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

YC/T 405.4-2011

**Tobacco and tobacco products - Determination of multi-pesticide
residues - Part 4: Determination of dithiocarbamate pesticides residues
- Gas chromatography-mass spectrometry method
(English Translation)**

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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 is part 4 of YC/T 405 "Determination of Multiple Pesticide Residues in Tobacco and Tobacco Products". YC/T 405 has been issued the following parts are distributed.

- Part 1: High performance liquid chromatography-tandem mass spectrometry;
- Part 2: Gas chromatography for the determination of organochlorine and pyrethroid pesticide residues;
- Part 3: Gas chromatography-mass spectrometry and gas chromatography;
- Part 4: Determination of dithiocarbamate pesticide residues by gas chromatography-mass spectrometry.

This document replaces YC/T 405.4-2011 "Determination of Multiple Pesticide Residues in Tobacco and Tobacco Products-Part 4: Dithioammonium Determination of Carbamate Pesticide Residues by Gas Chromatography-Mass Spectrometry", compared with YC/T 405.4-2011, except for editorial changes, the main the technical changes are as follows.

- a) Change "Stannous chloride" to "Stannous chloride dihydrate" (see 5.4, 4.3 of the 2011 edition);
- b) Change "ultrasonic generator" to "constant temperature water bath oscillator" (see 6.2, 5.2 of the 2011 edition);
- c) increased the temperature of the water bath (see 8.1, 7.1 of the 2011 edition);

d) Changed the oscillation mode (see 8.1, 7.1 of the 2011 edition);

e) The weighing sample volume and the volume of extraction solution have been reduced (see 8.1, 7.1 of the 2011 edition).

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 determination of dithiocarbamate pesticide residues in tobacco and tobacco products by gas chromatography-mass spectrometry (GC-MS) determined method.

This document applies to the determination of dithiocarbamate pesticide residues in tobacco and tobacco products.

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 6379.2 Accuracy (correctness and precision) of measurement methods and results - Part 2: Determining repeatability of standard measurement methods Basic Methods of Reproducibility and Reproducibility 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

3 Terms and Definitions

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

4 Principles

The pulverized tobacco powder samples were placed in a closed system, and reacted with an acidic stannous chloride solution under the conditions of heating and shaking in a water bath.

The carboxylate was decomposed, and the quantitatively released carbon disulfide (CS₂) was absorbed by isooctane, left to cool to room temperature, and the isooctane layer was taken by GC-MS.

The content of CS₂ was determined, and the residual amount of dithiocarbamate was expressed as the content of CS₂.

5 Reagents

Before use, all reagents should be blank tested in the same way as the sample determination to check their purity, the baseline of the blank solvent chromatogram There should be no peaks on the CS2 that interfere with the determination of CS2.

5.1 Water

Comply with GB/T 6682, level 3.

5.2 Isooctane

Chromatographically pure.