcohol,
- (ii) Ethanol.

4. TEST PROCEDURE

Follow the procedure described in the general instructions and proceed as follows:

To the specimen contained in the conical flask, add 100 ml of benzyl alcohol per gram of specimen. Insert the stopper, secure the flask to the shaker so that it is immersed in the water-bath, kept at 52 ± 2 °C, and shake for 20 minutes at this temperature.

(Instead of using a mechanical shaker, the flask may be shaken vigorously by hand).

Decant the liquid through the weighed filter crucible. Add a further dose of benzyl alcohol in the flask and shake as before at 52 ± 2 °C for 20 minutes.

Decant the liquid through the crucible. Repeat the cycle of operations a third time.

Finally pour the liquid and the residue into the crucible; wash any remaining fibres from the flask into the crucible with an extra quantity of benzyl alcohol at 52 ± 2 °C. Drain the crucible thoroughly.

Transfer the fibres into a flask, rinse with ethanol and after shaking manually decant through the filter crucible.

Repeat this rinsing operation two or three times. Transfer the residue into the crucible and drain thoroughly. Dry the crucible and the residue and cool and weigh them.

5. CALCULATION AND EXPRESSION OF RESULTS

Calculate the results as described in the general instructions. The value of 'd' is 1,00.

6. PRECISION

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

METHOD No 6

TRIACETATES AND CERTAIN OTHER FIBRES

(Method using dichloromethane)

1. FIELD OF APPLICATION

This method is applicable, after removal of non-fibrous matter, to binary mixtures of:

1. triacetate (24)

with

2. wool (1), animal hair (2 and 3), silk (4), cotton (5), cupro (21), modal (22), viscose (25), acrylic (26), polyamide or nylon (30), polyester (31) and glass fibre (40).

Note:

Triacetate fibres which have received a finish leading to partial hydrolysis cease to be completely soluble in the reagent. In such cases, the method is not applicable.

2. PRINCIPLE

The triacetate fibre is dissolved out from a known dry mass of the mixture, with dichloromethane. 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 dry triacetate is found by difference.

3. APPARATUS AND REAGENTS (other than those specified in the general instructions)

3.1. Apparatus

Glass-stoppered conical flask of at least 200 ml capacity.

3.2. Reagent

Dichloromethane.

4. TEST PROCEDURE

Follow the procedure described in the general instructions and proceed as follows:

To the specimen contained in the 200 ml glass-stoppered conical flask, add 100 ml of dichloromethane per gram of specimen, insert the stopper, shake the flask every 10 minutes to wet out the specimen and stand for 30 minutes at room temperature, shaking the flask at regular intervals. Decant the liquid through the weighed filter crucible. Add 60 ml of dichloromethane to the flask containing the residue, shake manually and filter the contents of the flask through the filter crucible. Transfer the residual fibres to the crucible by washing out the flask with a little more dichloromethane. Drain the crucible with suction to remove excess liquid, refill the crucible with dichloromethane and allow it to drain under gravity.

Finally, apply suction to eliminate excess liquid, then treat the residue with boiling water to eliminate all the solvent, apply suction, dry the crucible and residue, cool and weigh them.

5. CALCULATION AND EXPRESSION OF RESULTS

Calculate the results as described in the general instructions. The value of 'd' is 1,00, except in the case of polyester, for which the value of 'd' is 1,01.

6. PRECISION

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

METHOD No 7

CERTAIN CELLULOSE FIBRES AND POLYESTER

(Method using 75 % m/m sulphuric acid)

1. FIELD OF APPLICATION

This method is applicable, after removal of non-fibrous matter, to binary mixtures of:

1. cotton (5), flax (7), true hemp (8), ramie (14), cupro (21), modal (22), viscose (25)
with
2. polyester (31).

2. PRINCIPLE

The cellulose fibre is dissolved out from a known dry mass of the mixture, with 75 % m/m sulphuric acid. The residue is collected, washed, dried and weighed; its mass is expressed as a percentage of the dry mass of the mixture. The proportion of dry cellulose fibre is found by difference.

3. APPARATUS AND REAGENTS (other than those specified in the general instructions)

3.1. Apparatus

- (i) Glass-stoppered conical flask of at least 500 ml capacity.
- (ii) Thermostat or other apparatus for maintaining the flask at 50 ± 5 °C.

3.2. Reagents

- (i) Sulphuric acid, 75 ± 2 % m/m
Prepare by adding carefully, while cooling, 700 ml of sulphuric acid (relative density at 20 °C: 1,84) to 350 ml of distilled water. After the solution has cooled to room temperature, dilute to 1 litre with water.
- (ii) Ammonia, dilute solution
Dilute 80 ml of ammonia solution (relative density at 20 °C: 0,88) to 1 litre with water.

4. TEST PROCEDURE

Follow the procedure described in the general instructions and proceed as follows:

To the specimen contained in the glass-stoppered conical flask of at least 500 ml capacity, add 200 ml of 75 % sulphuric acid per gram of specimen, insert the stopper and carefully shake the flask to wet out the specimen. Maintain the flask at 50 ± 5 °C for one hour, shaking it at regular intervals of roughly 10 minutes. Filter the contents of the flask through the weighed filter crucible by means of suction. Transfer any residual fibres by washing out the flask with a little 75 % sulphuric acid. Drain the crucible with suction and wash the residue on the filter once by filling the crucible with a fresh portion of sulphuric acid. Do not apply suction until the acid has drained under gravity.

Wash the residue successively several times with cold water, twice with dilute ammonia solution, and then thoroughly with cold water, draining the crucible with suction after each addition. Do not apply suction until each washing liquor has drained under gravity. Finally, drain the remaining liquid from the crucible with suction, dry the crucible and residue, and cool and weigh them.

5. CALCULATION AND EXPRESSION OF RESULTS

Calculate the results as described in the general instructions. The value of 'd' is 1,00.

6. PRECISION

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

METHOD No 8

ACRYLICS, CERTAIN MODACRYLICS OR CERTAIN CHLOROFIBRES AND CERTAIN OTHER FIBRES

(Method using dimethylformamide)

1. FIELD OF APPLICATION

This method is applicable, after removal of non-fibrous matter, to binary mixtures of:

1. acrylics (26), certain modacrylics (29), or certain chlorofibres (27) ⁽¹⁾

with

2. wool (1), animal hair (2 and 3), silk (4), cotton (5), cupro (21), modal (22), viscose (25), polyamide or nylon (30) and polyester (31).

It is equally applicable to acrylics, and certain modacrylics, treated with pre-metallized dyes, but not to those dyed with afterchrome dyes.

2. PRINCIPLE

The acrylic, modacrylic or chlorofibre is dissolved out from a known dry mass of the mixture, with dimethylformamide heated in a water-bath at boiling point. 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 and the percentage of dry acrylic, modacrylic or chlorofibre is found by difference.

3. APPARATUS AND REAGENTS (other than those specified in the general instructions)

3.1. Apparatus

- (i) Glass-stoppered conical flask of at least 200 ml capacity.
- (ii) Water bath at boiling point.

3.2. Reagent

Dimethylformamide (boiling point 153 ± 1 °C) not containing more than 0,1 % water.

This reagent is toxic and the use of a hood is thus recommended.

4. TEST PROCEDURE

Follow the procedure described in the general instructions and proceed as follows:

To the specimen contained in the glass-stoppered conical flask of at least 200 ml capacity, add per gram of specimen 80 ml of dimethylformamide, pre-heated in the water-bath at boiling point, insert the stopper, shake the flask to wet out the specimen and heat in the water-bath at boiling point for one hour. Shake the flask and its contents gently by hand five times during this period.

Decant the liquid through the weighed filter crucible, retaining the fibres in the flask. Add a further 60 ml of dimethylformamide to the flask and heat for a further 30 minutes, shaking the flask and contents gently by hand twice during this period.

Filter the contents of the flask through the filter crucible by means of suction.

Transfer any residual fibre to the crucible by washing out the beaker with dimethylformamide. Drain the crucible with suction. Wash the residue with about 1 litre of hot water at 70 — 80 °C, filling the crucible each time. After each addition of water, apply suction briefly but not until the water has drained under gravity. If the washing liquor drains through the crucible too slowly slight suction may be applied.

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

⁽¹⁾ The solubility of such modacrylics or chlorofibres in the reagent should be checked before carrying out the analysis.

5. CALCULATION AND EXPRESSION OF RESULTS

Calculate the results as described in the general instructions. The value of 'd' is 1,00 except in the following cases:

wool	1,01
cotton	1,01
cupro	1,01
modal	1,01
polyester	1,01

6. PRECISION

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

METHOD No 9

CERTAIN CHLOROFIBRES AND CERTAIN OTHER FIBRES
(Method using 55,5/44,5 mixture of carbon disulphide and acetone)

1. FIELD OF APPLICATION

This method is applicable, after removal of non-fibrous matter, to binary mixtures of:

1. certain chlorofibres (27), namely certain polyvinyl chloride fibres, whether after-chlorinated or not ⁽¹⁾
with
2. wool (1), animal hair (2 and 3), silk (4), cotton (5), cupro (21), modal (22), viscose (25), acrylic (26), polyamide or nylon (30), polyester (31), glass fibre (40).

When the wool or silk content of the mixture exceeds 25 %, method No 2 should be used.

