International Standard

ISO 20701

IULTCS IUF 427

Leather — Tests for colour fastness — Colour fastness to saliva

Cuir — Essais de solidité des coloris — Solidité des coloris à la salive

Second edition
2024-08

Reference numbers
ISO 20701:2024(en)
IULTCS/IUF 427:2024(en)

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents

Page

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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

ISO draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at www.iso.org/patents. ISO shall not be held responsible for identifying any or all such patent rights.

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

IULTCS, originally formed in 1897, is a world-wide organization of professional leather societies to further the advancement of leather science and technology. IULTCS has three Commissions, which are responsible for establishing international methods for the sampling and testing of leather. ISO recognizes IULTCS as an international standardizing body for the preparation of test methods for leather.

This document was prepared by the Fastness Tests Commission of the International Union of Leather Technologists and Chemists Societies (IUF Commission, IULTCS), in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 289, *Leather*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 20701:2017), which has been technically revised.

The main changes are as follows:

— in Clauses 2, 4 and 9 the leather specific reference, ISO 7906, has been included;

— alignment with the revised terminology in ISO 2418:2023.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Leather — Tests for colour fastness — Colour fastness to saliva

1 Scope

This document specifies a method for determining the colour fastness to saliva of all kinds of leathers, independent of the colouring procedure applied.

The method uses an artificial saliva solution to simulate whether colouring materials can migrate from leather to the mouth or to the mucous membranes.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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

ISO 105-A03, *Textiles — Tests for colour fastness — Part A03: Grey scale for assessing staining*

ISO 105-A04, *Textiles — Tests for colour fastness — Part A04: Method for the instrumental assessment of the degree of staining of adjacent fabrics*

ISO 105-A05, *Textiles — Tests for colour fastness — Part A05: Instrumental assessment of change in colour for determination of grey scale rating*

ISO 2418, *Leather — Chemical, physical, mechanical and fastness tests — Position and preparation of specimens for testing*

ISO 3696, *Water for analytical laboratory use — Specification and test methods*

ISO 7906, *Leather — Tests for colour fastness — General principles of testing*

ISO 15115, *Leather — Vocabulary*

EN 15987, *Leather — Terminology — Key definitions for the leather trade*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 15115 and EN 15987 apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

4 Principle

A piece of filter paper is soaked in artificial saliva solution and placed in contact with the leather to be tested. The composite test piece is left for (120 ± 5) min at (37 ± 2) °C. The leather test piece and the filter paper are then dried, and the change in colour of the leather and the staining of the filter paper assessed with the grey scales.

The general principles of testing for colour fastness shall be in accordance with those described in ISO 7906.

5 Apparatus and materials

The usual laboratory apparatus and, in particular, the following shall be used.

5.1 Filter paper, cellulose-type for qualitative analyses, e.g. grade 1. The size of the filter paper is such to allow strips of approximately 15 mm wide and up to 80 mm long to be cut.

NOTE The pore size and thickness are not relevant as it is not being used as a filter.

5.2 Adhesive tape, colourless, self-adhesive plastic tape, about 12 mm wide.

5.3 Film, cling film (as used in households).

5.4 Desiccator, with a grid to support the leather specimen.

5.5 Oven, maintained at (37 ± 2) °C.

5.6 pH meter.

5.7 Volumetric flask, 1 000 ml.

5.8 Grey scale for assessing staining, in accordance with ISO 105-A03.

5.9 Grey scale for assessing change in colour, in accordance with ISO 105-A02.

5.10 Spectrophotometer or colorimeter for assessing change in colour and staining, conforming with ISO 105-A04 and ISO 105-A05.

6 Reagents

Unless otherwise specified, all reagents shall be of analytical grade.

6.1 Demineralised water, at least grade 3 in accordance with ISO 3696.

6.2 Hydrochloric acid solution, c(HCl) = 1 % (mass fraction).

6.3 Artificial saliva salt solution, pH value 6,8 ± 0,1, prepared as specified in Table 1.

Table 1 — Composition of artificial saliva salt solution

Reagents	Mass fraction[a] g/l
Magnesium chloride ($MgCl_2 \cdot 6H_2O$)	0,17
Calcium chloride ($CaCl_2 \cdot 2H_2O$)	0,15
Dipotassium hydrogen phosphate ($K_2HPO_4 \cdot 3H_2O$)	0,76
Potassium carbonate (K_2CO_3)	0,53
Sodium chloride (NaCl)	0,33
Potassium chloride (KCl)	0,75
1 % (mass fraction) hydrochloric acid	To be added until a pH value of 6,8 ± 0,1 is achieved.

[a] Tolerances are ± 1 % of the mass.