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CCS X 04



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 8312-2013

Replacing GB/T 8312-2002

Tea -- Determination of caffeine content

茶 咖啡碱测定

(English Translation)

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Foreword

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

This standard replaces GB/T 8312-2002 "Determination of caffeine in tea." This standard compared with GB/T 8312-2002, the main technical change of the following.

--- Increasing the scope of the standard;

--- Repeatability. the difference between the results of two determinations, caffeine per 100g sample should not exceed 0.2g, modified to duplicate the conditions hereinafter A sample assay results obtained absolute difference may not exceed 10% of the arithmetic mean.

This standard uses redrafted Law Amendment uses ISO 10727:1995 Determination of tea and instant tea in solid coffee "High Performance Liquid Chromatography Alkali content. " This standard and ISO 10727:1995 compared to the main technical changes are as follows.

--- Modify using ISO 10727:1995 standard method used in the present first method;

--- Increased ultraviolet spectrophotometry as a second method of this standard;

--- Repeatability. The absolute difference between the measurement results shall not exceed 5% of the arithmetic mean of revised to 10%;

--- Remove the ISO 10727:1995 Chapter 11 test reports;

--- Remove the ISO 10727:1995 inter-laboratory comparison of results in Appendix A.

This standard also made the following editorial changes.

--- Remove the ISO 10727:1995 Foreword.

The standard proposed by China Federation of Supply and Marketing Cooperatives.

This standard by the National Standardization Technical Committee of tea (SAC/TC339)

centralized.

This standard was drafted. China Federation of Supply and Marketing Cooperatives Hangzhou Tea Research Institute, the National Tea Quality Supervision and Inspection Center.

1 Scope

This standard specifies a high performance liquid chromatography, UV spectrophotometry caffeine in tea apparatus and appliances, reagents and solutions, Methods and results of the calculation method of operation.

This standard applies to the determination of caffeine in tea is also applicable to the determination of caffeine solid instant tea.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version suitable for use herein Member. For undated references, the latest edition (including any amendments) applies to this document.

GB/T 8302 sampling Tea (GB/T 8302-2013, ISO 1839. 1980, NEQ) GB/T 8303 Tea grated dry matter content of the sample preparation and measurement (GB/T 8303-2013, ISO 1572. 1980, MOD)

3 The first method HPLC

3.1 Principle

After the caffeine in tea by boiling water and magnesium oxide mixed extract by high performance liquid chromatography, C18 separation column, UV detector, and standard Comparison of quantitative prospective series.

3.2 Apparatus and appliances

3.2.1

High performance liquid chromatograph. with a UV detector.

3.2.2

Analytical column. C18 (ODS column).

3.2.3

Analytical Balance. a sense of the amount of 0.0001g.

3.3 Reagents and solutions

3.3.1

Unless otherwise indicated, the methods used were of analytical grade reagents (AR), distilled water.

3.3.2

magnesium oxide. heavy, AR.

3.3.3

Methanol. chromatographically pure.

3.3.4

HPLC mobile phase. Take 600mL of methanol (3.3) into the 1400mL of distilled water, mix, through 0.45µm membrane.

3.3.5

Caffeine standard solution. Weigh 125mg of caffeine (purity of not less than 99%) ethanol. water (1.4) was dissolved, the volume to 250mL, Shake, stock standard solution 1mL containing 0.5mg equivalent to caffeine. Draw 1.0mL, 2.0mL, 5.0mL, 10.0mL above criteria Stock solution, add water to 50mL volume as a series of standard working solution per 1mL of the series standard working solution, respectively containing equivalent 10µg, 20µg, 50µg, 100µg caffeine.

3.4.1 Sampling

According to the provisions of GB/T 8302's.