



Designation: E1428 – 15a

Standard Test Method for Evaluating the Performance of Antimicrobials in or on Polymeric Solids Against Staining by *Streptomyces species* (A Pink Stain Organism)¹

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INTRODUCTION

When certain bacteria and mold species grow on the surface of flexible or “plasticized” polymers, metabolites such as pigments in the case of certain bacteria and melanin (dark stains from fungal growth) cause undesirable stains on the polymer surface. These stains may persist even after the surface growth is removed. This test method is used for determining the performance of antimicrobial agents used in or on synthetic polymeric solids against pink-staining by the actinomycete, *Streptomyces species*. This organism has been chosen as an indicator organism, although other organisms have been known to cause undesirable staining in polymeric solids.

1. Scope

1.1 This test method is intended to assess susceptibility of flat two dimensional vinyl films and other solid polymer products as well as products that may directly contact vinyl to pink-staining by the actinomycete bacteria *Streptomyces species*. This test method may not be suitable for highly textured or porous substrates.

1.2 This test method is not suitable for evaluating dark-pigmented test samples.

1.3 A knowledge of microbiological techniques is recommended for these procedures.

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

1.5 *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.*

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. Referenced Documents

2.1 *ASTM Standards*:²

D3273 Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber

D3274 Test Method for Evaluating Degree of Surface Disfigurement of Paint Films by Fungal or Algal Growth, or Soil and Dirt Accumulation

E2756 Terminology Relating to Antimicrobial and Antiviral Agents

3. Terminology

3.1 For definitions of terms used in this standard refer to Terminology E2756.

3.2 *Definitions*:

3.2.1 *microbially induced staining*—undesirable pigmentation or disfiguration of an object due to surface colonization by certain microorganisms.

3.2.1.1 *Discussion*—Both bacteria and fungi produce metabolic pigments that can result in surface stains on susceptible objects.

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.