



Standard Quantitative Disk Carrier Test Method for Determining Bactericidal, Virucidal, Fungicidal, Mycobactericidal, and Sporocidal Activities of Chemicals¹

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INTRODUCTION

The quantitative test method described here uses disks of stainless steel (1 cm in diameter) as carriers. It employs the same basic set of materials and procedures to assess the ability of liquid chemicals to inactivate vegetative bacteria, viruses, fungi, mycobacteria, and bacterial spores **(1-7)**.² Performance standards for test substances, the level of water hardness, the type and level of a soil load, the test organism(s), and other test conditions may vary depending on the target regulatory agency. This basic test can also be adapted for use with other carrier materials of similar dimensions.

The development of this test method was made possible with financial support from the Antimicrobials Division of the U.S. Environmental Protection Agency.

1. Scope

1.1 This test method is designed to evaluate the ability of test substances to inactivate vegetative bacteria, viruses, fungi, mycobacteria, and bacterial spores **(1-7)** on disk carriers of brushed stainless steel that represent hard, nonporous environmental surfaces and medical devices. It is also designed to have survivors that can be compared to the mean of no less than three control carriers to determine if the performance standard has been met. For proper statistical evaluation of the results, the number of viable organisms in the test inoculum should be sufficiently high to take into account both the performance standard and the experimental variations in the results.

1.2 The test protocol does not include any wiping or rubbing action. It is, therefore, not designed for testing wipes.

1.3 This test method should be performed by persons with training in microbiology in facilities designed and equipped for work with infectious agents at the appropriate biosafety level **(8)**.

1.4 It is the responsibility of the investigator to determine whether Good Laboratory Practice Regulations (GLPs) are required and to follow them where appropriate (40 CFR, Part 160 for EPA submissions and 21 CFR, Part 58 for FDA submissions).

1.5 In this test method, SI units are used for all applications, except for distance in which case inches are used and metric units follow.

1.6 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards:*³

D1129 Terminology Relating to Water

D1193 Specification for Reagent Water

E2756 Terminology Relating to Antimicrobial and Antiviral Agents

2.2 *CFR Standard:*⁴

21 CFR, Part 58 Laboratory Practice for Nonclinical Laboratory Studies

40 CFR, Part 160 Good Laboratory Practice Standards

3. Terminology

3.1 *Definitions*—For definitions of general terms used in this test method, refer to Terminology **E2756**.

3.2 *Definitions of Terms Specific to This Standard:*

¹ This test method is under the jurisdiction of ASTM Committee **E35** on Pesticides, Antimicrobials, and Alternative Control Agents and is the direct responsibility of Subcommittee **E35.15** on Antimicrobial Agents.

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² The boldface numbers in parenthesis refer to the list of references at the end of this standard.

³ For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

⁴ Available from U.S. Government Printing Office Superintendent of Documents, 732 N. Capitol St., NW, Mail Stop: SDE, Washington, DC 20401, <http://www.access.gpo.gov>.