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Soil Release: Oily Stain Release Method

Developed in 1969 by AATCC Committee RA56; reaffirmed 1970, 1974, 1977; editorially revised 1978, 1983, 1986, 1997, 2004, 2005, 2008, 2011, 2012; revised 1981, 1990, 1995, 2010; editorially revised and reaffirmed 2000, 2015.

1. Purpose and Scope

1.1 This test method is designed to measure the ability of fabrics to release oily stains during home laundering.

1.2 This test method is primarily for use by fabric finishers to evaluate the likely performance of soil release finishes in actual use (see 12.1). If this test method is used as part of a contract between buyer and seller, or in any case where comparisons between laboratories are being made, the parties should agree to use the same ballast and detergent. In referee situations, or where standard specifications are involved, 1993 AATCC Standard Reference Detergent or 2003 AATCC Standard Reference Liquid Detergent WOB should be used (see 12.8 and 12.13).

1.3 The use of this test on garments is not precluded.

2. Principle

2.1 A stain is applied to a test specimen. An amount of the staining substance is forced into the fabric by using a specified weight. The stained fabric is then laundered in a prescribed manner and the residual stain rated on a scale from 5 to 1 by comparison with a stain release replica showing a graduated series of stains.

3. Terminology

3.1 **soil**, n.—dirt, oil or other substances not normally intended to be present on a substrate such as a textile material.

3.2 **soil release**, n.—the degree to which a soiled substrate approaches its original, unsoiled appearance as a result of a care procedure.

3.3 **stain**, n.—a local deposit of soil or discoloration on a substrate that exhibits some degree of resistance to removal, as by laundering or drycleaning.

4. Safety Precautions

NOTE: These safety precautions are for information purposes only. The precautions are ancillary to the testing procedure.

dures and are not intended to be all inclusive. It is the user's responsibility to use safe and proper techniques in handling materials in this test method. Manufacturers MUST be consulted for specific details such as material safety data sheets and other manufacturer's recommendations. All OSHA standards and rules must also be consulted and followed.

4.1 Good laboratory practices should be followed. Wear safety glasses in all laboratory areas.

4.2 The 1993 AATCC Standard Reference Detergent and the 2003 AATCC Standard Reference Liquid Detergent WOB may cause irritation. Care should be taken to prevent exposure to skin and eyes.

4.3 Manufacturer's safety recommendations should be followed when operating laboratory testing equipment.

5. Apparatus and Materials (see 12.1 and 12.2)

5.1 White AATCC Textile Blotting Paper (see 12.3).

5.2 Corn oil (see 11.1 and 12.4).

5.3 Glassine paper or equivalent (see 12.5).

5.4 Timer.

5.5 Weight, cylinder 6.4 cm (2.5 in.) diam., 2.268 ± 0.045 kg (5.0 ± 0.1 lb) (stainless steel is preferable).

5.6 Amber bottle with medicine dropper (see 12.6).

5.7 Washer, automatic (see 12.7).

5.8 Dryer, automatic (see 12.7).

5.9 Granular commercial detergent, home wash, 1993 AATCC Standard Reference Detergent, or 2003 AATCC Standard Reference Liquid Detergent WOB (see 1.2, 12.8 and 12.13).

5.10 Ballast of 92 × 92 ± 3 cm (36 × 36 ± 1 in.) hemmed pieces of bleached cotton sheeting (Ballast wash load Type 1) or 50/50 polyester/cotton bleached mercerized plain weave (Ballast wash load Type 3) (see 12.9).

5.11 Lighting and evaluation area (see 12.10).

5.12 Table with non-glare black top 61 × 92 cm (24 × 36 in.); 89 ± 3 cm (35 ± 1 in.) high.

5.13 Stain Release Replica or 3M Stain Release Rating Scale (see 12.11).

5.14 Thermometer (see 12.12).

5.15 Balance or scale appropriate for the weights required.

6. Test Specimens

6.1 Use two test specimens 38 × 38 ± 1

cm (15.0 × 15.0 ± 0.4 in.) for each determination. Condition the test specimens for a minimum of 4 h at 21 ± 1°C (70 ± 2°F) and 65 ± 2% RH prior to application of stains.

7. Staining Procedure

7.1 Place the unstained specimen flat on a single thickness of White AATCC Textile Blotting Paper on a smooth, horizontal surface (see 12.3).

7.2 Using the medicine dropper, place 5 drops (approx. 0.2 mL) of corn oil (see 12.4) in the approximate center of the test specimen.

7.3 Place a 7.6 × 7.6 cm (3.0 × 3.0 in.) square of glassine paper over the stained area.

7.4 Place the weight (see 5.5) on the glassine paper directly over the stained area.

7.5 Allow weight to sit undisturbed for 60 ± 5 s. Then remove the weight and discard the glassine sheet.

7.6 Do not allow stained test specimens to contact each other in a manner that would transfer stains. Wash within 20 ± 5 min after staining.

8. Washing Procedure

8.1 Fill washer to 18 ± 1 gal (68.1 ± 3.8 L) with water at one of the temperatures from Table I. Check with the thermometer.

8.2 Add granular commercial detergent, 100 ± 1 g of 1993 AATCC Standard Reference Detergent or 100 ± 1 g of 2003 AATCC Standard Reference Liquid Detergent WOB to the washer.

8.3 Start the water agitating, place ballast and then test specimens in the washer making a total load of 1.80 ± 0.07 kg (4.00 ± 0.15 lb). The maximum number of test specimens per washer load shall be 30 with one stain per specimen.

8.4 Set the dial on the washer for a Normal wash to run for 12 min measured time and allow cycle to run to completion. (This gives normal agitation in both the wash and the rinse.)

8.5 At the end of the final spin cycle, place the entire load, test specimens and

Table I—Washing Temperature Selection

Washing Procedure	Temperature
II	27 ± 3°C (80 ± 5°F)
III	41 ± 3°C (105 ± 5°F)
IV	49 ± 3°C (120 ± 5°F)
V	60 ± 3°C (140 ± 5°F)