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Standard Test Method for Detecting Odor of Drycleaning Detergent on a Drycleaned Garment¹

This standard is issued under the fixed designation D 2553; 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 test method covers the detection of odor emitted from the residue of detergent left on a drycleaned garment after a normal drycleaning.

NOTE 1—One bath is assumed unless two-bath usage is recommended by the detergent manufacturer.

1.2 The present test method is limited to drycleaning detergents of the liquid charge type (see Specification D 2763).

1.3 *This standard may involve hazardous materials, operations, and equipment. This standard does not purport to address all of the safety problems 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.* Specific precautionary statements are given in Section 7. Material Safety Data Sheets are available for reagents and materials. Review them for hazards prior to usage.

2. Referenced Documents

2.1 ASTM Standards:

D 459 Definitions of Terms Relating to Soaps and Other Detergents²

D 484 Specification for Hydrocarbon Drycleaning Solvents³

D 2763 Specification for Drycleaning Detergent, Liquid Charge Type²

3. Terminology

3.1 Definitions:

3.1.1 For definitions of terms used in this test method see Definitions D 459, and Specifications D 484 and D 2763.

4. Summary of Test Method

4.1 Similar swatches of cloth are treated in drycleaning solvent or dry-cleaning solvent-detergent mixtures, centrifuged, and dried. They are then compared for odor. Tests are run using petroleum solvent and perchloroethylene drycleaning solvents.

¹ This test method is under the jurisdiction of ASTM Committee D-12 on Soaps and Other Detergents and is the direct responsibility of Subcommittee D12.13 on Analysis of Dry Cleaning Materials.

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² Annual Book of ASTM Standards, Vol 15.04.

³ Discontinued, see 1983 Annual Book of ASTM Standards, Vol 06.03.

5. Significance and Use

5.1 In normal drycleaning procedures, a little amount, and varying up to a significant amount, of detergent residue remains on the garment after the dry-cleaning process is completed. If this residue emits an odor the condition would be objectionable.

6. Materials

6.1 *Swatches*, 1.60 combed cotton twill, bleached and mercerized.⁴

6.2 *Drycleaning Solvents*—Petroleum solvent in accordance with Specification D 484 and perchloroethylene.

7. Safety Precautions

7.1 Petroleum solvent is a flammable material, and standard precautions for such liquids should be observed.

7.2 Perchloroethylene is a volatile, chlorinated solvent with well-known toxic limits (Note 2). Use adequate ventilation when handling the solvent.

NOTE 2—See special instructions on manufacturer's label.

8. Sampling

8.1 Take the sample of drycleaning detergent from a homogeneous lot of the drycleaning detergent to be tested.

9. Test Specimen

9.1 Cut the test swatches to a 4 by 4-in. (101 by 101-mm) size.

9.2 Use twelve swatches for each test made, three for each of the two blank determinations and three for each of the two solvent types using detergents. Where a manufacturer's directions specify use in only one type of drycleaning solvent, only six swatches will be needed.

9.3 Condition all swatches to 75 % relative humidity.

10. Procedure

10.1 Prepare in 600-mL beakers the following solutions:

- (1) 400 mL of petroleum solvent,
- (2) 400 mL of petroleum solvent containing 4 volume % of the detergent to be tested (Note 3),
- (3) 400 mL of perchloroethylene dry-cleaning solvent, and
- (4) 400 mL of perchloroethylene containing 4 volume % of the detergent to be tested. Where use of the drycleaning detergent is limited to only one drycleaning solvent, then tests with any other drycleaning solvent shall not be made.

⁴ Test fabrics style 413 or equal has been found suitable. Swatches are available from Testfabrics, Inc., P. O. Drawer O, 200 Blackford Ave., Middlesex, NJ 08846.