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

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**Method of performance testing for ambient ionization mass
spectrometer**

(English Translation)

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Foreword

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

1 Scope

This document describes the method for determining the performance of an open-type direct ionization mass spectrometer.

This document applies to the determination of the performance of open-type direct ionization mass spectrometers.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included.

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 to this document.

GB/T 13966 Terminology for Analytical Instruments

GB/T 32267 Terminology for the Measurement of Performance of Analytical Instruments

GB/T 33864 General Specifications for Mass Spectrometers

3 Terms and Definitions

The terms and definitions defined in GB/T 13966, GB/T 32267, and GB/T 33864, as well as the following terms and definitions, apply to this document.

3.1 Ambient ionization

In an open atmospheric pressure environment, samples requiring no pretreatment, undergoing simple pretreatment, or those that have undergone enrichment and purification are directly ionized.

Miniaturized mass spectrometers are instruments for rapid detection and analysis, obtaining information about the analyte or certain indicators.

Note 2: The response time for rapid detection and analysis is set according to the application scenario, and the typical range is no more than 30 seconds.

Unless otherwise specified, all solvents are chromatographic grade.

The standard substances/standard samples used in the test should be national level II or above standard substances or substances that meet the equivalent standards.

The selection of standard substances/standard samples should cover the typical application scenarios of the instrument, including but not limited to.

- a) Public safety and drug control (e.g., methamphetamine, ketamine, etc.);
- b) Food safety and pesticide/veterinary drug residue testing (e.g., carbofuran, chlorpyrifos, malachite green, etc.);
- c) Detection of toxic and explosive substances [e.g., strychnine, trinitrotoluene (TNT), etc.].

In actual measurements, the specific technical characteristics and main intended use of the open-type direct ionization mass spectrometer (hereinafter referred to as "the instrument") should be considered.

The method involves selecting at least one representative standard substance/standard sample from typical application scenarios for performance determination.

5 Environmental Measurement

5.1

Placement Environment. The instrument should be placed stably, free from strong mechanical vibration and electromagnetic interference.