



Designation: D4008 – 19 (Reapproved 2024)

Standard Guide for Measuring Anti-Soil Deposition Properties of Laundry Detergents¹

This standard is issued under the fixed designation D4008; 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 provides direction for measuring the ability of detergents to prevent the deposition of soils from detergent solutions onto fabrics. It is intended as a laboratory screening test to aid in the formulation of detergent products, for quality control, and as a basis between the purchaser and seller in standardizing specific products' performance.

1.2 The anti-soil deposition performance of detergent products will vary greatly depending on the type of soils and fabrics used in the test. Therefore, selection of the soils, fabrics, reference detergents, and test conditions shall be made by agreement between the interested parties on the basis of experience.

1.3 There is no single or combination of oily soils or particulate soils, or both, that will precisely predict overall the performance of a product or treatment with respect to anti-redeposition as perceived by a consumer. This guide is intended to assess or compare detergent performance with respect to the anti-redeposition performance for the specific soil chosen.

1.4 The values stated in either inch-pound or SI units are to be regarded separately as the standard. The values given in parentheses are for information only.

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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.* Material safety data sheets are available for reagents and materials. Review them for hazards prior to usage.

1.6 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recom-*

mendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.

2. Referenced Documents

2.1 *ASTM Standards:*²

D1193 Specification for Reagent Water

E97 Method of Test for Directional Reflectance Factor, 45-Deg 0-Deg, of Opaque Specimens by Broad-Band Filter Reflectometry (Withdrawn 1991)³

E313 Practice for Calculating Yellowness and Whiteness Indices from Instrumentally Measured Color Coordinates

3. Terminology

3.1 *Definitions of Terms Specific to This Standard:*

3.1.1 *reflectance retention, n*—the change in reflectance between clean fabric and the same fabric after laundering.

3.1.2 *soil deposition, n*—the soiling of clean fabrics by soil that has been added to the wash bath rather than by soil removed from another fabric.

3.1.3 *soil redeposition, n*—the soiling of clean, or relatively clean, fabrics during the laundering process by soil that has been removed from another fabric.

4. Summary of Guide

4.1 Swatches of clean fabrics are washed, a minimum of three times, in solutions of the test detergent prepared to contain known amounts of particulate and oily soils.

4.1.1 Identical clean swatches are similarly exposed to prepared solutions of a suitable reference detergent containing an identical soil load. The ability of the test detergent to prevent soil deposition is estimated by comparing the reflectance retention of the swatches washed in the test detergent to the reflectance retention of those washed in the reference detergent.

¹ This guide is under the jurisdiction of ASTM Committee D12 on Soaps and Other Detergents and is the direct responsibility of Subcommittee D12.15 on Physical Testing.

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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.

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