

Leather - Chemical tests - Determination of matter soluble in dichloromethane and free fatty acid content (ISO 4048:2018)

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

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English Version

**Leather - Chemical tests - Determination of matter soluble
in dichloromethane and free fatty acid content (ISO
4048:2018)**

Cuir - Essais chimiques - Dosage des matières solubles
dans le dichlorométhane et des acides gras libres (ISO
4048:2018)

Leder - Chemische Prüfungen - Bestimmung der in
Dichlormethan löslichen Substanzen und des freien
Fettsäuregehalts (ISO 4048:2018)

This European Standard was approved by CEN on 23 May 2018.

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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European foreword

This document (EN ISO 4048:2018) has been prepared by Technical Committee 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of an identical text or by endorsement, at the latest by January 2019, and conflicting national standards shall be withdrawn at the latest by January 2019.

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

This document supersedes EN ISO 4048:2008.

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, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 4048:2018 has been approved by CEN as EN ISO 4048:2018 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).

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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 the following URL: www.iso.org/iso/foreword.html

This document was prepared by the Chemical Tests 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*, the secretariat of which is held by UNI, in accordance with the Agreement on technical co-operation between ISO and CEN (Vienna Agreement).

It is based on IUC 4 published in *J. Soc. Leather Tech. Chem.*, **49**, p. 10, 1965, and declared an official method of the IULTCS in 1965.

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 the testing of leather. ISO recognizes IULTCS as an international standardizing body for the preparation of test methods for leather.

This third edition cancels and replaces the second edition (ISO 4048:2008), which has been technically revised as follows:

- [5.1](#) text for dichloromethane has been simplified;
- [Clause 7](#) has been revised to allow analysis of a single sample, for example when too little sample is available;
- [8.1](#) has been revised to allow a smaller sample for determining only dichloromethane soluble substances;
- [8.2.1](#) and [8.3](#) have been revised to define a drying time of at least 6 h, and the last paragraph of [8.3](#) has been deleted;
- previous [subclauses 9.1](#) and [9.2](#) have been moved to a new informative [Annex B](#);
- [Clause 9](#) has been separated into [9.1](#) and [9.2](#) and modified to allow for presenting results for a single sample;

- [Clause 10 d\)](#) has been revised to allow for the changes in [Clause 9](#).

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Leather — Chemical tests — Determination of matter soluble in dichloromethane and free fatty acid content

1 Scope

This document specifies a method for the determination of the substances in leather which are soluble in dichloromethane. This method is applicable to all types of leather.

Not all fatty and similar substances can be extracted from leather with organic solvents; they may be in part soluble and partly bound to the leather. On the other hand, the solvent can dissolve non-fatty substances, for example sulfur and impregnants, both of which cause difficulty in the determination of the acid value and saponification value of the fat.

This document includes two techniques for extraction of the fatty substances: 1) extraction using the Soxhlet apparatus; and 2) extraction using a pressurized extraction system.

As the extraction is frequently done in conjunction with determination of the free fatty acid content of the leather, a suitable procedure for determination of the free fatty acids extracted by this method is included.

The apparatus and technique described in this method are also suitable for the extraction by solvents other than dichloromethane (although the temperature conditions may need to be varied for high pressure extraction).

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 and mechanical and fastness tests — Sampling location*

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

ISO 4684, *Leather — Chemical tests — Determination of volatile matter*

3 Terms and definitions

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

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

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

3.1

extractable substances

fats and other soluble matter which can be extracted from leather with dichloromethane

3.2

free fatty acid content

fatty acid content of the *extractable substances* (3.1) as determined by this method and expressed as oleic acid