



**AMERICAN ASSOCIATION OF TEXTILE CHEMISTS AND COLORISTS  
TECHNICAL COMMITTEE ON RESEARCH (C3)**

**Report of the 338th Meeting  
Wednesday, November 12, 2008 – 5:45-6:45 pm**

The 338th meeting of the Technical Committee on Research took place on Wednesday, November 12, 2008. Elizabeth Eggert, TCR chair, convened the meeting at 5:45 pm.

The following members were present:

Elizabeth A. Eggert TCR Chair  
Rembert J. Truesdale III, TCR Vice Chair  
Christopher S. Leonard, TCR Secretary

Martin J. Bide  
Stephen B. Brooks  
Alan F. Bottenhoff  
Adi Chehna  
Fred L. Cook  
John Y. Daniels  
John A. Darsey Jr.

Thomas Fabian  
Leonard T. Farias  
Phillip L. Goodman  
Jayakumar  
Gopalakrishnan  
Kanti A. Jasani  
Paul L. Johnson  
Norma M. Keyes

Robert K. Lattie  
Susan Matter  
Luther M. Myers  
Nancy PeBenito  
David L. Ramey  
Richard S. Simonson  
Richard Slomko

**Others Present:**

Aaron Creech  
Tricia F. Day  
Perry Grady  
Harold K. Greeson Jr.  
Judy B. Holden

Smrithi Kumar  
Karen E. Kylo  
Kathleen O'Toole  
Peggy J. Pickett

Purnita Patel  
Louann Spirito  
Elizabeth Turnbull  
Heidi Woodacre  
Diana Wyman

**Announcements:**

Chair Eggert announced the upcoming workshops/symposia. It was also announced the e-Learning Modules are now on AATCC's website.

Chair Eggert reiterated that beginning in 2009, a new yearly TCR Service Award will be presented to recognize a committee member, senior status, who has shown an outstanding service in developing test methods, programs, etc., in the last five years. Chair Eggert announced that a person has been chosen and will receive this first award at the 2009 International Conference scheduled for March 10-12, 2009 in Myrtle Beach, SC. (Secretary's note: Please check our website at <http://www.aatcc.org/testing/committees/index.htm> to access information regarding nominations for the 2010 Award)

**RA23, Colorfastness to Water:** Changes were proposed to be made to the following methods to provide consistency between the methods: A) Multifiber test fabric: TMs 15 (Colorfastness to Perspiration), 106 (Colorfastness to Water: Sea), and 107 (Colorfastness to Water), will be revised to specify MF #10 with the exception of Silk, and then MF # 1 will be required; B) Sample Preparation: TMs 15, 106, 107 will also be revised to use wording in ISO 105-E04 as an option; C) Methods need to be updated for the sewing of the Multifiber and then reviewed for balloting. Proposed revision of AATCC Methods 15, 106 and 107 to include Multifiber #1 and #10 with minor editorial changes, will be submitted to committee letter ballot. The proposed revision to TM 162 (Colorfastness to Water: Chlorinated Pool) to add Option 2 will require additional specimens to be run to achieve a wider range. Also results of test from original test is outstanding (partial results discussed and indicated more testing was needed). A study to determine if AATCC control fabric will not change when exposed to fabrics suspected of having finish that will prevent change to control fabric will be conducted. Further, an investigation of different (lower time) for processing for AATCC Method 107, will be done. Regarding the convection oven issue, Shirley Powlette reported in an earlier meeting that oven will produce inconsistent results for TMs 15, 106 and 107. Initial testing indicated that BHT- free bags used to control conditions did not produce different results than without. AATCC attempted to question if testing was required since the new evidence was made. The chair did not receive a response from Ms. Powlette; therefore, the committee elected to remove the item from the agenda.

