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

GB/T 46540-2025

Textiles - Determination of microorganisms

纺织品 微生物的测定

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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 by the China National Textile and Apparel Council. This document is under the jurisdiction of the National Technical Committee on Standardization of Textiles (SAC/TC209). This document was drafted by: Zhengzhou Customs Technology Center, China Textile Standard (Shenzhen) Testing Co., Ltd., and Nanjing Customs Textile Industry Product Testing Center. Heart, Zhejiang Yaqinuo Decoration Materials Co., Ltd., Nanchang Customs, China Textile Standard (Zhejiang) Testing Co., Ltd., Jiageng Innovation Laboratory, Ningbo Customs Technology Center, Jiajia Holding Group Co., Ltd., Hai'an Nantong University Advanced Textile Research Institute, Shenzhen Ellassay Fashion Co., Ltd., Hunan Huasheng Zhuzhou Cedar Co., Ltd., China Jiliang University, Zhejiang Rongda Fashion Technology Co., Ltd., Guangdong Qiyue Future Technology Co., Ltd., Zhonglian Quality Inspection (Dongguan) Inspection Technology Co., Ltd., and Ruyudeshui (Hangzhou) Soft Furnishing Customization Co., Ltd. The main drafters of this document are. Guo Huiqing, Li Ke, Ma Pengfei, Zhang Shuxia, Gui Jiexiang, Xie Tangtang, Zheng Yue, Fu Kejie, Ding Youchao, and Yu Jianying. Zhou Yuhang, Liu Xin, Yuan Qiyu, Zhang Wei, Lou Danli, Huang Zhouyong, Zhang Hwei, Zhou Huiyun, Yan Ying, Huang Fukai, Sheng Fangming, Zhu Guoquan, Chen Haiyang. Determination of microorganisms in textiles Warning. Laboratory biosafety management and facility conditions for conducting microbial testing experiments must meet

the requirements of GB 19489. Personnel using this document should have practical experience working in a microbiology laboratory and are responsible for taking appropriate safety and health protection measures to ensure that... It complies with relevant national laws and regulations.

1 Scope

GB/T 46540-2025 is the Chinese national standard covering counting what lives on a fabric - the extraction of organisms from the textile, the total viable count and the specified pathogens, the culture conditions and the confirmation, on products sold as antibacterial and on medical and hygiene textiles. At 22,000 words. First edition, under the China National Textile and Apparel Council. In force from 1 May 2026. Issued on 31 October 2025, it has been in force since 1 May 2026.

This document describes the sample collection and pretreatment for microbial assays in textiles, as well as the determination of total bacterial count, coliforms, and aureus in textiles. Methods for the determination of Staphylococcus, Candida albicans, Pseudomonas aeruginosa, and beta-hemolytic streptococci. This document applies to all types of textiles.

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 8170 Rules for rounding off numerical values and the representation and determination of limiting values

GB 19489 General Requirements for Laboratory Biosafety

GB/T 36433-2018 Textiles - Quantitative Analysis of DNA from Mixtures of Cashmere and Sheep Wool - Fluorescent PCR Method

3 Terms and Definitions

The terms and definitions defined in GB/T 36433-2018, as well as the following terms and definitions, apply to this document.

3.1 Colony-forming units (CFU) The unit for determining the concentration of viable bacteria in a sample is based on the number of colonies formed on a solid culture medium.

3.2 Under an isothermal environment of 60°C~65°C, DNA is in a dynamic equilibrium state. At this temperature, four specific primers are used with a high-performance... Active chain replacement DNA polymerase is a technology that enables DNA to undergo nucleic acid

amplification in a short time.

Note. The reaction produces a large amount of amplification products, namely magnesium pyrophosphate, which is a white precipitate. The presence or absence of the white precipitate can be determined by visually observing it.

3.3 Real-time fluorescence quantitative PCR; PCR A fluorescent group is added to the PCR reaction system, and the accumulation of fluorescence signal is used to monitor the entire PCR process in real time. Then, the fluorescence signal is used to analyze the results of the unprocessed PCR. DNA amplification methods that use known templates for quantitative or qualitative analysis. [Source: GB/T 36433-2018, 3.2]

3.4 Ct value cyclethreshold The number of cycles required for the fluorescence signal in each reaction tube to reach the set threshold. [Source: GB/T 36433-2018, 3.5]