Laboratory Procedure for Home Laundering: Hand Washing

Foreword

This procedure is based on laundering methods originally developed as part of various AATCC standards. As a stand-alone laundering protocol, this procedure may be combined with other test methods, including those for appearance and care label verification. Procedures for home laundering using an automatic washing machine may be found in AATCC LP1, Laboratory Procedure for Home Laundering: Machine Washing.

1. Purpose and Scope

1.1 This procedure provides standard home laundering conditions using hand washing and line or flat drying.

1.2 This test is applicable to all fabrics and end products suitable for hand washing with detergent.

2. Principle

2.1 Home laundering procedures, including hand washing, hang drying, and flat drying are provided. The procedures described herein need to be combined with an appropriate test method to obtain and interpret results.

3. Terminology

3.1 **laundering,** n.—*of textile materials*, a process intended to remove soils and/or stains by treatment (washing) with an aqueous detergent solution and normally including rinsing, extraction and drying.

4. Safety Precautions

NOTE: These safety precautions are for information purposes only. The precautions are ancillary to the testing procedures 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 procedure. 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 Detergent may cause irritation. Care should be taken to protect skin and eyes from exposure.

5. Uses and Limitations

5.1 Standard laboratory laundering procedures represent, but may not exactly replicate, current consumer practices, which vary over time and among households.

5.2 Tumble and drip drying procedures are not included herein as they are not commonly used for delicate items that may be hand washed.

6. Apparatus and Materials (see 13.1)

6.1 Wash tub, 9.5-L.

6.2 White towels, large enough to accommodate test specimen, any weight.

6.3 Appropriate hangers, for hang drying.

6.4 Drying racks with pull-out, perforated shelves, for drying flat (see 13.2).

6.5 1993 AATCC Standard Reference Detergent (see 13.2, 13.3).

7. Specimens

7.1 Cut and prepare specimens as directed in the applicable test method. This laundering procedure may be performed on any size or shape specimen(s) with a total dry mass less than or equal to 0.7 kg (1.5 lb).

7.2 If required, condition and evaluate specimens before laundering, as directed in an applicable test method.

8. Standard Washing Procedure

8.1 Select washing temperature from Table I. Add 7.6 ± 1.9 L (2.0 ± 0.5 gal) of water at this temperature to the wash tub.

8.2 Add 20 ± 1 g of 1993 AATCC Standard Reference Detergent to wash tub.

8.3 Agitate by hand to dissolve detergent.

8.4 Add specimen(s) to solution and gently squeeze to distribute detergent solution. Do not twist or wring.

8.5 Let specimen(s) soak for 2 min.

8.6 Gently squeeze specimen(s) in detergent solution for 1 min. Do not twist or wring.

8.7 Repeat 2-min. soak and 1-min squeeze in detergent solution.

8.8 Remove specimen(s) from wash tub and gently squeeze to remove excess detergent solution. Do not twist or wring.

8.9 Place specimen(s) on clean white towel. Empty and rinse wash tub.

8.10 Add 7.6 ± 1.9 L (2.0 ± 0.5 gal) of clean water at the specified rinse temperature (see Table I) to the wash tub.

8.11 Place washed specimen(s) from towel in rinse water and gently squeeze to distribute. Do not twist or wring.

8.12 Let specimen(s) soak for 2 min.

8.13 Gently squeeze specimen(s) in rinse water for 1 min. Do not twist or wring.

8.14 Repeat 2-min. soak and 1-min squeeze in rinse water.

8.15 Remove specimen(s) from wash tub and gently squeeze to remove excess water. Do not twist or wring.

9. Standard Drying Procedure

9.1 Using clean white towels, blot water from washed specimen(s). Do not wring or twist.

9.2 Line/Hang Dry. Hang each fabric specimen by two corners, with the fabric length in the vertical direction. Hang product specimens on an appropriate hanger, straightening and smoothing facings, seams, etc. Product specimens should generally be oriented in the direction in which they are worn. Do not fold or stretch specimens over the hanger. Allow specimens to hang in still air at room temperature not greater than 26°C (78°F) until dry. Do not blow air directly on specimens as it may cause distortion

9.3 Screen/Flat Dry. Spread each specimen on a horizontal screen or perforated surface, removing wrinkles without distorting or stretching it. Allow specimens to lie in still air at room temperature not greater than 26°C (78°F) until dry. Do not blow air directly on specimens as it may cause distortion.

9.4 Allow specimens to dry completely before washing again.

9.5 Repeat the selected washing and drying procedures for an agreed upon number of cycles.

Table I—Standard Washing and Rinsing Temperatures[1]

Designation	Wash Temp, °C (°F)	Rinse Temp, °C (°F)
Very Cold	16 ± 3 (60 ± 5)	< 18 (< 65)
Cold	27 ± 3 (80 ± 5)	< 29 (< 85)
Warm	41 ± 3 (105 ± 5)	< 29 (< 85)
Hot[2]	49 ± 3 (120 ± 5)	< 29 (< 85)

[1]The temperatures in this table are similar to those specified by the US Federal Trade Commission for care label verification (see 16 CFR, Part 423, Appendix A).

[2]Hot water may not be a reasonable selection for hand washing or for the delicate items typically requiring hand washing.

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10. Evaluation

10.1 If required, condition and evaluate specimens as directed by the applicable test method.

11. Report

11.1 Report specific laundering conditions as directed by applicable test method. It is recommended to report, at a minimum, wash and rinse temperature, number of complete cycles, and drying procedure (hang or flat).

12. Precision and Bias

12.1 Precision and Bias statements are not applicable because data are not generated by this procedure.

13. Notes

13.1 For potential equipment information pertaining to this procedure, please visit the online *AATCC Buyer's Guide* at www.aatcc.org/bg. AATCC provides the possibility of listing equipment and materials sold by its Corporate members, but AATCC does not qualify, or in any way approve, endorse or certify that any of the listed equipment or materials meets the requirements in its test methods.

13.2 Materials or drawings are available from AATCC, P.O. Box 12215, Research Triangle Park NC 27709; tel: +1.919.549.8141; fax: +1.919.549.8933; e-mail: ordering@aatcc.org; web site: www.aatcc.org.

13.3 1993 AATCC Standard Reference Detergent with or without optical brightener may be used for this procedure. Refer to applicable test method for guidance on selecting a detergent. If no guidance is given, use detergent *without* optical brightener for all colorfastness evaluations. Consumer detergents specifically formulated for use in hand washing may be used with prior agreement among all interested parties. The use of such detergents may increase *between laboratory* variability. Even if all comparison testing is done in one laboratory, repeatability may be lessened by use of such detergents due to formulation changes to meet market or consumer demands.

14. History

14.1 Reaffirmed 2020.

14.2 Editorially revised 2019.

14.3 Developed in 2018 by AATCC Committee RA88. Supersedes AATCC M5.

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