**RA24, Fiber Analysis:** Results of the 82 laboratory International Cotton/Rayon and Angora Rabbit/Wool Proficiency Trial were reviewed and all labs participating were found to be within about 3% of the average for the group for rayon/cotton and about 4% for angora rabbit/wool. For angora/wool blends the tested values trended away from the nominal value of the test specimens somewhat. The upcoming Proficiency Trial blend was confirmed to be acetate/rayon. In furtherance of the efforts of the Spandex Subcommittee successful ruggedness testing permitted the development of solvent separation procedure 8 using Dimethylacetamide, which was incorporated in a committee ballot along with some editorial and minor technical changes including an update suggested by SGS in New Delhi. Ruggedness testing using PLA, or polylactic acid, was also approved with samples being provided by Punita Patel of Fred David to AATCC Technical Center for distribution to ruggedness study members: FITI, Vartest, Intertek and Fred David. The Elemental Silver Subcommittee will send a group of metallic fibers to AATCC Technical Center by FITI for use in a ruggedness trial to assess the characteristics and distribution of the metal in these fibers. Participating labs for this trial will be FITI, Vartest and Fred David. First Order Red Polarized Light Images of eight different fiber types were reviewed for use as a color quality control aid which would be sold by AATCC. Acting Chair, Adam Varley was nominated to again be full chair of RA24 beginning in January 2009.

**RA31, Antimicrobial Activity:** Beth Joiner with NAMSA presented proposed changes to all test methods to expand the list of equivalent test organisms and suppliers across the world. That was a cross reference list to organisms that are in other countries. The

committee agreed that as long as the actual organism strains and supplier is reported on final report this would not impact AATCC test method results. It was agreed by show of hands that a letter will be issued for the proposed changes for all antimicrobial methods to comply. An agreement was reached that TM 90 (Antibacterial Activity of Fabrics, Detection of: Agar Plate Method) and revision of TM 147 (Antibacterial Activity Assessment of Textile Materials: Parallel Streak Method) will be balloted for changes. Negative votes on shaving of a third test sample in Part III for the current TM 174 were discussed and no agreement was established. More work will be required to solve the impasse and the committee will request guidance on solving the problem from Chris Leonard, AATCC technical director. David Ramey of Microban will act as chair of RA31 during 2009. Mrs. Joiner accepted the appointment as secretary.

**RA33, Colorfastness to Atmospheric Contaminants:** It was reported for TM 23, Colorfastness to Burnt Gas Fumes, that Testfabrics is almost out of Lot #19 control ribbon. Lot #20 has been dyed and sample submitted to AATCC. The sample was exposed and is inconclusive. Additional samples will be supplied to AATCC and Chris Leonard, AATCC technical director, will send to other labs with gas chambers to help with the exposures. He will also try to find a lab with the High Humidity unit to expose as well. It was reported for TM 109, Colorfastness to Ozone in the Atmosphere under Low Humidities, that a control fabric is needed before round robin can be conducted to generate a precision and bias statement. It was reported for TM 129, Colorfastness to Ozone in the Atmosphere under High Humidities, that complaints still persist on the High Humidity Ozone control ribbon. Mr. Leonard will expose the current lot and measure the Delta E value. The value in the AATCC Technical Manual does not match the readings of an exposed sample. The number in the Manual may need to be corrected.

**RA34, Preparation:** The recent Committee Ballot for proposed revision of TM 97, Extractable Content of Greige and/or Prepared Textiles, with inclusion of a precision and bias statement did not receive any negatives, only one comment from an affirmative voter. The comments were resolved and some editorial changes were made. It is now ready to be submitted to a TCR ballot. Comparison of ISO 3071 (pH by Shaker method) to AATCC Method 81 (pH by boil-down) was done by FITI in Korea. ISO was somewhat lower than AATCC on selected garments. A statement should be added to TM 81 stating this method is not applicable to finished textiles. A committee ballot to merge Research Committee RA66, Mercerization Test Methods, with RA34 will be submitted to both committees for approval. If approved, Mary Ankeny, current chair of RA66, will serve as the subcommittee chair for TM 89, Mercerization of Cotton. This method will be updated to include NIR in lieu of titration for Barium number. Angelo Rizzardi of Innova International gave a talk on "Novel Approach to Continuous Bleaching of Woven Fabrics."

**RA36, Color Measurement:** TM 173 (CMC: Calculation of Small Color Differences for Acceptability) will be revised to delete the computer program and will be submitted to committee ballot. The proposed new gray scale holder was reviewed. There appears to be no user interest; therefore, this matter will be dropped. The proposed new Color Rule was presented to the committee in May. There has been no progress on this item.

