

INTERNATIONAL  
STANDARD

**ISO**  
**105-X09**

Fourth edition  
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**Textiles — Tests for colour fastness —**  
**Part X09:**  
Colour fastness to formaldehyde

*Textiles — Essais de solidité des teintures —*  
*Partie X09: Solidité des teintures au formaldéhyde*



Reference number  
ISO 105-X09:1993(E)

## 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 voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 105-X09 was prepared by Technical Committee ISO/TC 38, *Textiles*, Sub-Committee SC 1, *Tests for coloured textiles and colorants*.

This fourth edition cancels and replaces the third edition (ISO 105-X09:1987), of which it constitutes a minor revision.

ISO 105 was previously published in thirteen "parts", each designated by a letter (e.g. "Part A"), with publication dates between 1978 and 1985. Each part contained a series of "sections", each designated by the respective part letter and by a two-digit serial number (e.g. "Section A01"). These sections are now being republished as separate documents, themselves designated "parts" but retaining their earlier alphanumeric designations. A complete list of these parts is given in ISO 105-A01.

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# Textiles — Tests for colour fastness —

## Part X09: Colour fastness to formaldehyde

### 1 Scope

**1.1** This part of ISO 105 specifies a method for determining the resistance of the colour of textiles of all kinds and in all forms to the action of formaldehyde vapour, as may be encountered in storehouses where fabrics are stored with materials which have undergone a crease-resistant treatment.

**1.2** This method is not suitable for assessing changes in colour which may occur during crease-resist finishing with urea-formaldehyde products, or in subsequent treatment of the dyeing with solutions of formaldehyde.

### 2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 105. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 105 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 105-A01:1989, *Textiles — Tests for colour fastness — Part A01: General principles of testing*.

ISO 105-A02:1993, *Textiles — Tests for colour fastness — Part A02: Grey scale for assessing change in colour*.

### 3 Principle

A specimen of the textile is exposed in a closed container to the action of gaseous formaldehyde. The

change in colour of the specimen is assessed with the grey scale.

### 4 Apparatus and materials

**4.1 Glass bell-jar**, having a capacity of 6 litres.

**4.2 Glass frame**, for suspending the specimen.

**4.3 China dish**, of capacity 50 ml.

**4.4 Formaldehyde solution** (350 g/kg).

**4.5 Grey scale for assessing change in colour**, complying with ISO 105-A02.

### 5 Test specimen

**5.1** If the textile to be tested is fabric, use a specimen measuring 40 mm × 100 mm.

**5.2** If the textile to be tested is yarn, knit it into fabric and use a specimen measuring 40 mm × 100 mm, or make a wick of parallel lengths 100 mm long and about 5 mm in diameter, tied near both ends.

**5.3** If the textile to be tested is loose fibre, comb and compress enough of it to form a sheet measuring 40 mm × 100 mm and sew it on to a piece of cotton adjacent fabric to support the fibres.

### 6 Procedure

**6.1** Fix the specimen to the frame (4.2) so that it hangs free over the china dish (4.3) but does not come into direct contact with the formaldehyde solution (4.4) in the latter.

**6.2** Place 15 ml of the formaldehyde solution (4.4) in the dish.

**6.3** Place the glass bell-jar (4.1) over the glass frame, the specimen and the china dish.

**6.4** Leave the specimen in the formaldehyde-saturated atmosphere at  $20\text{ °C} \pm 2\text{ °C}$  for 24 h. In tropical countries a temperature of  $27\text{ °C} \pm 2\text{ °C}$  may be used.

**6.5** Remove the specimen and hang it for 24 h in fresh air in a room with indirect light and small changes in relative humidity.

**6.6** Assess the change in colour of the specimen with the grey scale (4.5).

## 7 Test report

The test report shall include the following particulars:

- a) the number and date of publication of this part of ISO 105 (i.e. ISO 105-X09:1993);
- b) all details necessary for the identification of the sample tested;
- c) the numerical rating for change in colour of the specimen.

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