

STANDARD

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Surface active agents — Evaluation of certain effects of laundering — Methods of analysis and test for unsoiled cotton control cloth

Agents de surface — Contrôle de certains effets de blanchissage — Méthodes d'analyse et d'essai d'un tissu de coton témoin non souillé



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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 4312 was prepared by Technical Committee ISO/TC 91, *Surface active agents*.

This second edition cancels and replaces the first edition (ISO 4312 : 1979), and its addendum (ISO 4312 : 1979/add. 1 : 1983), of which it constitutes a minor revision.

Annexes A to C form an integral part of this International Standard. Annex D, which was previously ISO 4312 : 1979/Add. 1 : 1983, is for information only.

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Introduction

It will be recalled that some effects produced by laundering of textiles can be evaluated by means of test pieces of unsoiled cotton control cloth which are washed together with normally soiled textile articles. It is impossible to effect this evaluation with normally soiled textile articles themselves since these are subject to wear and to modification, which cannot be controlled, due to actual use between successive launderings.

This wear and these modifications are not part of the effects of laundering and, furthermore, their extreme variability would make the measurements very difficult to reproduce and even harder to compare between one laboratory and another. In addition, it is hardly ever possible to operate with normally soiled textiles having exactly standardized properties.

The use of test pieces of strictly defined unsoiled cotton control cloth enables the causes of variations which are extraneous to the laundering process itself to be largely eliminated. For this reason, the use of test pieces of cotton control cloth has been recognized as essential for verifying the laundering processes employed by industrial laundries.

Conclusions based on the behaviour of the unsoiled control cloth cannot be used to predict that of other textiles laundered in the same way, if these differ too much from the control cloth with regard to the nature of the fibres, the yarn linear density, the mass per unit surface, the presence of finishes or the initial degree of wear. In such cases, the results obtained on the control cloth can at most show qualitative differences between different laundering processes or variations of a process.

When the unsoiled cotton control cloth is used to determine the influence of a single factor (for example the type of washing machine, the nature or concentration of the detergent, the nature or concentration of the bleaching agent) from the point of view of the effects produced on the textiles, the comparisons are only valid, of course, so long as all the other factors are kept constant. In particular, care should be taken to see that the test pieces of cotton control cloth to be used come from the same consignment, that the normally soiled textiles are always of the same kind and have a uniform degree of soiling, and that the hardness of the water is always the same (so long as it is not precisely the influence of hardness that is to be studied).

It follows from this that it is advisable in practice to compare the results obtained in different laboratories with one another only after a preliminary study has provided an assurance that all the conditions for comparison have been met.

In particular cases, it may be decided to determine only certain of the characteristics from among those the determination of which is described in this International Standard.

This International Standard should be read in conjunction with ISO 2267.

Surface active agents — Evaluation of certain effects of laundering — Methods of analysis and test for unsoiled cotton control cloth

1 Scope

This International Standard specifies the methods to be used to determine, under strictly controlled conditions, certain characteristics of unsoiled cotton control cloth, namely intrinsic greying and yellowing, increase in organic deposit content and incineration residue, the overall decrease in breaking strength, the decrease in breaking strength resulting from chemical degradation of the cellulose and the decrease in breaking strength resulting from mechanical factors in laundering both before and after processing, so that certain effects of laundering can be evaluated.

For the purpose of the routine assessment of the affects of processing of cotton textile articles in commercial laundries, the application of some of the methods only may be appropriate. Furthermore, while the methods given in this International Standard evaluate the wear caused by vigorous mechanical action, they do not distinguish between the effects of smaller differences in mechanical action during laundering.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards listed below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 139 : 1973, *Textiles — Standard atmospheres for conditioning and testing*.

ISO 1628-1 : 1984, *Plastics — Guidelines for the standardization of methods for the determination of viscosity number and limiting viscosity number of polymers in dilute solution — Part 1: General conditions*.

ISO 1772 : 1975, *Laboratory crucibles in porcelain and silica*.

ISO 2267 : 1986, *Surface active agents — Evaluation of certain effects of laundering — Method of preparation and use of unsoiled cotton control cloth*.

ISO 3105 : 1976, *Glass capillary kinematic viscometers — Specification and operating instructions*.

ISO 5081 : 1977, *Textiles — Woven fabrics — Determination of breaking strength and elongation (Strip method)*.

CIE Publication No. 17 (E-1.1.) : 1979, *International lighting vocabulary*.

CIE Publication No. 38 (TC-2.3.) : 1977, *Radiometric and photometric properties of materials and their measurement*.

3 Selection of specimens and samples from test pieces

The measurements of intrinsic greying and intrinsic yellowing shall be carried out over the whole of the test piece.

The measurement of breaking strength shall be effected on specimens cut in the direction of the warp, as shown in figure 2 of ISO 2267 : 1986.

The measurement of chemical degradation shall be carried out on an average sample of the warp of the cloth composed of the unravelled threads of the specimens intended for use in the measurement of breaking strength.

The determination of ash and organic deposit shall be carried out on the remaining cloth, i.e. the end strips next to the selvages. This cloth is cut into thin strips of suitable size (for example 1 cm wide and a few centimetres long) which are made into a homogeneous mixture.

4 Determination of intrinsic greying (greying measured in the absence of ultraviolet radiation)

4.1 Scope

This clause specifies a method for the determination of the intrinsic greying of the unsoiled cotton control cloth, due to the 25 (or 50) laundering cycles specified in ISO 2267.