Chinastandards.org

ICS 65.160
CCS X 87

YC

INDUSTRY STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

YC/T 377-2010

Cigarettes Determination of ammonia in mainstream smoke Immersion treatment Cambridge filter trap-ion chromatography

(English Translation)

Issued on: January 1, 1970 **Implemented on: January 15, 2020**

Issued by: State Tobacco Monopoly Administration

Preview: page 1 of 4 shown, 6 in the full document. Complete English PDF, instant download:
https://chinastandards.org/standards/yc-t-377-2010

Chinastandards.org

Table of Contents

Foreword
1 Scope
2 Normative references
3 Principle
4 Reagent
4.7 Series of standard working solutions

Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009 and GB/T.20001.4-2015.

This standard replaces YC/T 377-2017 ``Ion Chromatography Method for the Determination of Ammonia in Mainstream Cigarette Smoke'', compared with YC/T 377-2017, in addition to editorial changes, the main technical changes are as follows.

---Modified the standard name;

---Added the technical index requirements of the impregnation liquid (see 4.5);

---Modified the recommended series of standard working solution concentration range (see 4.7);

---Deleted the technical index requirements and connection methods of the trap and Appendix A and Appendix B (see 5.3 and 6.1.1 of the 2017 edition);

---Modified the smoking content of cigarettes (see 6.1);

--- Deleted the preparation of gas phase absorption liquid and granular phase extract (see 6.2 and 6.3 of the 2017 edition);

---Added the extraction of flue gas samples (see 6.2);

---Modified the content of analysis sample preparation (see 6.3);

---Modified the calculation formula of ammonia release (see 7.3);

---The detection limit and quantification limit of the method have been increased (see Chapter 8);

--- Increased method repeatability and reproducibility (see Chapter 9).

Please note that certain contents of this document may involve patents. The issuing agency

Preview: page 2 of 4 shown, 6 in the full document. Complete English PDF, instant download:
https://chinastandards.org/standards/yc-t-377-2010

of this document is not responsible for identifying these patents.

This standard was proposed by the State Tobacco Monopoly Administration.

This standard is under the jurisdiction of the National Tobacco Standardization Technical Committee Cigarette Sub-committee (SAC/TC144/SC1).

Drafting organizations of this standard. Shanghai Tobacco Group Co., Ltd., Zhengzhou Tobacco Research Institute, National Tobacco Quality Supervision and Inspection Center, China Tobacco Corporation Beijing Branch, Zhejiang China Tobacco Industry Co., Ltd., Chongqing China Tobacco Industry Co., Ltd., Guizhou China Tobacco Industry Co., Ltd.

Liability Company, Anhui China Tobacco Industry Co., Ltd., Yunnan Tobacco Quality Supervision and Testing Station, Henan China Tobacco Industry Co., Ltd., Guangxi China Tobacco Industry Co., Ltd.

1 Scope

This standard specifies the method for the determination of ammonia in mainstream cigarette smoke by immersion treatment Cambridge filter trap-ion chromatography.

This standard applies to the determination of ammonia in mainstream cigarette smoke.

2 Normative references

The following documents are indispensable for the application of this document. For dated reference documents, only the dated version applies to this document.

For undated references, the latest version (including all amendments) applies to this document.

GB/T 6682 Analytical laboratory water specifications and test methods GB/T 16450 Smoking machine definition and standard conditions for routine analysis GB/T 19609 Smoking machine for routine analysis of cigarettes for determination of total particulate matter and tar

3 Principle

The Cambridge filter pretreated with the hydrochloric acid-ethanol water immersion solution captures the ammonia in the mainstream smoke and extracts it with a dilute hydrochloric acid solution. Extract After filtering with 0.45μm water phase filter membrane, it was analyzed by ion chromatograph. Among them, the ammonium ion (NH4) is separated by ion exchange.

The guide detector quantitatively determines and calculates the amount of ammonia released in mainstream cigarette smoke.

Preview: page 3 of 4 shown, 6 in the full document. Complete English PDF, instant download:
https://chinastandards.org/standards/yc-t-377-2010

4 Reagent

Except for special requirements, analytical grade reagents should be used. The water should meet the first-level water regulations in GB/T 6682.

4.1
Hydrochloric acid. 36%~38% (mass fraction).

4.2
Methanesulfonic acid, chromatographically pure.

4.3
NH4 solution standard material [100mg/L, GB W(E)080220].

4.4
Extraction solution. hydrochloric acid solution (0.01mol/L), which should be reconstituted before each experiment.

4.5
Immersion solution. hydrochloric acid-ethanol aqueous solution (0.05mol/L), the volume ratio of ethanol and water is 1.1, and it should be re-prepared before each experiment.

4.6
Mobile phase. methanesulfonic acid solution (0.1mol/L), accurately pipette 6.7mL methanesulfonic acid (4.2) into a 1L volumetric flask, and dilute to the mark with water.

4.7 Series of standard working solutions

Respectively pipette a certain volume of NH4 solution standard substance (4.3), dilute with the extract (4.4) to a constant volume. Prepare at least 6 standard jobs Solution, ready to use. Table 1 is the recommended series of standard working solution concentrations.

Preview: page 4 of 4 shown, 6 in the full document. Complete English PDF, instant download:
https://chinastandards.org/standards/yc-t-377-2010