When the polyamide or nylon content of the mixture exceeds 25 %, method No 4 should be used.

2. PRINCIPLE

The chlorofibre is dissolved out from a known dry mass of the mixture, with an azeotropic mixture of carbon disulphide 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 dry polyvinyl chloride fibre is found by difference.

3. APPARATUS AND REAGENTS (other than those specified in the general instructions)**3.1. Apparatus**

- (i) Glass-stoppered conical flask of at least 200 ml capacity.
- (ii) Mechanical shaker.

3.2. Reagents

- (i) Azeotropic mixture of carbon disulphide and acetone (55,5 % by volume carbon disulphide to 44,5 % acetone). As this reagent is toxic, the use of a hood is recommended.
- (ii) Ethanol (92 % by volume) or methanol.

4. TEST PROCEDURE

Follow the procedure described in the general instructions and proceed as follows:

To the specimen contained in the glass-stoppered conical flask of at least 200 ml capacity, add 100 ml of the azeotropic mixture per gram of specimen. Seal the flask securely, and shake the flask on a mechanical shaker, or vigorously by hand, for 20 minutes at room temperature. Decant the supernatant liquid through the weighed filter crucible.

Repeat the treatment with 100 ml of fresh reagent. Continue this cycle of operations until no polymer deposit is left on a watch glass when a drop of the extraction liquid is evaporated. Transfer the residue to the filter crucible using more reagent, apply suction to remove the liquid, and rinse the crucible and residue with 20 ml of alcohol and then three times with water. Allow the washing liquor to drain under gravity before draining with suction. Dry the crucible and residue and 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 in the solvent.

5. CALCULATION AND EXPRESSION OF RESULTS

Calculate the results as described in the general instructions. The value of 'd' is 1,00.

6. 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 %.

⁽¹⁾ Before carrying out the analysis, the solubility of the polyvinyl chloride fibres in the reagent should be checked.

METHOD No 10

ACETATE AND CERTAIN CHLOROFIBRES

(Method using glacial acetic acid)

1. FIELD OF APPLICATION

This method is applicable, after removal of non-fibrous matter, to binary mixtures of:

1. acetate (19)
with
2. certain chlorofibres (27) namely polyvinyl chloride fibres, whether after-chlorinated or not.

2. PRINCIPLE

The acetate fibre is dissolved out from a known dry mass of the mixture, with glacial acetic acid. 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 dry acetate is found by difference.

3. APPARATUS AND REAGENTS (other than those specified in the general instructions)

3.1. Apparatus

- (i) Glass-stoppered conical flask of at least 200 ml capacity.
- (ii) Mechanical shaker.

3.2. Reagent

Glacial acetic acid (over 99 %). This reagent should be handled with care since it is highly caustic.

4. TEST PROCEDURE

Follow the procedure described in the general instructions and proceed as follows:

To the specimen contained in the glass-stoppered conical flask of at least 200 ml capacity, add 100 ml glacial acetic acid per gram of specimen. Seal the flask securely and shake on the mechanical shaker, or vigorously by hand, for 20 minutes at room temperature. Decant the supernatant liquid through the weighed filter crucible. Repeat this treatment twice, using 100 ml of fresh reagent each time, making three extractions in all. Transfer the residue to the filter crucible, drain with suction to remove the liquid and rinse the crucible and the residue with 50 ml of glacial acetic acid, and then three times with water. After each rinse, allow the liquid to drain under gravity before applying suction. Dry the crucible and residue, and cool and weigh them.

5. CALCULATION AND EXPRESSION OF RESULTS

Calculate the results as described in the general instructions. The value of 'd' is 1,00.

6. 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 %.

METHOD No 11

SILK AND WOOL OR HAIR

(Method using 75 % m/m sulphuric acid)

1. FIELD OF APPLICATION

This method is applicable, after removal of non-fibrous matter, to binary mixtures of:

1. silk (4)
with
2. wool (1) or animal hair (2 and 3).

2. PRINCIPLE

The silk fibre is dissolved out from a known dry mass of the mixture, with 75 % m/m sulphuric acid ⁽¹⁾.

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 dry silk is found by difference.

3. APPARATUS AND REAGENTS (other than those specified in the general instructions)

3.1. Apparatus

Glass-stoppered conical flask of at least 200 ml capacity.

3.2. Reagents

- (i) Sulphuric acid (75 ± 2 % m/m)
Prepare by adding carefully, while cooling, 700 ml sulphuric acid (density at 20 °C: 1,84) to 350 ml distilled water.
After cooling to room temperature, dilute the solution to 1 litre with water.
- (ii) Sulphuric acid, dilute solution: add 100 ml sulphuric acid (density at 20 °C: 1,84) slowly to 1 900 ml distilled water.
- (iii) Ammonia, dilute solution: dilute 200 ml concentrated ammonia (density at 20 °C: 0,880) to 1 000 ml with water.

4. TEST PROCEDURE

Follow the procedure described in the general instructions and proceed as follows:

To the specimen contained in a glass-stoppered conical flask of at least 200 ml capacity, add 100 ml of 75 % m/m sulphuric acid per gram of specimen and insert the stopper. Shake vigorously and stand for 30 minutes at room temperature. Shake again and stand for 30 minutes. Shake a last time and filter the contents of the flask through the weighed filter crucible. Wash any remaining fibres from the flask with the 75 % sulphuric acid reagent. Wash the residue on the crucible successively with 50 ml of the dilute sulphuric acid reagent, 50 ml water and 50 ml of the dilute ammonia solution. Each time allow the fibres to remain in contact with the liquid for about 10 minutes before applying suction. Finally rinse with water, leaving the fibres in contact with the water for about 30 minutes. Drain the crucible with suction, dry the crucible and residue, and cool and weigh them.

5. CALCULATION AND EXPRESSION OF RESULTS

Calculate the results as described in the general instructions. The value of 'd' is 0,985 for wool ⁽¹⁾.

6. PRECISION

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

⁽¹⁾ Wild silks, such as tussah silk, are not completely soluble in 75 % m/m sulphuric acid.

METHOD No 12

JUTE AND CERTAIN ANIMAL FIBRES

(Method by determining nitrogen content)

1. FIELD OF APPLICATION

This method is applicable, after removal of non-fibrous matter, to binary mixtures of:

1. jute (9)

with

2. certain animal fibres.

The animal-fibre component may consist solely of hair (2 and 3) or wool (1) or of any mixture of the two. This method is not applicable to textile mixtures containing non-fibrous matter (dyes, finishes, etc.) with a nitrogen base.

2. PRINCIPLE

The nitrogen content of the mixture is determined, and from this and the known or assumed nitrogen contents of the two components, the proportion of each component is calculated.

3. APPARATUS AND REAGENTS (other than those specified in the general instructions)

3.1. Apparatus

- (i) Kjeldahl digestion flask, 200 — 300 ml capacity.
- (ii) Kjeldahl distillation apparatus with steam injection.
- (iii) Titration apparatus, allowing precision of 0,05 ml.

3.2. Reagents

- (i) Toluene.
- (ii) Methanol.
- (iii) Sulphuric acid, relative density at 20 °C: 1,84 ⁽¹⁾.
- (iv) Potassium sulphate ⁽¹⁾.
- (v) Selenium dioxide ⁽¹⁾.
- (vi) Sodium hydroxide solution (400 g/litre). Dissolve 400 g of sodium hydroxide in 400 — 500 ml of water and dilute to 1 litre with water.
- (vii) Mixed indicator. Dissolve 0,1 g of methyl red in 95 ml of ethanol and 5 ml of water, and mix with 0,5 g of bromocresol green dissolved in 475 ml of ethanol and 25 ml of water.
- (viii) Boric acid solution. Dissolve 20 g of boric acid in 1 litre of water.
- (ix) Sulphuric acid, 0,02N (standard volumetric solution).

4. PRE-TREATMENT OF TEST SAMPLE

The following pre-treatment is substituted for the pre-treatment described in the general instructions:

Extract the air-dry sample in a Soxhlet apparatus with a mixture of 1 volume of toluene and 3 volumes of methanol for four hours at a minimum rate of 5 cycles per hour. Allow the solvent to evaporate from the sample in air, and remove the last traces in an oven at 105 ± 3 °C. Then extract the sample in water (50 ml per g of sample) by boiling under reflux for 30 minutes. Filter, return the sample to the flask, and repeat the extraction with an identical volume of water. Filter, remove excess water from the sample by squeezing, suction, or centrifuging and then allow the sample to become air-dry.

⁽¹⁾ These reagents should be nitrogen-free.

Note:

The toxic effects of toluene and methanol should be borne in mind and full precautions should be taken in their use.

5. TEST PROCEDURE

5.1. General instructions

Follow the procedure described in the general instructions as regards the selection, drying and weighing of the specimen.

5.2. Detailed procedure

Transfer the specimen to a Kjeldahl digestion flask. To the specimen weighing at least 1 g contained in the digestion flask, add, in the following order, 2,5 g potassium sulphate, 0,1 — 0,2 g selenium dioxide and 10 ml sulphuric acid (relative density 1,84). Heat the flask, gently at first, until the whole of the fibre is destroyed, and then heat it more vigorously until the solution becomes clear and almost colourless. Heat it for a further 15 minutes. Allow the flask to cool, dilute the contents carefully with 10 — 20 ml water, cool, transfer the contents quantitatively to a 200 ml graduated flask and make up to volume with water to form the digest solution.

