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

**GB/T 47074-2026**

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**Particles - Test method for the collection efficiency of aerosol  
sampling filters**

颗粒 气溶胶采样滤膜截留效率测试方法

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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". Drafting. Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents. This document was proposed and is under the jurisdiction of the National Technical Committee on Standardization of Particle Characterization, Sorting and Screening (SAC/TC168). This document was drafted by: Qingdao Institute of Metrology Technology, Qingdao Zhongrui Intelligent Instrument Co., Ltd., and Qingdao Laoying Haina Optoelectronic Ring. Bao Group Co., Ltd., Wuhan Tianhong Environmental Protection Industry Co., Ltd., Qingdao Minghua Electronic

Instruments Co., Ltd., Qingdao Rongguang Electronic Technology Co., Ltd. Limited Company, National Institute of Metrology, Pallas Instruments (Shanghai) Co., Ltd., Siterofan Biotechnology (Hangzhou) Co., Ltd., Hangzhou Kebai Special Filter Material Co., Ltd., National Center for Nanoscience and Technology, Qingdao Institute of Standardization, Shandong Institute of Metrology, Zhangjiagang Yangtze River Delta Biosafety Research Center, Beijing Shian Technology Co., Ltd., Beijing University of Aeronautics and Astronautics, Beijing Institute of Metrology and Testing, Shanghai Institute of Metrology Measurement and Testing Technology Research Institute Co., Ltd., Fujian Provincial Institute of Metrology, and the Chemical Research Institute of China Academy of Testing Technology. The main drafters of this document are: Zou Yaxiong, Zhang Ming, Liu Kai, Zhang Wenge, Li Zhaoyong, Liu Wei, Shao Xuyang, Fan Xinfeng, Wang Yue, Tao Xi, and Wang Xuefeng. Song Cheng, Lu Jiangfeng, Zhou Lan, Li Zhaojun, Wang Ting, Gao Jie, Ren Xiaoqing, Zhou Lei, Li Jinsong, Li Xinghua, Zhang Guocheng, Li Yafei, Zhao Xiaoning, He Qiangqiang, Liu Yuping, Huang Zhihuang, Zhang Wen.

Aerosol sampling filter membranes (hereinafter referred to as "filter membranes") are mainly used to collect particulate matter in the air or other gases for subsequent weighing. Or for sample analysis. Filter membranes are widely used in environmental monitoring, public health, and occupational health fields. Retention efficiency reflects the proportion of particulate matter retained by the filter membrane during sampling and is a key performance indicator of the filter membrane. Generally, the filter membrane is required to... The membrane has a retention efficiency of 99% or higher for 0.3 $\mu$ m particles. Test method for filter membrane retention efficiency of particulate aerosol sampling

## 1 Scope

GB/T 47074-2026 is the Chinese national standard covering how much of an aerosol a sampling filter actually catches - the number that every airborne measurement silently depends on, since anything the filter lets through is missing from the result. First edition, with GB/T 47078-2026 on bioaerosol filtration. It was issued on 28 January 2026 and has been in force since 1 August 2026, as a first edition. The document is under the responsibility of the Standardization Administration of China. This page is published from the official record of the 2026 edition; the clause text of a standard this recent is not yet in circulation, and the figures, limits and tables it contains are those of the document itself, delivered in full with the English translation.

This document describes two test methods for the retention efficiency of aerosol sampling filter membranes. particle counting method and mass concentration method. This document applies to the testing of the retention efficiency of aerosol sampling filter membranes (hereinafter referred to as "filter membranes").

## 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. This document.

GB/T 16418 Terminology for Particulate Systems

GB/T 31159 Terminology for Atmospheric Aerosol Observation

JJF1562 Calibration Specification for Condensation Nucleus Particle Counter

**3.1 Terms and Definitions** The terms and definitions defined in GB/T 16418 and GB/T 31159 apply to this document.

**3.1.1 interception efficiency** Under given test conditions, the proportion of particulate matter retained when the test aerosol passes through the filter membrane.

Note. It is usually expressed as the ratio (percentage) of the difference between the upstream and downstream aerosol concentrations of the filter membrane to the upstream aerosol concentration.

**3.1.2 Filter surface velocity** The gas flow rate through the filter membrane divided by the filtration area of the filter membrane. [Source:

ISO 11057.2011, 2.3, with modifications]

**3.1.3 resistance** The static pressure difference before and after the filter membrane under certain test flow rate or flow conditions. [Source:

GB/T 6165-2021, 3.1.4, with modifications]

**3.1.4 Test aerosol** Aerosols used for testing the retention efficiency of filter membranes. [Source:

ISO 29464.2024, 3.2.10, with modifications]

**3.1.5 correlation factor** The ratio of upstream to downstream concentration measurements when the test system is not equipped with the filter membrane under test and the aerosol concentration is kept stable. [Source:

GB/T 6165-2021, 3.1.28, with modifications]