



Standard Practice for Evaluation of Effectiveness of Decontamination Procedures for Surfaces When Challenged with Droplets Containing Human Pathogenic Viruses¹

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INTRODUCTION

Many communicable diseases can often spread through droplets containing infectious agents. Such “contagious droplets” may expose susceptible individuals directly or contaminate environmental surfaces in the immediate vicinity and render them as fomites for further spread of the disease. The characteristics of the droplets (particle size and composition) will influence the viability of the microorganisms when exposed to environmental stresses but also shield them from physical and chemical decontaminants. The wide variations in the types and levels of such protective/shielding ingredients can impact on the effectiveness of surface decontaminants. This practice is designed to simulate surface deposition of contagious droplets from human respiratory secretions. It is primarily focused on influenza viruses but other respiratory viruses or surrogates could be used. Protocols for assessing the microbicidal activity of disinfectants are also described.

1. Scope

1.1 This practice is designed to evaluate decontamination methods (physical, chemical, self-decontaminating materials) when used on surfaces contaminated with virus-containing droplets.

1.2 This practice defines the conditions for simulating respiratory droplets produced by humans and depositing the droplets onto surfaces.

1.3 The practice is specific to influenza viruses but could be adapted for work with other types of respiratory viruses or surrogates.

1.4 This practice is suitable for working with a wide variety of environmental surfaces.

1.5 This practice does not address the performance of decontaminants against microbes expelled via blood splatter, vomit, or fecal contamination.

1.6 This practice should be performed only by those trained in bioaerosols, microbiology, or virology, or combinations thereof.

1.7 The values stated in SI units are to be regarded as standard. No other units of measurement are included in this standard.

1.8 *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:²

E1052 Test Method to Assess the Activity of Microbicides against Viruses in Suspension

E2197 Quantitative Disk Carrier Test Method for Determining Bactericidal, Virucidal, Fungicidal, Mycobactericidal, and Sporocidal Activities of Chemicals

E2720 Practice for Evaluation of Effectiveness of Decontamination Procedures for Air-Permeable Materials when

¹ This practice 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 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.