Place about 20 ml of boric acid solution in a 100 ml conical flask and place the flask under the condenser of the Kjeldahl distillation apparatus so that the delivery tube dips just below the surface of the boric acid solution. Transfer exactly 10 ml of digest solution to the distillation flask, add not less than 5 ml of sodium hydroxide solution to the funnel, lift the stopper slightly and allow the sodium hydroxide solution to run slowly into the flask. If the digest solution and sodium hydroxide solution remain as two separate layers, mix them by gentle agitation. Heat the distillation flask gently and pass it into steam from the generator. Collect about 20 ml of distillate, lower the conical flask so that the tip of the delivery tube of the condenser is about 20 mm above the surface of the liquid and distil for 1 minute more. Rinse the tip of the delivery tube with water, catching the washings in the conical flask. Remove the conical flask and replace it with another conical flask containing roughly 10 ml of boric acid solution and collect about 10 ml distillate.

Titrate the two distillates separately with 0,02N sulphuric acid, use the mixed indicator. Record the total titre for the two distillates. If the titre for the second distillate is more than 0,2 ml, repeat the test and start the distillation again using a fresh aliquot of digest solution.

Carry out a blank determination, i.e. digestion and distillation using the reagents only.

6. CALCULATION AND EXPRESSION OF RESULTS

6.1. Calculate the percentage nitrogen content in the dry specimen as follows:

$$A \% = \frac{28 (V - b) N}{W}$$

where

A = percentage nitrogen in the clean dry specimen,

V = total volume in ml of standard sulphuric acid used in the determination,

b = total volume in ml of standard sulphuric acid used in the blank determination,

N = normality of standard sulphuric acid,

W = dry mass (g) of specimen.

6.2. Using the values of 0,22 % for the nitrogen content of jute and 16,2 % for the nitrogen content of animal fibre, both percentages being expressed on the dry mass of the fibre, calculate the composition of the mixture as follows:

$$PA \% = \frac{A - 0,22}{16,2 - 0,22} \times 100$$

where

PA % = percentage of animal fibre in the clean dry specimen.

7. PRECISION

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

METHOD No 13

POLYPROPYLENE FIBRES AND CERTAIN OTHER FIBRES

(Xylene method)

1. FIELD OF APPLICATION

This method is applicable, after removal of non-fibrous matter, to binary mixtures of:

1. polypropylene fibres (33)

with

2. wool (1), animal hair (2 and 3), silk (4), cotton (5), acetate (19), cupro (21), modal (22), triacetate (24), viscose (25), acrylic (26), polyamide or nylon (30), polyester (31) and glass fibre (40).

2. PRINCIPLE

The polypropylene fibre is dissolved out 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 difference.

3. APPARATUS AND REAGENTS (other than those specified in the general instructions)

3.1. Apparatus

(i) Glass-stoppered conical flask of at least 200 ml capacity.

(ii) Reflux condenser (suitable for liquids of high boiling point), fitting the conical flask (i).

3.2. Reagent

Xylene distilling between 137 and 142 °C.

Note:

This reagent is highly flammable and has a toxic vapour. Suitable precautions must be taken in its use.

4. TEST PROCEDURE

Follow the procedure described in the general instructions then proceed as follows:

To the specimen contained in the conical flask (3.1 (i)), add 100 ml of xylene (3.2) per gram of specimen. Attach the condenser (3.1 (ii)), bring the contents to the boil and maintain at boiling point for three minutes. Immediately decant the hot liquid through the weighed filter crucible (see Note 1). Repeat this treatment twice more, each time using a fresh 50 ml portion of solvent.

Wash the residue remaining in the flask successively with 30 ml of boiling xylene (twice), then with 75 ml of light petroleum (I.3.2.1 of general instructions) (twice). After the second wash with light petroleum, filter the contents of the flask through the crucible, transfer any residual fibres to the crucible with the aid of a small quantity of light petroleum and allow the solvent to evaporate. Dry the crucible and residue, cool and weigh them.

Notes:

1. The filter crucible through which the xylene is to be decanted must be pre-heated.
2. After the treatment with boiling xylene, ensure that the flask containing the residue is cooled sufficiently before the light petroleum is introduced.
3. In order to reduce the fire and toxicity hazards to the operator, a hot extraction apparatus using the appropriate procedures, giving identical results, may be used ⁽¹⁾.

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

5. CALCULATION AND EXPRESSION OF RESULTS

Calculate the results as described in the general instructions. The value of 'd' is 1,00.

6. PRECISION

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

METHOD No 14

CHLOROFIBRES (HOMOPOLYMERS OF VINYL CHLORIDE) AND CERTAIN OTHER FIBRES

(Concentrated sulphuric acid method)

1. FIELD OF APPLICATION

This method is applicable, after removal of non-fibrous matter, to binary mixtures of:

1. chlorofibres (27) based on homopolymers of vinyl chloride whether after-chlorinated or not with
2. cotton (5), acetate (19), cupro (21), modal (22), triacetate (24), viscose (25), certain acrylics (26), certain modacrylics (29), polyamide or nylon (30) and polyester (31).

The modacrylics concerned are those which give a limpid solution when immersed in concentrated sulphuric acid (relative density 1,84 at 20 °C).

This method can be used in place of method Nos 8 and 9.

2. PRINCIPLE

The constituent other than the chlorofibre (i.e. the fibres mentioned under point 2 of paragraph 1) is dissolved out from a known dry mass of the mixture with concentrated sulphuric acid (relative density 1,84 at 20 °C). The residue, consisting of the chlorofibre, 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.

3. APPARATUS AND REAGENTS (other than those specified in the general instructions)

3.1. Apparatus

- (i) Glass-stoppered conical flask of at least 200 ml capacity.
- (ii) Glass rod with flattened end.

3.2. Reagents

- (i) Sulphuric acid, concentrated (relative density 1,84 at 20 °C).
- (ii) Sulphuric acid, approximately 50 % (m/m) aqueous solution.
Prepare by adding carefully, while cooling, 400 ml of sulphuric acid (relative density 1,84 at 20 °C) to 500 ml of distilled or de-ionized water. After cooling to room temperature, dilute the solution to one litre with water.
- (iii) Ammonia, dilute solution.
Dilute 60 ml of concentrated ammonia solution (relative density 0,880 at 20 °C) to one litre with distilled water.

4. TEST PROCEDURE

Follow the procedure described in the general instructions, then proceed as follows:

To the specimen contained in the flask (3.1 (i)) add 100 ml of sulphuric acid (3.2 (i)) per gram of specimen.

Allow the contents of the flask to remain at room temperature for 10 minutes and during that time stir the test specimen occasionally by means of the glass rod. If a woven or knitted fabric is being treated, wedge it between the wall of the flask and the glass rod and exert a light pressure in order to separate the material dissolved by the sulphuric acid.

Decant the liquid through the weighed filter crucible. Add to the flask a fresh portion of 100 ml of sulphuric acid (3.2 (i)) and repeat the same operation. Transfer the contents of the flask to the filter crucible and transfer the fibrous residue there with the aid of the glass rod. If necessary, add a little concentrated sulphuric acid (3.2 (i)) to the flask in order to remove any fibres adhering to the wall. Drain the filter crucible with suction; remove the filtrate by emptying or changing the filter-flask, wash the residue in the crucible successively with 50 % sulphuric acid solution (3.2 (ii)), distilled or de-ionized

water (1.3.2.3 of the general instructions, ammonia solution (3.2 (iii)) and finally wash thoroughly with distilled or de-ionized water, draining the crucible with suction after each addition. (Do not apply suction during the washing operation, but only after the liquid has drained off by gravity.)

Dry the crucible and residue, cool and weigh them.

5. CALCULATION AND EXPRESSION OF RESULTS

Calculate the results as described in the general instructions. The value of 'd' is 1,00.

6. PRECISION

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

METHOD No 15

CHLOROFIBRES, CERTAIN MODACRYLICS, CERTAIN ELASTANES, ACETATES, TRIACETATES
AND CERTAIN OTHER FIBRES

(Method using cyclohexanone)

1. FIELD OF APPLICATION

This method is applicable, after removal of non-fibrous matter, to binary mixtures of:

1. acetate (19), triacetate (24), chlorofibre (27), certain modacrylics (29), certain elastanes (39)
with
2. wool (1), animal hair (2 and 3), silk (4), cotton (5), cupro (21), modal (22), viscose (25), polyamide or nylon (30), acrylic (26) and glass fibre (40).

Where modacrylics or elastanes are present a preliminary test must first be carried out to determine whether the fibre is completely soluble in the reagent.

It is also possible to analyse mixtures containing chlorofibres by using method No 9 or 14.

2. PRINCIPLE

The acetate and triacetate fibres, chlorofibres, certain modacrylics, and certain elastanes are dissolved out from a known dry mass with cyclohexanone at a temperature close to boiling point. 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, modacrylic, elastane, acetate and triacetate is found by difference.

