INTERNATIONAL STANDARD

**ISO 11936**

**IULTCS IUC 42**

First edition
2023-07

# Leather — Determination of total content of certain bisphenols

*Cuir — Détermination de la teneur totale en certains bisphénols*

Reference numbers
ISO 11936:2023(E)
IULTCS/IUC 42:2023(E)

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Published in Switzerland



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# Foreword

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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).

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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 Chemical Test Commission of the International Union of Leather Technologists and Chemists Societies (IUC 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).

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.


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# Introduction

This document includes a procedure for analysing certain bisphenols using liquid chromatography (LC) equipment. With this analytical method, bisphenol A, bisphenol B, bisphenol F and bisphenol S can be determined.

In the leather industry, bisphenol F can be an impurity in synthetic tanning agents. Bisphenol S is a monomer that is used to manufacture synthetic tanning agents, which can lead to residues in the final product.

Bisphenol A is an endocrine disruptor for environmental organisms. Bisphenol A is a synthetic organic chemical primarily used as a monomer in the manufacture of high-performance plastics, other polymers, such as resins, and in the colour developer for thermoprint paper. Bisphenol B is similar to bisphenol A and is used in the manufacture of plastics and resins.

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# Leather — Determination of total content of certain bisphenols

## 1 Scope

This document specifies a method for determining the total content (solvent extractible) of the following bisphenols in leather:

— bisphenol A;

— bisphenol B;

— bisphenol F;

— bisphenol S.

This method requires the use of liquid chromatography (LC) with either a single quadrupole mass spectrometer (MS), a triple quadrupole mass spectrometer (MS/MS), an ultraviolet (UV) detector, a diode array detector (DAD) or a fluorescence detector (FLD) to identify and quantify the bisphenols.

NOTE This method can also be used for other bisphenols if they are validated by the laboratory.

## 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 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 4044, *Leather — Chemical tests — Preparation of chemical test samples*

## 3 Terms and definitions

No terms and definitions are listed in this document.

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

The leather sample is extracted in methanol using an ultrasonic bath. Subsequently, an aliquot of the solution can be directly analysed, without further cleaning of the sample, using LC-MS, LC-MS/MS or LC with a UV detector (LC-UV), DAD (LC-DAD) or FLD (LC-FLD).

## 5 Apparatus

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

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