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BS EN ISO 17489:2013



BSI Standards Publication

**Leather — Chemical tests —
Determination of tan content
in synthetic tanning agents
(ISO 17489:2013)**

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This British Standard is the UK implementation of EN ISO 17489:2013.

The UK participation in its preparation was entrusted to Technical Committee TCI/69, Footwear, leather and coated fabrics.

A list of organizations represented on this committee can be obtained on request to its secretary.

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Foreword

This document (EN ISO 17489:2013) has been prepared by IULTCS "International Union of Leather Technologists and Chemists Societies" in collaboration with Technical Committee CEN/TC 289 "Leather" the secretariat of which is held by UNI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by May 2014, and conflicting national standards shall be withdrawn at the latest by May 2014.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 17489:2013 has been approved by CEN as EN ISO 17489:2013 without any modification.

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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.

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 documents 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).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

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

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: [Foreword - Supplementary information](#)

ISO 17489 was prepared by the European Committee for Standardization (CEN) Technical Committee CEN/TC 289, *Leather*, in collaboration with the Chemical Tests Commission of the International Union of Leather Technologists and Chemists Societies (IUC Commission, IULTCS), in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

IULTCS, originally formed in 1897, is a worldwide 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.

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Introduction

The ISO Standard, ISO 14088, is the traditional method for analysing the tanning component in a tanning agent. It uses chromium (III) tanned hide powder and determines the proportion of tanning agent that is adsorbed onto the hide powder. The non-adsorbable fraction, consisting largely of inorganic salts, remains in the tanning solution. By determining the dry content of the initial tanning solution and the non-adsorbable fraction, one calculates the adsorbable fraction – this is the tanning component in the tanning agent.

In this manner, the traditional hide powder method is used to determine the tanning strength of tanning agents. However, for reproducible test results this method requires considerable expertise from the operator in the preparation and packing of hide powder filter cartridges. In addition, the time for the filtration can be very long and the method is not suitable when results are needed in a short period of time, such as during the production quality control when manufacturing synthetic tanning agents.

The co-polymers of vinylimidazole and vinylpyrrolidone are used for removing polyphenolic compounds and metals from wine. This polymer-based powder offers a simple and practical alternative to hide powder for the routine testing of synthetic tanning agents, such as in a manufacturing facility. Interlaboratory trials (given in [Table A.1](#)) show the reproducibility and precision of repeat testing is better for the polymer-based powder.

The two procedures, ISO 14088 and ISO 17489, use different adsorbing substrates; consequently, the value for the adsorbable fraction will be different and the results obtained can only be compared when made with the same adsorbing substrate.

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Leather — Chemical tests — Determination of tan content in synthetic tanning agents

1 Scope

This International Standard specifies a simple and practical method of determining the adsorbable fraction of synthetic tanning agents using a polymer-based product. It is particularly suitable for measuring the batch-to-batch consistency of synthetic tanning agents.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 3696:1987, *Water for analytical laboratory use — Specification and test methods*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1

tan content

adsorbable fraction of a synthetic tanning agent when mixed in a water solution with a crosslinked, insoluble vinylimidazole/ vinylpyrrolidone copolymer product

4 Principle

An acidified synthetic tanning agent solution and an insoluble copolymer product are mixed at room temperature. The insoluble copolymer absorbs polyphenols from the tanning agent. The dry content of the solution before and after mixing with the absorbing copolymer are measured. The difference is the adsorbable fraction, called the tan content.

5 Reagents

5.1 **Crosslinked, insoluble vinylimidazole/vinylpyrrolidone copolymer** (see [Annex B](#)).

5.2 **Formic acid solution**, a mass fraction of 50 %.

5.3 **Gelatine, pure**, AR grade.

5.4 **Sodium chloride**, AR grade.

5.5 **Deionised or distilled water**, in compliance with grade 3 in ISO 3696:1987.

6 Apparatus

Normal laboratory equipment and the following items: