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INDUSTRY STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

YC/T 216-2026

Replacing YC/T 216-2013

Tobacco and tobacco products - Determination of starch-Continuous flow method

(English Translation)

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Foreword

This document conforms to GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents".

Drafting is scheduled.

This document supersedes YC/T 216-2013 "Determination of Starch in Tobacco and Tobacco Products - Continuous Flow Method", and is consistent with YC/T 216-Compared to 2013, aside from structural adjustments and editorial changes, the main technical changes are as follows.

--Use 90% dimethyl sulfoxide-hydrochloric acid solution instead of 40% perchloric acid solution to extract starch from the sample (see 5.10, 2013).

Version 4.6);

--Use 1 mol/L hydrochloric acid instead of 15% perchloric acid solution (see 5.12, 4.7 in the 2013 edition).

--The preparation methods for starch mixed standard stock solution and series of standard working solutions have been modified (see 5.14, 5.16, 2013 edition).

4.11, 4.12).

--Use centrifuge tubes instead of G3 sintered glass core funnels for ultrasonic extraction, and employ Buchner funnel filtration (see 7.2.1, 2013 edition).

--The temperature and time of ultrasonic extraction have been changed (see 7.2.2, 6.2 in the 2013 edition).

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

This document was proposed by the State Tobacco Monopoly Administration.

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This document is under the jurisdiction of the Cigarette Subcommittee of the National Tobacco Standardization Technical Committee (SAC/TC 144/SC 1).

1 Scope

This document describes a continuous flow method for determining starch content in tobacco and tobacco products.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are listed below.

For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies.

This document.

YC/T 31 Preparation of Tobacco and Tobacco Product Samples and Determination of Moisture Content by Oven Drying Method

3 Terms and Definitions

This document does not contain any terms or definitions that need to be defined.

4 Principles

The sample was treated with ethanol-saturated sodium chloride aqueous solution to remove interfering substances such as pigments, and starch was ultrasonically extracted with dimethyl sulfoxide-hydrochloric acid solution.

It reacts with iodine under acidic conditions to produce a colorimetric reaction, which is then measured by colorimetry.

5 Reagents

Unless otherwise specified, reagents of analytical grade or higher should be used.

5.1
Water, resistivity greater than 18.0 Mohm·cm.

5.2
Amylose and amylopectin, with a purity of not less than 99.8%.

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5.3
Sodium chloride.

5.4
Anhydrous ethanol.

5.5
Dimethyl sulfoxide.

5.6
Concentrated hydrochloric acid solution, 37% (mass fraction).

5.7
Sodium dodecyl sulfate (SDS).

Add 800 mL of anhydrous ethanol (5.4), mix well, cover and let stand for later use.

5.9 90% Dimethyl Sulfoxide-Aqueous Solution. Transfer 450 mL of dimethyl sulfoxide (5.5) into a 500 mL volumetric flask and dilute to volume with water.

5.10 90% Dimethyl Sulfoxide-Hydrochloric Acid Solution. In a fume hood, transfer 22.5 mL of concentrated hydrochloric acid solution (5.6) into a 1000 mL beaker and slowly...

Slowly add 900 mL of dimethyl sulfoxide (5.5) liquid, transfer to a 1000 mL volumetric flask, and dilute to volume with water.

5.11 9% Dimethyl sulfoxide-hydrochloric acid solution. Weigh 0.5 g SDS (5.7) into a 500 mL beaker, add 300 mL of water to dissolve, then add...

Add 50 mL of 90% dimethyl sulfoxide-hydrochloric acid solution (5.10), transfer to a 500 mL volumetric flask, and dilute to volume with water. It is ready for immediate use.

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