AATCC will contact SDC regarding their plans. AATCC presented the new visual gray scale proficiency program. An update was given on the new UV Calibration Program subscription process. Registration is active. There are 280 labs participating so far. RA36 recommended a replacement fee at a small cost plus shipping and handling. This would be for labs who are requesting new samples prematurely. Also, when new samples are sent out, a sticker will be placed on the amber bag where labs can check off the date and initial each time the specimens have been used to hopefully prevent over-usage of the samples. The committee will re-visit the development of an evaluation procedure for instrumental assessment of staining. The proposed committee ballot (#360308) for revision to Evaluation Procedure 9 (Visual Assessment of Color Difference of Textiles) resulted in several editorial comments and two negatives. The chair will contact the negative voters to withdraw their negatives so that the editorial comments can move on to TCR ballot. A subcommittee will be formed to address the extensive negative comments for future balloting. Kenneth Butts of Datacolor has been nominated as the new chair of RA36 beginning in January 2009. Jean Hoskins of Macy's has agreed to be the new secretary.

**RA38, Colorfastness to Crocking:** A committee ballot for revision of TMs 8 (Colorfastness to Crocking: Crockmeter Method) and 116 (Colorfastness to Crocking: Rotary Vertical Crockmeter Method) to remove instrumental grading note from the Notes Section and add it to the Evaluation Section of the methods; to add to the Report Section as well; and to include in the Notes Section an option to grade adjacent staining and color change of the crocked specimen, was submitted. The ballot received two negatives which were mainly to do with clarifying which electronic grading systems the notes refer to and do these electronic grading systems have data to demonstrate that they provide equal or better results than an experience grader. The committee decided to let the negatives stand and to withdraw the ballot leaving the methods as is.

**RA42, Dimensional Change:** A recent committee ballot for proposed revisions of TM 150, Dimensional Changes of Garments after Home Laundering, to change the title and scope to include home textile products, resulted in three comments with affirmative votes which were considered valid comments. The comments were to make the title "Dimensional Changes of Textile Products after Home Laundering," instead of the one balloted. With these changes the text needs to reflect the title changes in 7.4.2, 6.1 and 6.2. Norma Keyes will make these changes and the method will be submitted to another committee ballot. TM 179 (Skewness Change in Fabric and Garment Twist Resulting from Automatic Home Laundering) needs a precision and bias statement and inclusion of side seam twist option added. The chair will review the ISO method and this method and draft revisions for a committee ballot. Jodie Lynch will distribute a proposed draft for a proposed new method for Dimensional Stability to Home Laundering for Socks and Hosiery, for review and comments. She will also develop data for a precision and bias statement for the method. International members suggest that with and without optical brightener detergent should be referenced in RA42's methods. A question from them regarding standards for Dimensional Stability was referred to ASTM.

**RA43, Professional Textile Care:** Bill and Karen Tompko of H2Only Inc. presented a talk on “Wet Cleaning Practices and Consumer Issues.”

**RA50, Colorfastness to Light:** The final draft for revision of TM 16 (Colorfastness to Light) was reviewed at the November meeting. The method is being revised for clarity. The Blue Wool subcommittee is pursuing the possibility of inkjet printing. Methods requiring reaffirmations are TM 111 (Weather Resistance of Textiles: Exposure to Daylight and Weather), TM 186 (Weather Resistance: UV Light and Moisture Exposure), TM 192 (Weather Resistance of Textiles: Sunshine-Arc Lamp Exposure With or Without Wetting) and TM 169 (Weather Resistance of Textiles: Xenon Lamp Exposure). James Heal, Q-Lab and Atlas will offer testing services for the ISO 105-B10 Ring Test.

**RA56, Stain Resistance:** Proposed revision of TM 130 (Soil Release: Oily Stain Release Method) was submitted to TCR ballot and received several negatives of which the chair will try to resolve. The committee will start preliminary planning for top load washers and High Efficiency washers to see what the differences are. Any activity and studies to be developed would be considered only after receiving guidelines from RA88. Also, the committee wishes to consider a proficiency testing program for TM 130.

**RA57, Floor Covering:** Tom Perry with Dow Chemical is heading a subcommittee working to develop a proposed test method for “Moisture Penetration of Textile Floor Covering” to provide a similar method to the British Spill Test. Richard Turner of Mohawk Industries is chairing a subcommittee on Bleach Resistance. Interlabs were run on both methods which revealed issues in the methods. They are to be modified and trials run again. With a new method of dyeing, the color consistency of the chips for the Red 40 Stain Scales has improved. The committee is still working on a better presentation format. A subcommittee has been formed to help in this situation. Volunteers were solicited to work on calibration cloths for TM 109 (Colorfastness Ozone in the Atmosphere under Low Humidities). It was discussed merging the RA32, Static Electricity Test Methods Committee with RA57.

