Designation: D7225 – 06

StandardGuide for Blood Cleaning Efficiency of Detergents and Washer-Disinfectors[1]

This standard is issued under the fixed designation D7225; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This guide is based on a standardized test soil correlating to coagulated blood suitable for screening tests and the evaluation of the cleaning efficiency of washer-disinfectors used for reprocessing of surgical instruments. This guide strictly deals with cleaning and does not describe any methods that are related to disinfection. See the Referenced DocumentsD5343, D4008, D4265, D4488, D2960, D3050, in Section 2 for additional information.

1.2 The values given in SI units are to be considered the standard.

1.3 *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 to determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]

D5343 Guide for Evaluating Cleaning Performance of Ceramic Tile Cleaners

D4008 Test Method for Measuring Anti-Soil Deposition Properties of Laundry Detergents (Not Suitable for Detergent Ranking)

D4265 Guide for Evaluating Stain Removal Performance in Home Laundering

D4488 Guide for Testing Cleaning Performance of Products Intended for Use on Resilient Flooring and Washable Walls (Withdrawn 2009)[3]

D2960 Guide for Controlled Laundering Test Using Naturally Soiled Fabrics and Household Appliances

D3050 Guide for Measuring Soil Removal from Artificially Soiled Fabrics (Not Suitable for Detergent Ranking)

2.2 *AAMI Standards:*[4]

ANSI/AAMI ST35:2003 Safe handling and biological decontamination of reusable medical devices in health care facilities and in nonclinical settings

ANSI/AAMI ST46:2002 Steam sterilization and sterility assurance in health care facilities

3. Summary of Guide

3.1 The standardized test soil is based on a proteinous matrix containing fibrinogen and thrombin in two separated components. Coagulation and formation of fibrin fibers are induced after mixing the two components.

3.2 The suggested methods are based on the removal of standardized test soil as a result of mechanical or chemical action, or both, of the tested detergents or washer-disinfectors, or both. The screening test provides qualitative results for cleaning efficacy. After testing the practical situation in a washer-disinfector, the end result is visually checked for immediate evaluation. Minor residue is detected by using the peroxidase reaction.

4. Significance and Use

4.1 *Significance*—Dried blood represents a significant challenge to cleaning surgical instruments. The water-soluble components of blood are easily rendered insoluble when exposed to heat, chemical solutions, or time at room temperature. The water insoluble component of blood is fibrin built up during coagulation. These proteins bind quite readily to the surfaces of surgical instruments making them difficult to remove even with the aid of chemical cleaning agents. Instruments contaminated with blood residue after reprocessing represent a significant threat for infection to healthcare workers and patients. Healthcare facilities typically employ the use of automated instrument washers. These devices combine mechanical action along with chemical cleaning agents in a staged cleaning cycle designed to thoroughly clean surgical instruments. To function properly, these machines must be performing at targeted mechanical efficiency and deliver the correct

[1] This guide is under the jurisdiction of ASTM Committee D12 on Soaps and Other Detergents and is the direct responsibility of Subcommittee D12.16 on Hard Surface Cleaning.

Current edition approved Feb. 1, 2006. Published March 2006. DOI: 10.1520/D7225-06.

[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.

[3] The last approved version of this historical standard is referenced on www.astm.org.

[4] Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036.