

**SINGAPORE STANDARD**

**Method of assessing antibacterial, antiviral and antifungal protection durability of surface disinfectants and coatings on non-porous materials**

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## Foreword

This Singapore Standard was prepared by the Working Group on Assessment of Antimicrobial and Antiviral Protection Durability set up by the Technical Committee on Biotechnology and Laboratory Testing under the purview of the Biomedical and Health Standards Committee.

This standard sets out to establish a method to assess the durability and effectiveness of different antimicrobial surface coatings under various surface treatments, which are reflective of the realistic environmental stressors that such surfaces are often exposed to.

This standard is designed to complement the following existing guidelines and standards rather than replace them in the assessment of antimicrobial coating efficacy.

In preparing this standard, reference was made to the following publications:

1. ASTM D4060-19 Standard test method for abrasion resistance of organic coatings by the Taber Abraser
2. ASTM D4213-08(2016) Standard test method for scrub resistance of paints by abrasion weight loss
3. ASTM E1054-22 Standard practices for evaluation of inactivators of antimicrobial agents
4. ASTM E2180-18 Standard test method for determining the activity of incorporated antimicrobial agent(s) in polymeric or hydrophobic materials
5. ASTM G21-15(2021) Standard practice for determining resistance of synthetic polymeric materials to fungi
6. BS EN 13697:2015+A1:2019 Chemical disinfectants and antiseptics, Quantitative non-porous surface test for the evaluation of bactericidal and/or fungicidal activity of chemical disinfectants used in food, industrial, domestic and institutional areas. Test method and requirements without mechanical action (phase 2, step 2)
7. ISO 21702:2019 Measurement of antiviral activity on plastics and other non-porous surfaces
8. ISO 22196:2011 Measurement of antibacterial activity on plastics and other non-porous surfaces
9. JIS Z 2801:2010 Antibacterial products – Test for antibacterial activity and efficacy
10. EPA MB-40-00 Test method for evaluating the efficacy of antimicrobial surface coatings

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JIS Z 2801:2010 Antibacterial products – Test for antibacterial activity and efficacy

Acknowledgement is made for the use of information from the above publications.

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# Method of assessing antibacterial, antiviral and antifungal protection durability of surface disinfectants and coatings on non-porous materials

## 1 Scope

This standard specifies the assessment methodology for determining the antibacterial, antifungal and antiviral potency and durability of surface disinfectants and coatings (including films and spray-ons) when applied on non-porous materials (e.g. plastic products, metal products, ceramic products, etc.), excluding textile and photocatalyst products.

This standard does not include the secondary effects of antimicrobial efficacy such as odour prevention and biodeterioration.

## 2 Normative references

The following referenced documents are indispensable for the application of this standard. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ASTM D4060	Standard test method for abrasion resistance of organic coatings by the Taber Abraser
ASTM D4213-08(2016)	Standard test method for scrub resistance of paints by abrasion weight loss
ASTM E1054	Standard practices for evaluation of inactivators of antimicrobial agents
ISO 21702	Measurement of antiviral activity on plastics and other non-porous surfaces
ISO 22196	Measurement of antibacterial activity on plastics and other non-porous surfaces