



Standard Test Method for Assessment of an Antibacterial Handwash Product by Multiple Basin Wash Technique¹

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1. Scope

1.1 This test method covers determining the effectiveness of an antibacterial handwash for reducing the level of aerobic bacterial flora on the hands, following an extended period of use.

1.2 A knowledge of microbiological techniques is required for these procedures.

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

1.4 *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:

D 1193 Specification for Reagent Water²

E 1054 Practices for Evaluating Inactivators of Antimicrobial Agents Used in Disinfectant, Sanitizer, Antiseptic, or Preserved Products³

3. Terminology

3.1 Definitions:

3.1.1 *active ingredient*—a substance added to a formulation specifically for inhibition or inactivation of microorganisms.

3.1.2 *active test formulation*—a formulation with an active ingredient.

3.1.3 *control test formulation*—a formulation without an active in this test method. Frequently a bland soap.

3.1.4 *neutralization*—inactivation of the antibacterial of the test material. This can be achieved through dilution of active test formulations to levels too low to have an antibacterial activity, or through the use of chemical agents, called neutralizers, to eliminate antibacterial activity.

3.1.5 *resident microorganisms*—microorganisms that live and multiply on skin, forming a permanent population.

3.1.6 *transient microorganisms*—microorganisms from the environment that contaminate but do not normally permanently colonize skin.

4. Summary of Test Method

4.1 This hand degerming protocol is a modification of the Cade Handwashing Procedure, that is a serial basin hand wash sampling technique.⁴

4.1.1 Two baseline bacterial counts will be determined for the hands and a post-usage count will be done after twelve days of antibacterial handwash usage. The samples are collected from basin wash water following one or more 60 second washes with a bar soap that does not contain an antimicrobial. At each sampling interval samples may be collected from the first and or fifth hand wash in a series of five washes.

4.1.2 The data will be used to calculate the reduction of bacterial flora resulting from the use of the antibacterial test handwash product as described within the protocol. Reductions in bacterial populations calculated from baseline and post-treatment samples collected after the first basin wash are reflective of the antimicrobial test soaps ability to reduce the population of transient flora on the hands. Reductions in bacterial populations calculated from baseline and post-treatment samples collected after the fifth basin wash are reflective of the antimicrobial test soaps ability to reduce the population of resident flora on the hands.

5. Significance and Use

5.1 This procedure should be used for *in vivo* evaluation of the performance of antibacterial handwash products that are intended to reduce the skin micro flora following repeated use. Activity against the combined transient and resident micro flora may be assessed. Historically counts from the first basin are considered to be transients^{4,5}. The latter measurement is probably more meaningful as the resident population is more stable.

5.1.1 This test method is applicable for testing all forms of topical antimicrobial handwash formulations.

5.2 Performance of this procedure requires the knowledge

¹ This test method is under the jurisdiction of ASTM Committee E-35 on Pesticides and is the direct responsibility of Subcommittee E35.15 on Antimicrobial Agents.

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² *Annual Book of ASTM Standards*, Vol 11.01.

³ *Annual Book of ASTM Standards*, Vol 11.04.

⁴ Cade, A.R., "A Method for Testing Degerming Efficacy of Hexachlorophene Soaps," *Journal of the Society of Cosmetic Chemistry*, Vol. 2: 1951, pp 181–291.

⁵ Roth, R.R., Williams, D.J., "Microbial Ecology of the Skin" *Annual Review of Microbiology*, Vol. 42: 1988, pp. 441–64.