**RA59, Fibrous Test Materials:** ISO Documents N2452 and N2456 were discussed and approved with comments. The committee is awaiting results of staining performance of proposed new acetate ribbon as a single adjacent fabric. The results from Testfabrics and Intertek will be reviewed. Whiteness values are to be included in ISO 105-F10 which has been reviewed by Roland Connelly of X-Rite. The following items were discussed under new items: expiration dates of single adjacents discussed; ring spun versus open end differentiation of staining; N2452 was approved with addition of whiteness values and in document 2456; and whiteness values to determine expiration date of single adjacent fabrics.

**RA60, Colorfastness to Washing:** The proposed revision of TM 61 (Colorfastness to Laundering: Accelerated), Option 1B, to use rubber balls as an alternative to stainless steel balls, will move forward to a TCR ballot. The committee ballot on the proposed new method, “Colorfastness to Non-Chlorine Bleach-Accelerated, received several negatives which have been resolved. However, one negative is outstanding and the chair has had

trouble contacting this person to resolve the negative. Chris Leonard of the AATCC staff was requested to investigate a set procedure when a negative voter cannot be reached for resolution. (Secretary Note: Mr. Leonard found that the set procedure is noted in the *AATCC Rules and Regulations for Test Method and Technology Committees* located in the back of each Technical Manual.) The committee is working on the precision and bias statement for this method (concurrently with development of a P&B for the proposed new Colorfastness to Chlorine Bleach method). Mr. Leonard will send P&B protocol to Karen Killo of SGS so that a statement can be generated for these two methods. The proposed method for Colorfastness to Chlorine Bleach: Accelerated will proceed to TCR. Mr. Leonard will e-mail data of liquid detergent testing using TMs 61, 188 (Colorfastness to Sodium Hypochlorite Bleach in Home Laundering) and 124 (Appearance of Fabrics after Repeated Home Laundering) for committee review. All responses need to be submitted to the chair by January 1 in order to proceed to committee ballot. Proposed revisions to the Hand Laundering method will be e-mailed to members with comments due to the chair by March 1.

**RA61, Appearance Retention:** The committee drafted and agreed to new language to allow the use of instrumental grading systems in TMs 124 (Appearance of Fabrics after Repeated Home Laundering) and 128 (Wrinkle Recovery of Fabrics: Appearance Method). Additional changes to TM 124, including a title revision, were also discussed and the recommended changes to both methods will be sent to committee ballot. The TM 124 training video under development will be discussed with AATCC to see if the video would be a better fit with the AATCC workshop program. For light intensity, the committee agreed to contact additional experts to understand how to measure light intensity and what is a noticeable change. The committee learned that a ballast supplier is no longer able to meet the ballast criteria in the method and the committee agreed to contact other suppliers before changing the specifications in the method.

**RA63, Water Resistance, Absorbency and Wetting Agent Evaluation:** The proposed new method, "Liquid Moisture Management Properties of Porous Materials," was re-balloted to the committee in August 2008 receiving four negatives and other comments. In addition, the ballot did not receive enough votes to be a valid ballot. The negatives received will be resolved and included in the next committee ballot, hopefully by the end of the year. Precision and bias were in question and new data will be prepared. The committee suggested that TCR/RA99 should revise the Style Guide to allow methods to be balloted to committee without a precision and bias statement, then follow up with P&B data prior to a TCR ballot. TM 79 (Absorbency of Textiles) with an alternative third procedure will undergo precision and bias study. Norma Keyes distributed a proposed draft for comments. The vertical wicking of textiles will undergo a precision and bias study. Need to identify if there is a data set that can be used for precision and bias of this method. Tom Fabian of Underwriters Labs gave an update on the past history and recapped previous discussions of the proposed drying time method. The Association of the Nonwovens Fabrics Industry, INDA, has a healthcare committee. In February 2008 the Association for Advancement of Medical Instruments, AAMI PB 70 – Protective Clothing Standard for the Health Care Industry, had a proposal to consider changes in the blotter paper for AATCC Methods 127 (Hydrostatic Pressure Test) and 42 (Impact

Penetration. RA63 committee members will be e-mailed a copy of the proposal from INDA to determine what is being requested of the committee.

