

ICS 71.100.01
CCS G 60



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

GB/Z 43890-2024

**Nanotechnologies - Guidelines for performance test method of
silver nanomaterials**

纳米技术 纳米银性能测试方法指南

Issued on: July 24, 2024

Implemented on: February 1, 2025

**Issued by: State Administration for Market Regulation;
Standardization Administration of China**

Table of Contents

- 1 Scope
- 2 Normative references
- 3 Terms and definitions
- 4 Nanostructured Materials

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 for standardization documents" Drafting. Please note that some of the contents of this document may involve patents. The issuing organization of this document does not assume the responsibility for identifying patents. This document was proposed by the Chinese Academy of Sciences. This document is under the jurisdiction of the Nanomaterials Subcommittee of the National Nanotechnology Standardization Technical Committee (SAC/TC279/SC1). This document was drafted by: Shenzhen University of Technology, Zhangjiagang Nair Nanotechnology Co., Ltd., Guangdong Academy of Sciences Institute of Microbiology (Guangdong Provincial Microbiological Analysis and Testing Center), Metallurgical Industry Information Standards Research Institute, Jiangxi Yuean New Materials Co., Ltd., Jiangsu Jicui Advanced Fiber Materials Research Institute Co., Ltd., Shenzhen Aijite Pharmaceutical Technology Co., Ltd., and Zhongguancun Huizhi Antibacterial New Materials Industry Technology Innovation Alliance. The main drafters of this document are: Chen Liqiong, Lai Xuandi, Zhang Feng, Xie Xiaobao, Tian Zijian, Li Bo, Zhou Jialiang, Zhang Weixu, Chen Hu, Wang Pingli, Li Qian, Du Ping, Zhang Yingzeng, Zeng Yajing, and Sun Menghan. Nanotechnology - Nanosilver Performance Test Methods Guide Important. The use of this document may involve certain hazardous materials, operations, and equipment, but does not guarantee all safety related. Before applying this document, the user is responsible for establishing appropriate safety and protection measures and determining relevant regulatory restrictions. applicability.

1 Scope

This document gives guidance on the methods for testing the performance of silver nanomaterials: the properties that have to be established, and the techniques by which each of them is measured. Nano-silver is the most widely sold engineered nanomaterial there is - it goes into wound dressings, textiles, coatings and water treatment on the strength of its antimicrobial action. That action depends on particle size, shape, surface

chemistry and the rate at which silver ions are released, and a product characterised on only one of those tells the buyer very little. This document says what a complete characterisation looks like. Issued on 24 July 2024 by SAMR and SAC as a guiding technical document, in force from 1 February 2025, under the technical jurisdiction of the Chinese Academy of Sciences.

2 Normative references

The contents of the following documents constitute the essential clauses of this document through normative references in this document. For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to This document.

GB/T 6679 General Rules for Sampling of Solid Chemical Products

GB/T 6680 General Rules for Sampling of Liquid Chemical Products

GB/T 15337 General rules for atomic absorption spectrometry

GB/T 19587 Determination of specific surface area of solid substances by gas adsorption BET method

GB/T 21510-2024 Test methods and evaluation of antibacterial properties of nano-inorganic materials

GB/T 21649.1 Particle size analysis - Image analysis method - Part

GB/T 23942 General rules for inductively coupled plasma atomic emission spectrometry of chemical reagents

GB/T 29022 Particle size analysis Dynamic light scattering (DLS)

GB/T 30543 Nanotechnology Characterization of single-walled carbon nanotubes by transmission electron microscopy

GB/T 30544.4 Nanotechnology Terminology Part

3 Terms and definitions

The terms and definitions defined in GB/T 30544.4 and the following apply to this document.

4 Nanostructured Materials

GB/T 32671.2 Measurement of zeta potential of colloidal systems Part