3. APPARATUS AND REAGENTS (other than those specified in the general instructions)

3.1. Apparatus

- (i) Hot extraction apparatus suitable for use in the test procedure in section 4. (See figure: this is a variant of the apparatus described in *Melliand Textilberichte* 56 (1975) 643 — 645).
- (ii) Filter crucible to contain the specimen.
- (iii) Porous baffle (porosity grade 1).
- (iv) Reflux condenser that can be adapted to the distillation flask.
- (v) Heating device.

3.2. Reagents

- (i) Cyclohexanone, boiling point 156 °C.
- (ii) Ethyl alcohol, 50 % by volume.

NB: Cyclohexanone is flammable and toxic. Suitable precautions must be taken in its use.

4. TEST PROCEDURE

Follow the procedure described in the general instructions and then proceed as follows:

Pour into the distillation flask 100 ml of cyclohexanone per gram of material, insert the extraction container in which the filter crucible, containing the specimen and the porous baffle, slightly inclined, have previously been placed. Insert the reflux condenser. Bring to the boil and continue extraction for 60 minutes at a minimum rate of 12 cycles per hour. After extraction and cooling remove the extraction container, take out the filter crucible and remove the porous baffle. Wash the contents of the filter crucible three or four times with 50 % ethyl alcohol heated to about 60 °C and subsequently with 1 litre of water at 60 °C.

Do not apply suction during or between the washing operations. Allow the liquid to drain under gravity and then apply suction.

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

5. CALCULATION AND EXPRESSION OF RESULTS

Calculate the results as described in the general instructions. The value of 'd' is 1,00 with the following exceptions:

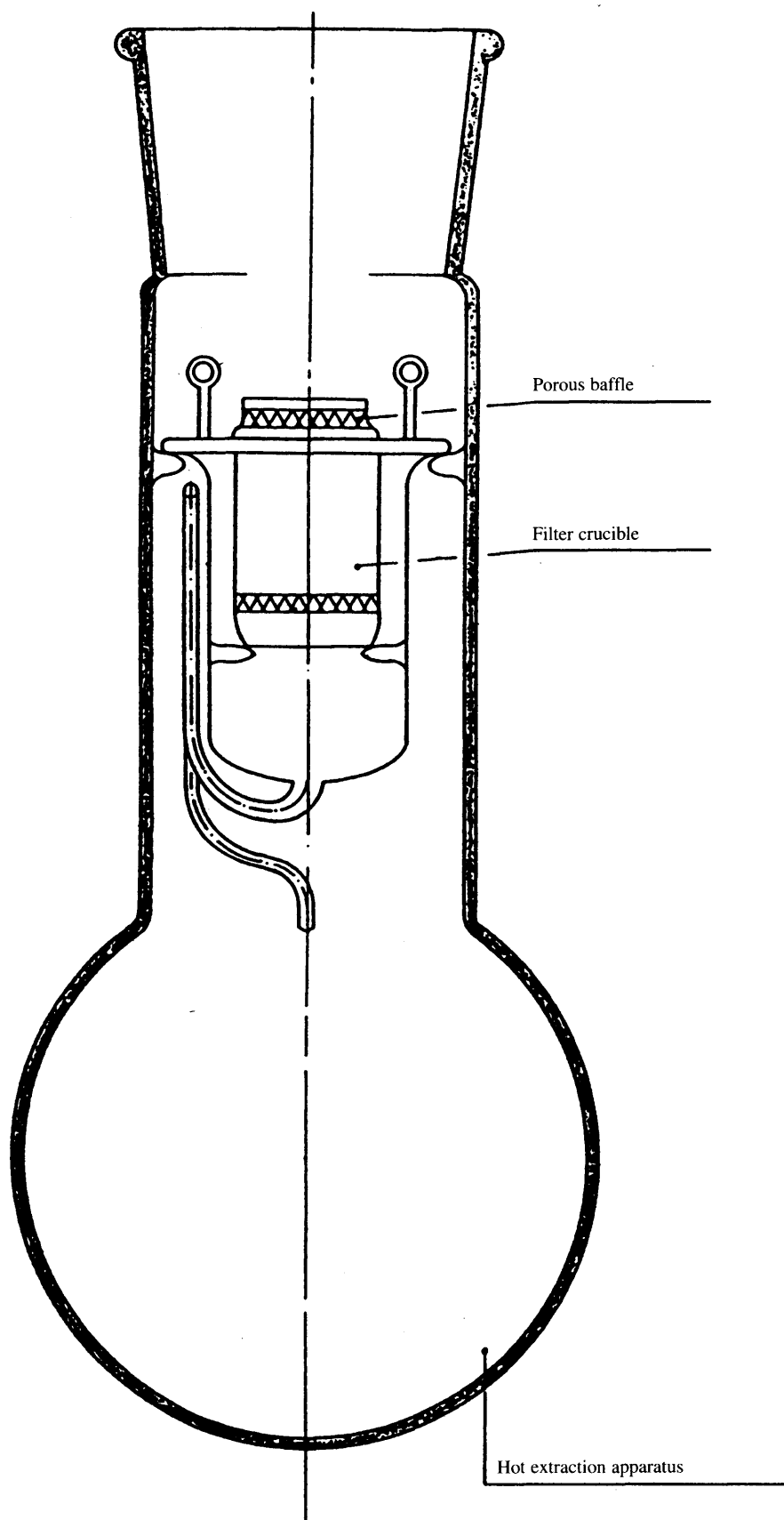
silk 1,01

acrylic 0,98.

6. PRECISION

On homogeneous mixtures of textile fibres, the confidence limits of results obtained by this method are not greater than ± 1 for a confidence level of 95 %.

Figure referred to in point 3.1 (i) of method No 15



ANNEX III

PART A

REPEALED DIRECTIVES

(referred to in Article 8)

- Council Directive 72/276/EEC (OJ No L 173, 31. 7. 1972, p. 1) and its successive amendments:
 - Commission Directive 79/76/EEC (OJ No L 17, 24. 1. 1979, p. 17)
 - Council Directive 81/75/EEC (OJ No L 57, 4. 3. 1981, p. 23)
 - Commission Directive 87/184/EEC (OJ No L 75, 17. 3. 1987, p. 21)

PART B

TIME LIMITS FOR TRANSPOSITION

Directive	Time limits for transposition
72/276/EEC	18 January 1974
79/76/EEC	28 June 1979
81/75/EEC	27 February 1982
87/184/EEC	1 September 1988

ANNEX IV

CORRELATION TABLE

This Directive	Directive 72/276/EEC
Article 1	Article 1
Article 2	Article 2
Article 3	Article 3
Article 4	Article 4
Article 5	Article 5
Article 6	Article 6
Article 7	Article 7 (2)
Article 8	—
Article 9	Article 8
Annex I	Annex I
Annex II (1)	Annex II (1)
Annex II (2)	Annex II (2)
Annex II, method No 1	Annex II, method No 1
Annex II, method No 2	Annex II, method No 2
Annex II, method No 3	Annex II, method No 3
Annex II, method No 4	Annex II, method No 4
Annex II, method No 5	Annex II, method No 5
Annex II, method No 6	Annex II, method No 6
Annex II, method No 7	Annex II, method No 7
Annex II, method No 8	Annex II, method No 8
Annex II, method No 9	Annex II, method No 9
Annex II, method No 10	Annex II, method No 10
Annex II, method No 11	Annex II, method No 11
Annex II, method No 12	Annex II, method No 13
Annex II, method No 13	Annex II, method No 14
Annex II, method No 14	Annex II, method No 15
Annex II, method No 15	Annex II, method No 16
Annex III	—
Annex IV	—

DIRECTIVE 96/74/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

of 16 December 1996

on textile names

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF
THE EUROPEAN UNION,

Having regard to the Treaty establishing the European
Community, and in particular Article 100a thereof,

Having regard to the proposal from the Commission ⁽¹⁾,

Having regard to the opinion of the Economic and Social
Committee ⁽²⁾,

Acting in accordance with the procedure laid down in
Article 189b of the Treaty ⁽³⁾,

(1) Whereas Council Directive 71/307/EEC of 26 July
1971 on the approximation of the laws of the
Member States relating to textile names ⁽⁴⁾ has
been amended frequently and substantially;
whereas, for reasons of clarity and rationality the
said Directive should be consolidated;

(2) Whereas, if the provisions of the Member States
with regard to the names, composition and
labelling of textile products were to vary from one
Member State to another, this would create
hindrances to the proper functioning of the
internal market;

(3) Whereas these hindrances can be eliminated if the
placing of textile products on the market at
Community level is subject to uniform rules;
whereas it is therefore necessary to harmonize the
names of textile fibres and the particulars
appearing on labels, markings and documents
which accompany textile products at the various
stages of their production, processing and
distribution; whereas the term 'textile fibre' is to
be extended to include strips or tubes with an
apparent width of not more than 5 mm, which are
cut out from sheets manufactured by extrusion of
the polymers listed under items 19 to 38 and 41 of
Annex I, and subsequently drawn out lengthwise;

(4) Whereas provision should also be made in respect
of certain products which are not made exclusively
of textile materials but have a textile content which
constitutes an essential part of the product or to
which attention is specifically drawn by the
producer, processor or trader; whereas in item 30
in Annex II there is no need to distinguish between
the different types of polyamide or nylon, the
agreed allowances for which are therefore to be
brought into line;

(5) Whereas the tolerance in respect of 'other fibres',
which has already been laid down for pure
products, is also to be applied to mixtures;

(6) Whereas, in order to attain the objective
underlying national provisions in this field,
labelling should be compulsory;

(7) Whereas, in cases where it is technically difficult to
specify the composition of a product at the time of
manufacture, any fibres known at that time may be
stated on the label provided that they account for a
certain percentage of the finished product;

(8) Whereas it is expedient, in order to avoid the
differences of application that have become
apparent in this connection in the Community, to
specify the exact methods of labelling certain
textile products consisting of two or more
components, and also the components of textile
products that need not be taken into account for
purposes of labelling and analysis;

(9) Whereas textile products subject only to the
requirements of inclusive labelling, and those sold
by the metre or in cut lengths, are to be offered for
sale in such a way that the consumer can fully
acquaint himself with the particulars affixed to the
overall packaging or the roll; whereas it is for the
Member States to decide on the measures to be
adopted for this purpose;

(10) Whereas the use of descriptions or names which
enjoy particular prestige among users and
consumers should be made subject to certain
conditions;

(11) Whereas it was necessary to lay down methods for
the sampling and analysis of textiles in order to
exclude any possibility of objections to the
methods used; whereas however, the provisional
retention of the national methods currently in force
does not prevent the application of uniform rules;

⁽¹⁾ OJ No C 96, 6. 4. 1994, p. 1.

