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

GB/T 31402-2023

**Measurement of antibacterial activity on plastics and other
non-porous surfaces**

塑料和其他无孔材料表面抗菌活性的测定

(English Translation)

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Foreword

This Document was drafted as per the rules specified in GB/T 1.1-2020 Directives for Standardization - Part 1. Rules for the Structure and Drafting of Standardizing Documents.

This Document replaced GB/T 31402-2015 Plastics - Measurement of Antibacterial Activity on

Plastics Surfaces. Compared with GB/T 31402-2015, the major technical changes of this Document are as follows besides structural adjustments and editorial modifications.

a) Change the "Scope" to expand the scope of application from plastics to plastics and other

non-porous materials; and add descriptions of materials and products not covered by this Document (see Clause 1 of this Edition; Clause 1 of the 2015 Edition);

b) Change the requirements for the use of "test bacteria" (see 4.1 of this Edition; 4.1 of the **2015 Edition**);

c) Change the requirements for cleaning the specimen in "Preparation of specimens" (see **7.2 of this Edition; 7.2 of the 2015 Edition**).

This Document equivalently adopted ISO 22196:2011 Measurement of Antibacterial Activity on Plastics and Other Non-Porous Surfaces.

This Document made the following minimum editorial modifications.

--- Use Method B in the informative reference document GB/T 19275-2003 to replace Method C in ISO 846:1997. The relevant technical contents of the two documents are completely consistent (see Clause 1);

--- Domestic strain numbers equivalent to the tested strains are listed in Table 1 and explained in footnotes;

--- Add Annex NA (informative) "Calculation of antibacterial rate".

Please note some contents of this Document may involve patents. The issuing agency of this

Document shall not identify these patents.

This Document was proposed by China Petroleum and Chemical Industry Federation.

This Document shall be under the jurisdiction of National Technical Committee on Plastics of

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This Document was first-time published in 2015; it is first-time revised hereby.

1 Scope

This Document specifies a method of evaluating the antibacterial activity of antibacterial-treated plastics, and other non-porous, surfaces of products (including intermediate products).

This Document is not intended to be used to evaluate the effects and propagation of bacteria on

non-porous surfaces without antibacterial treatments. If evaluation is required, see Method B

in GB/T 19275-2003[1].

2 Normative References

The provisions in following documents become the essential provisions of this Document through reference in this Document. For the dated documents, only the versions with the dates

indicated are applicable to this Document; for the undated documents, only the latest version

(including all the amendments) is applicable to this Document.

ISO 7218 Microbiology of food and animal feeding stuffs - General requirements and guidance for microbiological examinations

3 Terms and Definitions

For the purposes of this document, the following terms and definitions apply.

Ability of an antibacterial agent to inhibit the growth of bacteria on the surface of materials treated with an antibacterial agent, as determined by the value of the antibacterial activity.

4 Materials

Prepare physiological saline by placing 8.5 g of sodium chloride in 1 000 ml of distilled or deionized water and mixing to dissolve. Dilute the phosphate buffer solution prepared in 4.2.3.7

with the physiological saline to an 800-fold volume. Sterilize the phosphate-buffered physiological saline solution by autoclaving (see 6.2). If this solution is not used immediately after preparation, store it at 5 °C to 10 °C. Phosphate-buffered physiological saline kept for one month or longer after preparation shall not be used.

5 Apparatus

Unless otherwise specified, use the following apparatus and materials.

6 Sterilization of Apparatus and Storage of Stock Cultures

Stock cultures shall be stored at 5 °C to 10 °C on an appropriate medium and transferred monthly. After five transfers or if more than one month has passed between transfers, the stock