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Material used for producing wrappings for cigarette filters, cigarettes and other tobacco products — Determination of acetate and citrate content — Ion chromatographic method

PROOF/ÉPREUVE

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Foreword

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

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.

Material used for producing wrappings for cigarette filters, cigarettes and other tobacco products — Determination of acetate and citrate content — Ion chromatographic method

1 Scope

This document specifies an ion chromatographic method for the determination of the acetate and citrate content of materials used to produce wrappings for cigarette filters, cigarettes, and other tobacco products.

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 187, *Paper, board and pulps — Standard atmosphere for conditioning and testing and procedure for monitoring the atmosphere and conditioning of samples*

ISO 287, *Paper and board — Determination of moisture content of a lot — Oven-drying method*

ISO 3696, *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.

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/

3.1
acetate content
anhydrous acetic acid content determined by ion chromatographic method

Note 1 to entry: Acetate is generally added to wrapping materials, in particular cigarette paper, as sodium acetate and potassium acetate to influence the burning rate of the cigarette and, consequently, the puff number[1].

3.2
citrate content
anhydrous citric acid content determined by ion chromatographic method

Note 1 to entry: Citrate is generally added to wrapping materials, in particular cigarette paper, as trisodium citrate and tripotassium citrate or mixtures thereof to influence the burning rate of the cigarette and, consequently, the puff number[2].

4 Principle

A sample of the wrapping material is extracted using water of Grade 1 specified in ISO 3696, and the content of acetate and citrate in the extract is determined by ion chromatographic analysis. The response of acetate and citrate ions is measured using a conductivity detector and the corresponding content is quantified against an external standard calibration curve.

5 Reagents

5.1 General

All reagents used shall be of recognized analytical grade. Water of Grade 1 specified in ISO 3696 shall be used.

5.2 Sodium acetate trihydrate, [$CH_3COONa{\cdot}3H_2O$], CAS No[1].: 6131-90-4, > 99 % purity.

5.3 Citric acid monohydrate, [$C_6H_8O_7{\cdot}H_2O$], CAS No.: 5949-29-1, > 99 % purity.

6 Apparatus

The usual laboratory apparatus for use in preparation of samples, solutions, standards and, in particular, the following items.

6.1 Conical flasks, of nominal capacity 250 ml.

6.2 Syringe filter, 0,45 µm nylon, or equivalent.

6.3 Electronic or mechanical pipettes.

6.4 Ion chromatograph (IC), consisting of a conductivity detector, conductivity suppressor (device that reduces the background conductance of the eluent), potassium hydroxide (KOH) Eluent Generator Cartridge and data collection system. An eluent degassing unit is recommended.

NOTE A gradient eluent can be achieved by potassium hydroxide (KOH) Eluent Generator Cartridge, or using a dosing-device for a Dose-in gradient.

6.5 Anion exchange column (non-metallic) with matching guard column.

EXAMPLE Thermo Scientific IonPac® AS15[2].

6.6 Ultrasonic bath.

6.7 Analytical balance, suitable for measuring to the nearest 0,000 1 g.

7 Preparation

7.1 Preparation of labware

Labware shall be cleaned and dried in a manner which ensures that contamination does not occur.

1) Chemical Abstracts Service (CAS) Registry Number® is a trademark of the American Chemical Society (ACS). This information is given for the convenience of users of this document and does not constitute an endorsement by ISO of the product named. Equivalent products may be used if they can be shown to lead to the same results.

2) Thermo Scientific IonPac® AS15 is an example of a suitable product available commercially. This information is provided for the convenience of users of this document and does not constitute an endorsement by ISO. Equivalent products (columns) may be used if they can be shown to lead the same results.