⁽²⁾ OJ No C 195, 18. 7. 1994, p. 9.

⁽³⁾ Opinion of the European Parliament of 15 February 1995,
(OJ No C 56, 6. 3. 1995, p. 53) Council common position
of 26 February 1996 (OJ No C 196, 6. 7. 1996, p. 1),
Decision of the European Parliament of 18 June 1996 (OJ
No C 198, 8. 7. 1996, p. 25) and Council Decision of 7
October 1996.

⁽⁴⁾ OJ No L 185, 16. 8. 1971, p. 16. Directive as last amended
by Directive 87/140/EEC, (OJ No L 56, 26. 2. 1987, p.
24).

- (12) Whereas Annex II to this Directive which sets out the agreed allowances to be applied to the anhydrous mass of each fibre during the determination by analysis of the fibre content of textile products, gives, in items 1, 2 and 3, two different agreed allowances for calculating the composition of carded or combed fibres containing wool and/or animal hair; whereas laboratories cannot always tell whether a product is carded or combed, and consequently inconsistent results can arise from the application of this provision during checks on the conformity of textile products carried out in the Community; whereas laboratories should therefore be authorized to apply a single agreed allowance in doubtful cases;
- (13) Whereas it is not advisable in a separate Directive on textile products, to harmonize all the provisions applicable to such products;
- (14) Whereas, Annexes III and IV, because of the exceptional nature of the items referred to therein, should also cover other products exempt from labelling, in particular 'disposable' products or products for which only inclusive labelling is required;
- (15) Whereas the provisions necessary for the determination and the adaptation to technical progress of the methods of analysis are implementing measures of a strictly technical nature; whereas it is therefore necessary to apply to those measures, and to the measures for adapting Annexes I and II to this Directive to technical progress, the committee procedure already laid down in Article 6 of Directive 96/73/EC of the European Parliament and of the Council of 16 December 1996 on certain methods for the quantitative analysis of binary textile fibre mixtures ⁽¹⁾;
- (16) Whereas the provisions laid down in this Directive are in accordance with the opinion of the Committee for Directives relating to Textile Names and Labelling;
- (17) Whereas this Directive is not to affect the obligations of the Member States concerning the deadlines for transposition of the Directives set out in Annex V, Part B,

HAVE ADOPTED THIS DIRECTIVE:

Article 1

Textile products may be marketed within the Community, either before or during their industrial processing or at any of the distribution stages, only where such products comply with the provisions of this Directive.

⁽¹⁾ See page 1 of this Official Journal.

Article 2

1. For the purposes of this Directive, 'textile products' means any raw, semi-worked, worked, semi-manufactured, manufactured, semi-made-up or made-up products which are exclusively composed of textile fibres, regardless of the mixing or assembly process employed.
2. For the purpose of this Directive 'textile fibre' means:
 - a unit of matter characterized by its flexibility, fineness and high ratio of length to maximum transverse dimension, which render it suitable for textile applications,
 - flexible strips or tubes, of which the apparent width does not exceed 5 mm, including strips cut from wider strips or films, produced from the substances used for the manufacture of the fibres listed under items 19 to 41 in Annex I and suitable for textile applications; the apparent width is the width of the strip or tube when folded, flattened, compressed or twisted, or the average width where the width is not uniform.
3. The following shall be treated in the same way as textile products and shall be subject to the provisions of this Directive:
 - products containing at least 80 % by weight of textile fibres,
 - furniture, umbrella and sunshade coverings containing at least 80 % by weight of textile components; similarly, the textile components of multi-layer floor coverings, of mattresses and of camping goods, and warm linings of footwear, gloves, mittens and mitts, provided such parts or linings constitute at least 80 % by weight of the complete article,
 - textiles incorporated in other products and forming an integral part thereof, where their composition is specified.

Article 3

1. The names and descriptions of fibres referred to in Article 2 are listed in Annex I.
2. Use of the names appearing in the table in Annex I shall be reserved for fibres whose nature is specified under the same item of that table.
3. None of these names may be used for any other fibre, whether on their own or as a root or as an adjective, in any language whatsoever.
4. The word 'silk' may not be used to indicate the shape or particular presentation in continuous yarn of textile fibres.

Article 4

1. No textile product may be described as '100 %', 'pure' or 'all' unless it is exclusively composed of the same fibre; no similar term may be used.

2. A textile product may contain up to 2 % by weight of other fibres, provided this quantity is justified on technical grounds and is not added as a matter of routine. This tolerance shall be increased to 5 % in the case of textile products which have undergone a carding process.

Article 5

1. A wool product may be described as:

- 'lana virgen' or 'lana de esquilado',
- 'ren, ny uld',
- 'Schurwolle',
- 'παρθένο μαλλί',
- 'fleece wool' or 'virgin wool',
- 'laine vierge' or 'laine de tonte',
- 'lana vergine' or 'lana di tosa',
- 'scheerwol',
- 'lã virgem',
- 'uusi villa',
- 'ren ull',

only if it is composed exclusively of a fibre which has not previously been incorporated in a finished product, which has not been subjected to any spinning and/or felting processes other than those required in the manufacture of that product, and which has not been damaged by treatment or use.

2. By way of derogation from the provisions of paragraph 1, the names referred to therein may be used to describe wool contained in a fibre mixture when:

- (a) all the wool contained in that mixture satisfies the requirements defined in paragraph 1;
- (b) this wool accounts for not less than 25 % of the total weight of the mixture;
- (c) in the case of a scribbled mixture, the wool is mixed with only one other fibre.

In the case referred to in this paragraph, the full percentage composition must be given.

3. The tolerance justified on technical grounds connected with manufacture shall be limited to 0,3 % of fibrous impurities in the case of the products referred to in paragraphs 1 and 2, including wool products which have undergone a carding process.

Article 6

1. A textile product composed of two or more fibres, one of which accounts for at least 85 % of the total weight, shall be designated:

- by the name of the latter fibre followed by its percentage by weight, or
- by the name of the latter fibre followed by the words '85 % minimum', or
- by the full percentage composition of the product.

2. A textile product composed of two or more fibres, none of which accounts for as much as 85 % of the total weight, shall be designated by the name and percentage by weight of at least the two main fibres, followed by the names of the other constituent fibres in descending order of weight, with or without an indication of their percentage by weight. However:

- (a) fibres which separately account for less than 10 % of the total weight of a product may be collectively designated by the term 'other fibres', followed by the total percentage by weight;
- (b) where the name of a fibre which accounts for less than 10 % of the total weight of a product is specified, the full percentage composition of that product shall be given.

3. Products having a pure cotton warp and a pure flax weft, in which the percentage of flax accounts for not less than 40 % of the total weight of the unsized fabric may be given the name 'cotton linen union' which must be accompanied by the composition specification 'pure cotton warp — pure flax weft'.

4. In the case of textile products intended for the end consumer, in the percentage compositions specified in paragraph 1, 2, 3 and 5:

- (a) a quantity of extraneous fibres of up to 2 % of the total weight of the textile product shall be tolerated, provided that this quantity is justified on technical grounds and is not added as a matter of routine; this tolerance shall be increased to 5 % in the case of products which have undergone a carding process and shall be without prejudice to the tolerance referred to in Article 5 (3);
- (b) a manufacturing tolerance of 3 % shall be permitted between the stated fibre percentages and the percentages obtained from analysis, in relation to the total weight of fibres shown on the label; such tolerance shall also be applied to fibres which, in accordance with paragraph 2, are listed in descending order of weight with no indication of their percentage. This tolerance shall also apply to Article 5 (2) (b).

On analysis, the tolerances shall be calculated separately; the total weight to be taken into account in calculating the tolerance referred to in (b) shall be that of the fibres of the finished product less the weight of any extraneous fibres found when applying the tolerance referred to in (a).

The addition of the tolerances referred to in (a) and (b) shall be permitted only if any extraneous fibres found by analysis, when applying the tolerance referred to in (a), prove to be of the same chemical type as one or more of the fibres shown on the label.

