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Tobacco and tobacco products — Determination of water content — Gas-chromatographic method

Tabac et produits du tabac — Détermination de la teneur en eau — Méthode par chromatographie en phase gazeuse

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. 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 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.

This document was prepared by Technical Committee ISO/TC 126, *Tobacco and tobacco products*.

This third edition cancels and replaces the second edition (ISO 16632:2013), which has been technically revised.

The main changes compared to the previous edition are as follows:

— the scope of method has been expanded to include cigars and reference smokeless products;

— the reproducibility (R) and repeatability (r) tables from the 2018 international study have been added.

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.

This corrected version of ISO 16632:2021 incorporates the following correction:

— a warning for the safe handling of methanol has been added in 5.2.

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Introduction

This document specifies a gas chromatographic method for the determination of the water content of tobacco and tobacco products. Independent collaborative studies conducted in 2002 and 2018 verified the use of this specified method for a variety of raw tobaccos and tobacco products such as smokeless tobacco, cigarette or cigar filler.

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Tobacco and tobacco products — Determination of water content — Gas-chromatographic method

1 Scope

This document specifies a gas-chromatographic (GC) method for the determination of water content. It is applicable to raw tobacco as well as tobacco taken from finished products. The method is suitable for water contents ranging at least from a mass fraction of 2 % to 55 %.

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

3 Terms and definitions

No terms and definitions are listed in this document.

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 https://www.electropedia.org/

4 Principle

The water content of a sample of tobacco or a tobacco product is determined by methanolic extraction, followed by capillary GC analysis with thermal conductivity detection, using isopropanol as internal standard.

If a size reduction (grinding or cutting) is applied, it can create a decrease in the original water content. Cryogenic techniques may be used to prevent such moisture losses.

5 Reagents

Use only reagents of recognized analytical grade.

5.1 Carrier gas: helium or nitrogen.

5.2 Methanol, with a maximum water content of 1,0 mg/ml.

Methanol is hygroscopic, so it is recommended to cap the bottle with an automatic delivery pipette equipped with a drying tube.

WARNING — Methanol is toxic. There is danger of very serious irreversible effects through inhalation, contact with the skin and if swallowed. Take precautions and read Material Safety Data Sheets (MSDS).

5.3 Internal standard: isopropanol, of at least 99 % purity.

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