



Association of Textile, Apparel & Materials Professionals

AATCC takes no position respecting the validity of any patent rights asserted in connection with any item mentioned in this test method. Users of this test method are expressly advised that determination of the validity of any such patent rights, and the risk of infringement of such rights, are entirely their own responsibility.

This test method is subject to revision at any time by the responsible technical committee and must be reviewed every five years and if not revised, either reaffirmed or withdrawn. Your comments are invited either for revision of this test method or for additional procedures and should be addressed to the AATCC Technical Center. Your comments will receive careful consideration at a meeting of the responsible technical committee, which you may attend. If you feel that your comments have not received a fair hearing, you should make your views known to Diana A. Wyman, Technical Director, at the address shown below.

This test method is copyrighted by AATCC, PO Box 12215, Research Triangle Park, NC 27709 USA. Individual reprints (single or multiple copies) of this method may be obtained by contacting AATCC at the above address or tel: 919-549-3526; fax: 919-549-8933, or e-mail: orders@aatcc.org.

AATCC License Agreement: This test method is copyrighted by the American Association of Textile Chemists and Colorists (AATCC), PO Box 12215, 1 Davis Drive, Research Triangle Park, NC USA. All rights reserved.

AATCC grants you a license as follows: The right to download one electronic file of this AATCC test method for temporary storage on one computer for purposes of viewing, and/or printing one copy of the AATCC test method for individual use. Neither the electronic file nor the hard copy print may be reproduced in any way. In addition, the electronic file may not be distributed elsewhere over computer networks or otherwise. The hard copy print may only be distributed to other employees for their internal use within your organization.

This test method is not for resale.

Colorfastness to Powdered Non-Chlorine Bleach in Home Laundering

Developed in 1988 by AATCC Committee RA60; reaffirmed 1989, 1995, 2002; revised 1990, 1996, 1997, 2003, 2007 (with title change), 2010; editorially revised 1994, 2004, 2005, 2008, 2012; reaffirmed and editorially revised 2016.

1. Purpose and Scope

1.1 This test method is designed to evaluate the colorfastness to powdered non-chlorine bleach in home laundering of textiles which are expected to withstand frequent laundering. The fabric color changes resulting from the powdered non-chlorine bleach, detergent solution and abrasive action of five home launderings are evaluated.

1.2 First establish the level of performance with powdered non-chlorine bleach and if an effect is found, then retest with detergent alone. It may be necessary to use a water only wash to separate the effects of components like hardness, pH or chlorine content.

1.3 Since the powdered non-chlorine bleaches currently available contain ingredients other than the powdered non-chlorine bleach; such as fluorescent whitening agents, bluing, etc., it is the total effect of these chemicals on the color change that is being evaluated.

2. Principle

2.1 Specimens are laundered under appropriate conditions of temperature, detergent solution, powdered non-chlorine bleach solution and abrasive action for five home laundering cycles. The laundered specimens are evaluated for color change.

3. Terminology

3.1 **bleach**, n.—*in home laundering*, a product that will clean, whiten, brighten and aid in the removal of soils and stains from textile materials by oxidation that is inclusive of chlorine and non-chlorine products.

3.2 **colorfastness**, n.—the resistance of a material to change in any of its color characteristics, to transfer of its colorant(s) to adjacent materials or both, as a result of the exposure of the material to any environment that might be encountered during the processing, testing, storage or use of the materials.

3.3 **laundering**, n.—*of textile materials*, a process intended to remove soil

and/or stains by treatment (washing) with an aqueous detergent solution and normally including subsequent rinsing, extracting and drying.

3.4 **non-chlorine bleach**, n.—a product that does not release the hypochlorite ion in solution; i.e., sodium perborate, sodium percarbonate.

3.4.1 **liquid non-chlorine bleach**, n.—a product that contains hydrogen peroxide as its active ingredient.

3.4.2 **powdered non-chlorine bleach**, n.—a product that contains either sodium perborate or sodium percarbonate as its active ingredient.

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 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 WOB 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.

4.4 All chemicals should be handled with care.

4.5 The procedure for determining the percent active oxygen content outlined in 13.7 should be handled only in an adequately ventilated laboratory hood. In preparing, dispensing and handling the reagents, use chemical goggles or face shield, impervious gloves and an impervious apron.

4.6 An eyewash/safety shower should be located nearby and an organic vapor respirator should be available for emergency use.

4.7 Exposure to chemicals used in this procedure must be controlled at or below levels set by governmental authorities (e.g., Occupational Safety and Health Administration's [OSHA] permissible exposure limits [PEL] as found in 29 CFR

1910.1000; see web site: www.osha.gov for latest version). In addition, the American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values (TLVs) comprised of time weighted averages (TLV-TWA), short term exposure limits (TLV-STEL) and ceiling limits (TLV-C) are recommended as a general guide for air contaminant exposure which should be met (see 13.1).

5. Uses and Limitations

5.1 Non-chlorine bleaches are available in two different forms—powdered or liquid. This method only evaluates the colorfastness of textiles to powdered non-chlorine bleach in home laundering. Due to differences in active ingredients, the results obtained by this method may not be representative of results obtained by the use of liquid non-chlorine bleach on textiles during laundering.

6. Apparatus and Materials (see 13.2)

6.1 Automatic washing machine (see 13.3).

6.2 Automatic tumble dryer (see 13.4).

6.3 Conditioning/drying racks with pull-out screens or perforated shelves (see 13.5).

6.4 Ballast of $92 \times 92 \pm 3$ cm ($36 \times 36 \pm 1$ in.) hemmed pieces of bleached cotton sheeting (Wash load ballast type 1) or 50/50 polyester/cotton bleached of plain weave construction (Wash load ballast type 3).

6.5 1993 AATCC Standard Reference Detergent WOB or 2003 AATCC Standard Reference Liquid Detergent WOB (see 13.6).

6.6 Facilities for drip and line drying.

6.7 Balance with at least 5 kg (20 lbs) capacity.

6.8 Powdered non-chlorine bleach (see 13.7 and 13.8).

7. Test Specimens

7.1 The weight of the test specimen can influence the results of this test. Only one test specimen is to be laundered in a load. For ease in weighing fabrics, the test specimen weight is to be 110.0 ± 10.0 g (0.25 ± 0.02 lb). For garment testing, one garment is to be tested. If the garment weight exceeds the specified load weight of 1.8 kg or 4 lb, the total weight is to be included in the report. See 8.2.2 for exact weight specifications on load.