In the case of particular products for which the manufacturing process requires tolerances higher than those given in (a) and (b), higher tolerances may be authorized when the conformity of the product is checked pursuant to Article 13 (1) only in exceptional cases and where adequate justification is provided by the manufacturer. Member States shall immediately inform the Commission thereof.

5. The term 'mixed fibres' or the term 'unspecified textile composition' may be used for any product the composition of which cannot easily be stated at the time of manufacture.

Article 7

Without prejudice to the tolerances laid down in Article 4 (2), Article 5 (3) and Article 6 (4), visible, isolable fibres which are purely decorative and do not exceed 7 % of the weight of the finished product need not be mentioned in the fibre compositions provided for in Articles 4 and 6; the same shall apply to fibres (e.g. metallic fibres) which are incorporated in order to obtain an antistatic effect and which do not exceed 2 % of the weight of the finished product. In the case of the products referred to in Article 6 (3), such percentages shall be calculated not on the weight of the fabric but on the weight of the warp and that of the weft separately.

Article 8

1. Textile products within the meaning of this Directive shall be labelled or marked whenever they are put on the market for production or commercial purposes; this labelling or marking may be replaced or supplemented by accompanying commercial documents when the products are not being offered for sale to the end consumer, or when they are delivered in performance of an order placed by the State or by some other legal person governed by public law or, in those Member States where this concept is unknown, by an equivalent entity.

2. (a) The names, descriptions and particulars as to textile fibre content referred to in Articles 3 to 6 and in Annex I shall be clearly indicated in the commercial documents. This requirement shall, in particular, preclude the use of abbreviations in sales contracts, bills and invoices; however, a mechanized processing code may be used, provided that code is explained in the same document.

(b) The names, descriptions and particulars as to textile fibres content referred to in Articles 3 to 6 and in Annex I shall be indicated in clear, legible and uniform print when textile products are offered for sale or sold to the consumer, and in particular in catalogues and trade literature, on packagings, on labels and on markings.

Particulars and information other than those provided for by this Directive shall be quite separate. This provision shall not apply to trade marks or to the name of the undertaking which may be given immediately before or after particulars provided for by this Directive.

If, however, when a textile product is offered for sale or is sold to the consumer as referred to in the first subparagraph, a trade mark or a name of an undertaking is indicated which contains, on its own or as an adjective or as a root, one of the names listed in Annex I or a name liable to be confused therewith, the trade mark or the name of an undertaking must be immediately preceded or followed by the names, descriptions and particulars as to textile fibre content referred to in Articles 3 to 6 and in Annex I, in clear and legible print.

(c) Member States may require that, when textile products are offered for sale or are sold to the end consumer in their territory, their national languages should also be used for the labelling and marking required by this Article.

In the case of bobbins, reels, skeins, balls or any other small quantity of sewing, mending and embroidery yarns, the option provided for in the first subparagraph may be exercised by the Member States only in the case of inclusive labelling on packaging or displays. Without prejudice to the cases referred to in item 18 of Annex IV, individual items may be labelled in any one of the Community languages.

(d) Member States may not prohibit the use of descriptions or particulars other than those referred to in Articles 3, 4 and 5 which relate to characteristics of products where such descriptions or particulars are consistent with their fair trade practices.

Article 9

1. Any textile product composed of two or more components which have different fibre contents shall bear a label stating the fibre content of each component. Such labelling shall not be compulsory for components representing less than 30 % of the total weight of the product, excluding main linings.

2. Where two or more textile products have the same fibre content and normally form a single unit, they need bear only one label.

3. Without prejudice to the provisions of Article 12:

(a) the fibre composition of the following corsetry articles shall be indicated by stating the composition of the whole product or that of the components listed below either inclusively or separately:

- for brassières: the outside and inside fabric of the cups and back,
- for corsets: the front, rear and side stiffening panels,
- for corselets: the outside and inside fabric of the cups, the front and rear stiffening panels and the side panels.

The fibre composition of corsetry articles other than those listed in the first subparagraph shall be indicated by stating the composition of the whole product or, either inclusively or separately, the composition of the various components of the articles; such labelling shall not be compulsory for components representing less than 10 % of the total weight of the product.

The separate labelling of the various parts of the said corsetry articles shall be carried out in such a way that the end consumer can easily understand to which part of the product the particulars on the label refer;

(b) the fibre composition of etch-printed textiles shall be given for the product as a whole and may be indicated by stating, separately, the composition of the base fabric and that of the etched parts. These components must be mentioned by name;

(c) the fibre composition of embroidered textiles shall be given for the product as a whole and may be indicated by stating, separately, the composition of the base fabric and that of the embroidery yarn; these components must be mentioned by name; if the embroidered parts amount to less than 10 % of the surface area of the product, only the composition of the base fabric need be stated;

(d) the fibre composition of yarns consisting of a core and a cover made up of different fibres, and offered for sale as such to the consumer, shall be given for the product as a whole and may be indicated by stating the composition of the core and the cover separately; these components must be mentioned by name;

(e) the fibre composition of velvet and plush textiles, or of textiles resembling velvet or plush, shall be given for the whole product and, where the product comprises a distinct backing and a use-surface composed of different fibres, may be stated separately for these two parts, which must be mentioned by name;

(f) the composition of floor coverings and carpets of which the backing and the use-surface are composed of different fibres may be stated for the use-surface alone, which must be mentioned by name.

Article 10

1. By way of derogation from the provisions of Articles 8 and 9:

(a) in the case of textile products listed in Annex III which are at one of the stages referred to in Article 2 (1), Member States may not require any labelling or marking bearing the name or composition. However, the provisions of Articles 8 and 9 shall apply where such products bear a label or marking giving the name or composition, or a trade mark or name of an undertaking which incorporates, on its own or as an adjective or as a root, either one of the names listed in Annex I or a name liable to be confused therewith;

(b) where textile products listed in Annex IV are of the same type and composition, they may be offered for sale together under an inclusive label giving the composition particulars laid down by this Directive;

(c) the composition of textile products sold by the metre need be shown only on the length or roll offered for sale.

2. Member States shall take all necessary steps to ensure that the products referred to in (b) and (c) of paragraph 1 are offered for sale in such a way that the end consumer can fully acquaint himself with the composition of these products.

Article 11

Member States shall take all necessary measures to ensure that any information supplied when textile products are placed on the market cannot be confused with the names and particulars laid down by this Directive.

Article 12

For the purposes of applying Article 8 (1) and the other provisions of this Directive relating to the labelling of textile products, the fibre percentages referred to in Articles 4, 5 and 6 shall be determined without taking account of the following items:

1. for all textile products:

non-textile parts, selvages, labels and badges, edgings and trimmings not forming an integral part of the product, buttons and buckles covered with textile materials, accessories, decorations, non-elastic ribbons, elastic threads and bands added at specific and limited points of the product and, subject to the conditions specified in Article 7, visible, isolable fibres which are purely decorative and antistatic fibres;

2. (a) for floor coverings and carpets: all components other than the use-surface;

(b) for upholstery fabrics: binding and filling warps and wefts which do not form part of the use-surface;

for hangings and curtains: binding and filling warps and wefts which do not form part of the right side of the fabric;

(c) for other textile products: base or underlying fabrics, stiffenings and reinforcements, inter-linings and canvas backings, stitching and assembly threads unless they replace the warp and/or weft of the fabric, fillings not having an insulating function and, subject to Article 9 (1), linings.

For the purposes of this provision:

— the base or underlying material of textile products which serve as a backing for the use-surface, in particular in blankets and double fabrics, and the backings of velvet or plush fabrics and kindred products shall not be regarded as backings to be removed.

— 'stiffenings and reinforcements' mean the yarns or materials added at specific and limited points of the textile products to strengthen them or to give them stiffness or thickness.

3. fatty substances, binders, weightings, sizings and dressings, impregnating products, additional dyeing and printing products and other textile processing products. In the absence of Community provisions, Member States shall take all necessary measures to ensure that these items are not present in quantities liable to mislead the consumer.

Article 13

1. Checks on whether the composition of textile products is in conformity with the information supplied in accordance with this Directive shall be carried out by the methods of analysis specified in the Directives referred to in paragraph 2.

For this purpose, the fibre percentages in Articles 4, 5 and 6 shall be determined by applying to the anhydrous mass of each fibre the appropriate agreed allowance laid down in Annex II, after having removed the items referred to in Article 12 (1), (2) and (3).

2. Separate directives will specify the methods of sampling and analysis to be used in Member States to determine the fibre composition of products covered by this Directive.

Article 14

1. No Member State may, for reasons connected with names or composition specifications, prohibit or impede the placing on the market of textile products which satisfy the provisions of this Directive.

2. The provisions of this Directive shall not preclude the application of the provisions in force in each Member State on the protection of industrial and commercial property, on indications of provenance, marks of origin and the prevention of unfair competition.

Article 15

The provisions of this Directive shall not apply to textile products which:

1. are intended for export to third countries;
2. enter Member States, under customs control, for transit purposes;
3. are imported from third countries for inward processing;
4. are contracted out to persons working in their own homes, or to independent firms that make up work from materials supplied without the property therein being transferred for consideration.

Article 16

1. The additions to Annex I and the additions and amendments to Annex II to this Directive which are necessary for adapting these Annexes to technical progress shall be adopted in accordance with the procedure laid down in Article 6 of Directive 96/73/EC.

