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МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ

Textiles — Tests for colour fastness —

Part E03:

Colour fastness to chlorinated water (swimming-bath water)

Textiles — Essais de solidité des teintures —

Partie E03: Solidité des teintures à l'eau chlorée (eau de piscine)

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Reference number
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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.

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 105-E03 was prepared by Technical Committee ISO/TC 38, *Textiles*.

This second edition cancels and replaces the first edition (included in ISO 105-E: 1978), clauses 1, 4, 6, 7 and 8 of which have been technically revised.

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.

Users should note that all International Standards undergo revision from time to time and that any reference made herein to any other International Standard implies its latest edition, unless otherwise stated.

Textiles — Tests for colour fastness —

Part E03:

Colour fastness to chlorinated water (swimming-bath water)

1 Scope and field of application

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 active chlorine in concentrations such as are used to disinfect swimming-bath water (break-point chlorination).

Three alternative test conditions are specified. The active chlorine concentrations of 50 mg/l and 100 mg/l are intended for swimwear. The active chlorine concentration of 20 mg/l is intended for accessories such as beach robes and towels.

2 References

ISO 105, *Textiles — Tests for colour fastness —*

Part A01: General principles of testing.

Part A02: Grey scale for assessing change in colour.

3 Principle

A specimen of the textile is treated with a weak chlorine solution of a given concentration and dried. The change in colour of the specimen is assessed with the grey scale. Three alternative test conditions are specified.

4 Apparatus and reagents

4.1 Suitable mechanical device (see 8.4), consisting of a water bath containing a rotatable shaft which supports, radially, glass or stainless steel containers (75 ± 5 mm in diameter \times 125 ± 10 mm high) of approximately 550 ± 50 ml capacity, the bottom of the containers being 45 ± 10 mm from the centre of the shaft. The shaft/container assembly is rotated at a frequency of 40 ± 2 min⁻¹. The temperature of the water bath is thermostatically controlled to maintain the test solution at the prescribed temperature ± 2 °C.

4.2 Sodium hypochlorite (NaOCl), solution having the following composition:

- active chlorine: 40 to 160 g/l
- sodium chloride (NaCl): 120 to 170 g/l
- sodium hydroxide (NaOH): 20 g/l maximum
- sodium carbonate (Na₂CO₃): 20 g/l maximum
- iron (Fe): 0,01 g/l maximum

4.3 Sodium hypochlorite (NaOCl), solution containing 100 mg of active chlorine per litre, at pH = $7,50 \pm 0,05$ (see 8.1).

4.4 Sodium hypochlorite (NaOCl), solution containing 50 mg of active chlorine per litre, at pH = $7,50 \pm 0,05$ (see 8.2).

4.5 Sodium hypochlorite (NaOCl), solution containing 20 mg of active chlorine per litre, at pH = $7,50 \pm 0,05$ (see 8.3).

4.6 Potassium dihydrogen phosphate (KH₂PO₄).

4.7 Disodium hydrogen phosphate dihydrate (Na₂HPO₄·2H₂O), or **disodium hydrogen phosphate dodecahydrate** (Na₂HPO₄·12H₂O).

4.8 pH-meter, having an accuracy of 0,02 units.

4.9 Distilled water or **deionized water**.

4.10 Grey scale for assessing change in colour (see clause 2).

5 Test specimen

5.1 If the textile to be tested is fabric, use a specimen 10 cm \times 4 cm.

5.2 If the textile to be tested is yarn, knit it into fabric and use a specimen 10 cm \times 4 cm, or make a wick of parallel lengths, 10 cm long and about 0,5 cm in diameter, tied near both ends.