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

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**Particulates - Bioaerosol sampling and analysis - General
principles**

颗粒 生物气溶胶采样和分析 通则

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Table of Contents

1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Bioaerosol sampling	3
4.1 Overview	3
4.2 Bioaerosol sampling methods	3
4.3 Selection of bioaerosol sampling methods	4
4.4 Selection of bioaerosol sampler	5
4.5 Sampling aids	5
4.6 Sampling procedure	6
5 Bioaerosol analysis	8
5.1 Qualitative analysis of bioaerosols	8
13 References	18

Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009. This standard was proposed and managed by the National Particle Characterization and Classification Inspection and Screen Standardization Technical Committee (SAC/TC168). Drafting organizations of this standard. Institute of Microbiology and Epidemiology, Academy of Military Medical Sciences, Academy of Military Sciences, Qingdao Zhongrui Intelligent Instrument Co., Ltd., Institute of Process Engineering, Chinese Academy of Sciences, Institute of Environmental and Health Related Product Safety, Chinese Center for Disease Control and Prevention, China Institute of Inspection and Quarantine Research Institute, Shandong Agricultural University, Fudan University, Anhui Binken Electric Co., Ltd., Beijing Tuopu Tiancheng Technology Development Co., Ltd., Tianjin Chunxin Purification Refrigeration Equipment Co., Ltd. The main drafters of this standard. Li Jinsong, Li Na, He Chunlei, Li Zhaojun, Zhou Lan, Hu Lingfei, Yang Wenhui, Liu Fan, Hu Kongxing, Chai Tongjie, Sui Guodong, Zhang Ke, Jin Aijun, Ye Jia, Wang Yang, and Li Qiushi.

This standard collects biological aerosols (also called air microorganisms) with different characteristics such as bacteria, viruses, fungi and toxins in the ambient air. Sampling methods and analysis of biological aerosols are provided. The sampling methods include the sampling principle, the selection of the sampler, and the application of the sampling process. Concerns; analysis methods include the type of analysis method, applicability of

the method, and expression of the analysis results. Provided in Appendix A Sampler performance and selection principles; Appendix B provides a record form of the entire bioaerosol sampling process. General rules for sampling and analysis of particulate bioaerosols Caution

--- The use of this standard may involve hazardous biological components, operations, and equipment. This standard does not include use The biosafety issues that should be paid attention to in this standard, users should use the biohazard risk according to the purpose and environment of the sampling before using this standard. Risk, take appropriate biosafety protection measures.

1 Scope

China's national general principles for sampling and analysing bioaerosols. It specifies the terms and definitions and the sampling and analysis, beginning with an overview of bioaerosol sampling. A bioaerosol is airborne particulate that is or came from something living - bacteria, fungal spores, viruses, pollen, and fragments and toxins from all of them - and sampling it is unlike sampling dust in one decisive respect: the analyte can be killed by the act of collecting it. An impactor that slams a particle onto a plate at high velocity, or a filter that dries it over an hour's sampling, may leave an organism intact but no longer culturable, and a method that counts only what will grow then reports a fraction of what was there. Which sampler and which analysis are chosen therefore determines the answer, and that is why a general principles document has to come before any specific method.

This standard specifies the general methods for sampling and analysis of biological aerosols with different characteristics such as bacteria, viruses, fungi and toxins in ambient air. Use principles. This standard applies to the sampling and analysis of biological aerosols in ambient air.

2 Normative references

The following documents are essential for the application of this document. For dated references, only the dated version applies to this article Pieces. For undated references, the latest version (including all amendments) applies to this document.

GB/T 16293 Test method for plankton in clean room (area) of pharmaceutical industry

GB/T 16294 Test method for sedimentary bacteria in clean room (area) of pharmaceutical industry

GB/T 18203 Hygienic standard for hemolytic streptococcus in indoor air

GB/T 18204.3 Hygienic inspection methods for public places Part 3. Air microorganisms

GB 50591 Code for Construction and Acceptance of Clean Room

3 Terms and definitions

The following terms and definitions apply to this document.

3.1 Microorganism A collective term for all tiny creatures that are difficult for an individual to see with the naked eye.

Note 1. Quoted from "Microbiology Nomenclature" (Second Edition) published by the National Science and Technology Terminology Examination Committee.

Note 2. The microorganisms referred to in this standard only include bacteria, fungi, and viruses.

3.2 Bacteria It is a general term for prokaryotes with cell walls containing muramic acid, membrane lipids as ester-bonded lipids, and RNA polymerase without type II promoter.

Note. Quoted from "Microbiology Nomenclature" (Second Edition) published by the National Science and Technology Terminology Examination Committee.

3.3 Virus A large class of simple microorganisms composed of RNA or DNA and proteins, specializing in intracellular infection and replication.

Note. Quoted from "Microbiology Nomenclature" (Second Edition) published by the National Science and Technology Terminology Examination Committee.

3.4 Fungi Eukaryotic organisms without chlorophyll, with cell walls and absorbing nutrients. Generally, spores are produced for reproduction by both sexual and asexual methods.