2. The new method of quantitative analysis for binary and ternary mixtures other than those referred to in Directive 96/73/EC and Council Directive 73/44/EEC of 26 February 1973 on the approximation of the laws of the Member States relating to the quantitative analysis of ternary fibre mixtures ⁽¹⁾ shall also be determined by that procedure.

3. The Committee referred to in Article 5 of Directive 96/73/EC is called the 'Committee for Directives relating to Textile Names and Labelling'.

Article 17

Member States shall communicate to the Commission the texts of the main provisions of national law which they adopt in the field covered by this Directive.

Article 18

The Directive listed in Annex V, part A are hereby repealed, without prejudice to the obligations of the Member States concerning the time limits for transposition set out in Annex V, part B.

References to the repealed Directives shall be construed as references to this Directive and should be read in accordance with the correlation table set out in Annex VI.

Article 19

This Directive is addressed to the Member States.

This Directive shall enter into force on the 20th day following that of its publication in the *Official Journal of the European Communities*.

Done at Brussels, 16 December 1996.

For the European Parliament

The President

K. HÄNSCH

For the Council

The President

I. YATES

⁽¹⁾ OJ No L 83, 30. 3. 1973, p. 1.

ANNEX I

TABLE OF TEXTILE FIBRES

Nos	Name	Fibre description
1	wool ⁽¹⁾	Fibre from sheep's or lambs' fleeces (<i>Ovis aries</i>)
2	alpaca, llama, camel, kashmir, mohair, angora vicuna, yak, guanaco, beaver, otter, followed or not by the name 'wool' or 'hair' ⁽¹⁾	hair of the following animals: alpaca, llama, camel, kashmir goat, angora goat, angora rabbit, vicuna, yak, guanaco, beaver, otter
3	animal or horsehair, with or without an indication of the kind of animal (e.g. cattle hair, common goat hair, horsehair)	hair of the various animals not mentioned under 1 or 2
4	silk	fibre obtained exclusively from silk-secreting insects
5	cotton	fibre obtained from the bolls of the cotton plant (<i>Gossypium</i>)
6	kapok	fibre obtained from the inside of the kapok fruit (<i>Ceiba pentandra</i>)
7	flax	fibre obtained from the bast of the flax plant (<i>Linum usitatissimum</i>)
8	true hemp	fibre obtained from the bast of hemp (<i>Cannabis sativa</i>)
9	jute	fibre obtained from the bast of <i>Corchorus olitorius</i> and <i>Corchorus capsularis</i> . For the purposes of this Directive, bast fibres obtained from the following species shall be treated in the same way as jute: <i>Hibiscus cannabinus</i> , <i>Hibiscus sabdariffa</i> , <i>Abutilon avicennae</i> , <i>Urena lobata</i> , <i>Urena sinuata</i>
10	abaca (Manila hemp)	fibre obtained from the sheathing leaf of <i>Musa textilis</i>
11	alfa	fibre obtained from the leaves of <i>Stipa tenacissima</i>
12	coir (coconut)	fibre obtained from the fruit of <i>Cocos nucifera</i>
13	broom	fibre obtained from the bast of <i>Cytisus scoparius</i> and/or <i>Spartium junceum</i>
14	ramie	fibre obtained from the bast of <i>Boehmeria nivea</i> and <i>Boehmeria tenacissima</i>
15	sisal	fibre obtained from the leaves of <i>agave sisalana</i>
16	Sunn	fibre from the bast of <i>Crotalaria juncea</i>
17	Henequen	fibre from the bast of <i>Agave Fourcroydes</i>
18	Maguey	fibre from the bast of <i>Agave Cantala</i>
19	acetate	cellulose acetate fibre wherein less than 92 % but at least 74 % of the hydroxyl groups are acetylated
20	alginate	fibre obtained from metallic salts of alginic acid

Nos	Name	Fibre description
21	cupro (cuprammonium rayon)	regenerated cellulose fibre obtained by the cuprammonium process
22	modal	a fibre of regenerated cellulose having a high breaking force and high wet modulus. The breaking force (B_C) in the conditioned state and the force (B_M) required to produce an elongation of 5 % in the wet state are: $B_C \text{ (CN)} \geq 1,3 \sqrt{T} + 2 T$ $B_M \text{ (CN)} \geq 0,5 \sqrt{T}$ where T is the mean linear density in decitex
23	protein ⁽¹⁾	fibre obtained from natural protein substances regenerated and stabilized through the action of chemical agents
24	triacetate	cellulose acetate fibre wherein at least 92 % of the hydroxyl groups are acetylated
25	viscose	regenerated cellulose fibre obtained by the viscose process for filament and discontinuous fibre
26	acrylic ⁽¹⁾	fibre formed of linear macromolecules comprising at least 85 % (by mass) in the chain of the acrylonitrilic pattern
27	chlorofibre	fibre formed of linear macromolecules having in their chain more than 50 % by mass of chlorinated vinyl or chlorinated vinylidene monomeric units
28	fluorofibre	fibre formed of linear macromolecules made from fluorocarbon aliphatic monomers
29	modacrylic ⁽²⁾	fibre formed of linear macromolecules having in the chain more than 50 % and less than 85 % (by mass) of the acrylonitrilic pattern
30	polyamide or nylon ⁽²⁾	fibre formed of linear macromolecules having in the chain the recurring amide functional group
31	polyester	fibre formed of linear macromolecules comprising at least 85 % (by mass) in the chain of an ester of a diol and terephthalic acid
32	polyethylene ⁽²⁾	fibre formed of un-substituted aliphatic saturated hydrocarbon linear macromolecules
33	polypropylene ⁽²⁾	fibre formed of an aliphatic saturated hydrocarbon linear macromolecule where one carbon atom in two carries a methyl side chain in an isotactic disposition and without further substitution
34	polycarbamide ⁽²⁾	fibre formed of linear macromolecules having in the chain the recurring ureylene (NH—CO—NH) functional group
35	polyurethane ⁽²⁾	fibre formed of linear macromolecules composed of chains with the recurring urethane functional group
36	vinylal	fibre formed of linear macromolecules whose chain is constituted by poly(vinyl alcohol) with differing levels of acetalization
37	triviny ⁽²⁾	fibre formed of acrylonitrile terpolymer, a chlorinated vinyl monomer and a third vinyl monomer, none of which represents as much as 50 % of the total mass

Nos	Name	Fibre description
38	elastodiene ⁽²⁾	elastofibre composed of natural or synthetic polyisoprene, or composed of one or more dienes polymerized with or without one or more vinyl monomers, and which, when stretched to three times its original length and released, recovers rapidly and substantially to its initial length
39	elastane	elastofibre composed of at least 85 % (by mass) of a segmented polyurethane, and which, when stretched to three times its original length and released, recovers rapidly and substantially to its initial length
40	glass fibre	fibre made of glass
41	name corresponding to the material of which the fibres are composed, e.g. metal (metallic, metallized), asbestos, paper, followed or not by the word 'yarn' or 'fibre'	fibres obtained from miscellaneous or new materials not listed above

⁽¹⁾ The name 'wool' in item 1 of this Annex may also be used to indicate a mixture of fibres from sheep's or lambs' fleeces and the hairs listed in the third column of item 2.

This provision is applicable to the textile products listed in Articles 4 and 5 and to those referred to in Article 6, provided that the latter are partly composed of the fibres listed in items 1 and 2.

⁽²⁾ The word 'fibre' is understood.

ANNEX II

**AGREED ALLOWANCES USED TO CALCULATE THE MASS OF FIBRES CONTAINED IN A
TEXTILE PRODUCT**

Fibre No	Fibres	Percentages
1—2	Wool and animal hair:	
	combed fibres	18,25
	carded fibres	17,00 ⁽¹⁾
3	Animal hair:	
	combed fibres	18,25
	carded fibres	17,00 ⁽¹⁾
	Horsehair:	
	combed fibres	16,00
	carded fibres	15,00
4	Silk	11,00
5	Cotton:	
	normal fibres	8,50
	mercerized fibres	10,50
6	Kapok	10,90
7	Flax	12,00
8	True hemp	12,00
9	Jute	17,00
10	Abaca	14,00
11	Alfa	14,00
12	Coir	13,00
13	Broom	14,00
14	Ramie (bleached fibre)	8,50
15	Sisal	14,00
16	Sunn	12,00
17	Henequen	14,00
18	Maguey	14,00
19	Acetate	19,00
20	Alginate	20,00
21	Cupro	13,00
22	Modal	13,00
23	Protein	17,00
24	Triacetate	7,00
25	Viscose	13,00
26	Acrylic	2,00
27	Chlorofibre	2,00
28	Fluorofibre	0,00
29	Modacrylic	2,00
30	Polyamide or nylon:	
	discontinuous fibre	6,25
	filament	5,75

⁽¹⁾ The agreed allowances of 17,00 % shall also be applied where it is impossible to ascertain whether the textile product containing wool and/or animal hair is combed or carded.

