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INDUSTRY STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

YC/T 468-2021

Tobacco and tobacco products - Determination of total alkaloids - Continuous flow (potassium thiocyanate) method

(English Translation)

Issued on: January 1, 1970 **Implemented on: January 1, 1970**

Issued by: State Tobacco Monopoly Administration

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for Standardization Work Part 1: Structure and Drafting Rules of Standardization Documents" drafted.

This document replaces YC/T 468-2013 "Continuous Flow (Potassium Thiocyanate) Method for the Determination of Total Phytoalkaloids in Tobacco and Tobacco Products".

Compared with YC/T 468-2013, except for editorial changes, the main technical changes are as follows.

--- Define the scope of application of the standard as "tobacco and tobacco products (tobacco leaves, tobacco stems, reconstituted tobacco leaves and tobacco mixtures)" (see Chapter 1);

--- Added 5% acetic acid solution (see 5.3);

--- Increased system flushing fluid (see 5.4);

--- Modified buffer solution A (see 5.7, 4.10 of the 2013 edition);

--- Modified buffer solution B (see 5.8, 4.11 of the 2013 edition);

--- Modified the flow chart of the continuous flow analyzer for total phytoalkaloids (see Appendix A);

--- Increased repeatability and reproducibility (see Appendix B).

This document uses the redrafted method to modify the use of ISO 22980:2020 "Determination of the total phytoalkaloid content of tobacco (as nicotine) in continuous flow KSCN/DCIC Law.

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Compared with ISO 22980:2020, this document has many adjustments in structure, and the comparison list of chapter number changes between the two documents See Appendix C.

Compared with ISO 22980:2020, there are technical differences in this document. In the outer margin of the clauses involved, a vertical single Lines (|) are marked, and a list of these technical differences and their reasons is given in Appendix D.

Please note that some content of this document may be patented. The issuing agency of this document assumes no responsibility for identifying patents.

1 Scope

This document specifies the continuous determination of total plant alkaloids (as nicotine) in tobacco and tobacco products (tobacco leaves, stems, reconstituted tobacco leaves and tobacco blends) Flow (potassium thiocyanate) determination method.

This document applies to the determination of total plant alkaloids (as nicotine) in tobacco and tobacco products (tobacco leaves, stems, reconstituted tobacco leaves and tobacco blends) Determination.

2 Normative references

The contents of the following documents constitute essential provisions of this document through normative references in the text. Among them, dated citations documents, only the version corresponding to that date applies to this document; for undated references, the latest edition (including all amendments) applies to this document.

GB/T 6682 Analysis Laboratory Water Specifications and Test Methods YC/T 31 Preparation of Tobacco and Tobacco Products Samples and Moisture Determination Oven Method YC/T 247 Determination of Nicotine Purity of Tobacco and Tobacco Products-Silicon Tungstic Acid Gravimetric Method

3 Terms and Definitions

There are no terms and definitions that need to be defined in this document.

4 Principles

Tobacco samples were extracted with water, and the total phytoalkaloids (calculated as nicotine) in the extract were reacted with p-aminobenzenesulfonic acid and cyanogen chloride, which was composed of thiocyanate Potassium acid and sodium dichloroisocyanurate are produced online by reaction. The reaction product was measured with a colorimeter at 460 nm.

Note: The same results can be obtained with 5% acetic acid solution as the extraction solution. If

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total plant alkaloids (as nicotine) and reducing sugars (see YC/T 159-2019), 5% acetic acid extract should be used.

5 Reagents

Unless otherwise specified, only analytically pure and above reagents and first-grade water in accordance with GB/T 6682 are used in the analysis.

5.1 Reference material

Nicotine or nicotine ditartaric acid dihydrate [$C_{10}H_{14}N_2(C_4H_6O_6)_2 \cdot 2H_2O$], check nicotine or ditartaric acid dihydrate according to YC/T 247 the purity of nicotine.

5.2 Polyethoxylauryl ether solution (Brij35 solution)

250g of polyethoxylauryl ether [$(C_2H_4O)_nC_{12}H_{26}O$] was added to 1000mL of water, heated and stirred until dissolved.

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