Fibre No	Fibres	Percentages
31	Polyester:	
	discontinuous fibre	1,50
	filament	1,50
32	Polyethylene	1,50
33	Polypropylene	2,00
34	Polycarbamide	2,00
35	Polyurethane	
	discontinuous fibre	3,50
	filament	3,00
36	Vinylal	5,00
37	TrivinyI	3,00
38	Elastodiene	1,00
39	Elastane	1,50
40	Glass fibre:	
	with an average diameter of over 5 µm	2,00
	with an average diameter of 5 µm or less	3,00
41	Metal fibre	2,00
	Metallized fibre	2,00
	Asbestos	2,00
	Paper yarn	13,75

ANNEX III

PRODUCTS WHICH CANNOT BE MADE SUBJECT TO MANDATORY LABELLING OR MARKING

(Article 10 (1) (a))

1. Sleeve-supporting armbands
2. Watch straps of textile materials
3. Labels and badges
4. Stuffed pan-holders of textile materials
5. Coffee cosy covers
6. Tea cosy covers
7. Sleeve protectors
8. Muffs other than in pile fabric
9. Artificial flowers
10. Pin cushions
11. Painted canvas
12. Textile products for base and underlying fabrics and stiffenings
13. Felts
14. Old made-up textile products, where explicitly stated to be such
15. Gaiters
16. Packagings, not new and sold as such
17. Felt hats
18. Containers which are soft and without foundation, saddlery, of textile materials
19. Travel goods of textile materials
20. Hand-embroidered tapestries, finished or unfinished, and materials for their production, including embroidery yarns, sold separately from the canvas and specially presented for use in such tapestries
21. Slide fasteners
22. Buttons and buckles covered with textile materials
23. Book covers of textile materials
24. Toys
25. Textile parts of footwear, excepting warm linings
26. Table mats having several components and a surface area of not more than 500 cm²
27. Oven gloves and cloths
28. Egg cosies
29. Make-up cases
30. Tobacco pouches of textile fabric
31. Spectacle, cigarette and cigar, lighter and comb cases of textile fabric
32. Protective requisites for sports with the exception of gloves
33. Toilet cases
34. Shoe-cleaning cases
35. Funeral items

36. Disposable articles, with the exception of wadding
For the purposes of this Directive, textile articles designed to be used once only or for a limited time, and the normal use of which precludes any restoring for subsequent use for the same or a similar purpose, are to be regarded as disposable
 37. Textile articles subject to the rules of the *European Pharmacopoeia* and covered by a reference to those rules, non-disposable bandages for medical and orthopaedic use and orthopaedic textile articles in general
 38. Textile articles including cordage, ropes and string, subject to item 12 of Annex IV, normally intended:
 - (a) for use as equipment components in the manufacture and processing of goods;
 - (b) for incorporation in machines, installations (e.g. for heating, air conditioning or lighting), domestic and other appliances, vehicles and other means of transport, or for their operation, maintenance or equipment, other than tarpaulin covers and textile motor vehicle accessories sold separately from the vehicle
 39. Textile articles for protection and safety purposes such as safety belts, parachutes, life-jackets, emergency chutes, fire-fighting devices, bulletproof waistcoats and special protective garments (e.g. protection against fire, chemical substances or other safety hazards)
 40. Air-supported structures (e.g. sports halls, exhibition stands or storage facilities), provided that particulars of the performances and technical specifications of these articles are supplied
 41. Sails
 42. Animal clothing
 43. Flags and banners
-

ANNEX IV

PRODUCTS FOR WHICH ONLY INCLUSIVE LABELLING OR MARKING IS OBLIGATORY

(Article 10 (1) (b))

1. Floorcloths
 2. Cleaning cloths
 3. Edgings and trimmings
 4. Passementerie
 5. Belts
 6. Braces
 7. Suspenders and garters
 8. Shoe and boot laces
 9. Ribbons
 10. Elastic
 11. New packaging sold as such
 12. Packing string and agricultural twine; string, cordage and ropes other than those falling within item 38 of Annex III ⁽¹⁾.
 13. Table mats
 14. Handkerchiefs
 15. Bun nets and hair nets
 16. Ties and bow ties for children
 17. Bibs; washgloves and face flannels
 18. Sewing, mending and embroidery yarns presented for retail sale in small quantities with a net weight of 1 gram or less
 19. Tape for curtains and blinds and shutters
-

⁽¹⁾ For the products falling within this item and sold in cut lengths, the inclusive labelling shall be that of the reel. The cordage and ropes falling within this item include those used in mountaineering and water sports.

ANNEX V

PART A

REPEALED DIRECTIVES

(referred to in Article 18)

- Council Directive 71/307/EEC (OJ No L 185, 16. 8. 1971, p. 16), and its successive amendments:
- Council Directive 75/36/EEC (OJ No L 14, 20. 1. 1975, p. 15)
- Council Directive 83/623/EEC (OJ No L 353, 15. 12. 1983, p. 8).
- Commission Directive 87/140/EEC (OJ No L 56, 26. 2. 1987, p. 24).

PART B

TIME LIMITS FOR TRANSPOSITION

Directive	Time limits	
	To permit trade in those products which comply with this Directive	To prohibit trade in those products which do not comply with this Directive
71/307/EEC	29 January 1973	29 January 1975
75/36/EEC		
83/623/EEC	29 November 1985	29 May 1987
87/140/EEC	1 September 1988	

ANNEX VI

CORRELATION TABLE

This Directive	Directive 71/307/EEC	This Directive	Directive 71/307/EEC
Article 1	Article 1	Annex II, No 4	Annex II, No 4
Article 2	Article 2	Annex II, No 5	Annex II, No 5
Article 3	Article 3	Annex II, No 6	Annex II, No 6
Article 4	Article 4	Annex II, No 7	Annex II, No 7
Article 5	Article 5	Annex II, No 8	Annex II, No 8
Article 6	Article 6	Annex II, No 9	Annex II, No 9
Article 7	Article 7	Annex II, No 10	Annex II, No 10
Article 8	Article 8	Annex II, No 11	Annex II, No 11
Article 9	Article 9	Annex II, No 12	Annex II, No 12
Article 10	Article 10	Annex II, No 13	Annex II, No 13
Article 11	Article 11	Annex II, No 14	Annex II, No 15
Article 12	Article 12	Annex II, No 15	Annex II, No 16
Article 13	Article 13	Annex II, No 16	Annex II, No 16 (a)
Article 14	Article 14	Annex II, No 17	Annex II, No 16 (b)
Article 15	Article 15	Annex II, No 18	Annex II, No 16 (c)
Article 16	Article 15 (a)	Annex II, No 19	Annex II, No 17
Article 17	Article 16 (3)	Annex II, No 20	Annex II, No 18
Article 18	—	Annex II, No 21	Annex II, No 19
Article 19	Article 17	Annex II, No 22	Annex II, No 20
Annex I, No 1	Annex I, No 1	Annex II, No 23	Annex II, No 21
Annex I, No 2	Annex I, No 2	Annex II, No 24	Annex II, No 22
Annex I, No 3	Annex I, No 3	Annex II, No 25	Annex II, No 23
Annex I, No 4	Annex I, No 4	Annex II, No 26	Annex II, No 24
Annex I, No 5	Annex I, No 5	Annex II, No 27	Annex II, No 25
Annex I, No 6	Annex I, No 6	Annex II, No 28	Annex II, No 26
Annex I, No 7	Annex I, No 7	Annex II, No 29	Annex II, No 27
Annex I, No 8	Annex I, No 8	Annex II, No 30	Annex II, No 28
Annex I, No 9	Annex I, No 9	Annex II, No 31	Annex II, No 29
Annex I, No 10	Annex I, No 10	Annex II, No 32	Annex II, No 30
Annex I, No 11	Annex I, No 11	Annex II, No 33	Annex II, No 31
Annex I, No 12	Annex I, No 12	Annex II, No 34	Annex II, No 32
Annex I, No 13	Annex I, No 13	Annex II, No 35	Annex II, No 33
Annex I, No 14	Annex I, No 15	Annex II, No 36	Annex II, No 34
Annex I, No 15	Annex I, No 16	Annex II, No 37	Annex II, No 35
Annex I, No 16	Annex I, No 16 (a)	Annex II, No 38	Annex II, No 36
Annex I, No 17	Annex I, No 16 (b)	Annex II, No 39	Annex II, No 37
Annex I, No 18	Annex I, No 16 (c)	Annex II, No 40	Annex II, No 38
Annex I, No 19	Annex I, No 17	Annex II, No 41	Annex II, No 39
Annex I, No 20	Annex I, No 18	Annex III, No 1	Annex III, No 1
Annex I, No 21	Annex I, No 19	Annex III, No 2	Annex III, No 2
Annex I, No 22	Annex I, No 20	Annex III, No 3	Annex III, No 3
Annex I, No 23	Annex I, No 21	Annex III, No 4	Annex III, No 4
Annex I, No 24	Annex I, No 22	Annex III, No 5	Annex III, No 5
Annex I, No 25	Annex I, No 23	Annex III, No 6	Annex III, No 6
Annex I, No 26	Annex I, No 24	Annex III, No 7	Annex III, No 7
Annex I, No 27	Annex I, No 25	Annex III, No 8	Annex III, No 8
Annex I, No 28	Annex I, No 26	Annex III, No 9	Annex III, No 9
Annex I, No 29	Annex I, No 27	Annex III, No 10	Annex III, No 10
Annex I, No 30	Annex I, No 28	Annex III, No 11	Annex III, No 11
Annex I, No 31	Annex I, No 29	Annex III, No 12	Annex III, No 12
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