**RA75, Correlation of Laboratory Tests with End Use Performance:** The committee letter ballot for proposed new name and scope of RA75 received one negative and comments from another. The chair will contact the negative voter to try and resolve the negative.

**RA80, Printing Technology:** Samuel Moore of Hohenstein USA gave a presentation on "Oeko-Tex Standards as They Relate to Textile Printing and Coloration." Plans to begin on the revision of the Textile Printing Handbook will be revived. A conference call will be scheduled before the end of the year or beginning of 2009. The recent Textile Printing Symposium was very well received by attendees. There was also great interest and participation in the tours of Cotton Incorporated and [TC]<sup>2</sup>.

**RA88, Home Laundering Technology:** Todd Wernicke of Procter and Gamble was voted in to replace Glenn Jordan as chair. Mr. Jordan resigned as chair in August to pursue teaching. Mr. Wernicke will also assume Chairship for a three year term beginning January 2009. The committee reviewed draft plans for Home Laundering Test Conditions for front loading high efficiency washing machines and agreed to submit the draft to AHAM/WMM for feedback prior to submitting for committee ballot. AATCC began performance testing with top loading washers from pre and post 2007 DOE requirements. Results will be shared with the committee before any top loading washers conditions are balloted.

**RA89, Hand Evaluation:** The committee is working to develop two new instrumental test methods for the measurement of attributes of fabric hand to augment the AATCC Evaluation Procedure 5, a standard guide for the subjective evaluation of hand. The friction resistance test procedure has not been advanced because S. S. Ramkumar has not put the procedure into AATCC format yet. He was not able to attend this meeting. The other instrument test procedure based on a CyberTeck Inc. PhabrOmeter was furthered with a cooperative study between Procter & Gamble and Cotton Incorporation. Vikki Martin of Cotton, made a presentation on data from three PhabrOmeters (P&G with 2 and Cotton with 1) and five fabrics. The information from the study showed that data from different instruments were similar and showed the same trends for drape, relative hand value and stiffness, but vector differences were observed. A subcommittee was formed to further explore the development on this test procedure which includes Vikki Martin, Leslie Waite, Mark Granja and Harrie Schoots.

**RA99, Technical Manual Editorial Review Board:** Genevieve Smith, a member of RA99, passed away earlier this year. Ann Laidlaw with X-rite has kindly agreed to join RA99 to fill this position. The chair is actively recruiting another member to replace Nick Agrawal who had to resign from the committee also earlier this year. RA99 reviewed the proposed new Liquid Moisture Management test when it was submitted to a recent RA63 committee ballot. We submitted negatives and comments. The committee also reviewed items on the recent TCR ballot and submitted negatives and comments. Discussion with

the company responsible for the graphics used in AATCC test methods revealed that it would be extremely expensive for AATCC to adopt the same graphics format used by ISO. However, discussion with the ISO graphics group revealed that they were not adverse to converting AATCC's graphics to those used in ISO documents.

**RA100, Safety, Health and Environmental Technology:** Joseph Nilsen, of DLA, chair of RA100, gave a presentation on the DLA REACH program and the textile industry. The committee is pursuing a change in the committee's name to "Textile Sustainability and Consumer Safety."

**RA102, Statistics Advisory:** A new form has been developed by AATCC for test method committees to communicate the need for assistance from Committee RA102, Statistics Advisory. The form will be available in the *Research Chairs Handbook* to be distributed in May 2009, and from Chris Leonard, AATCC technical Director in the interim. Completed forms, along with data, should be sent to Mr. Leonard for submission to the chair of RA102 and for record keeping purposes. Test Method Chairs were encouraged to participate in RA102 to help move precision and bias items forward.

**RA103, Spectroscopic Technologies:** James Rodgers with SRRC-ARS-USDA and Keith Beck of N. C. State University gave a presentation on "Polyester-Cotton Blend Content in Printed and Dyed Fabrics by NIR." Discussed from the talk was the feasibility of developing a "universal" Near Infrared (NIR) method to measure the cotton content in dyed or pigmented commercial polyester-cotton blend fabrics. Using advanced statistically modeling techniques, calibration were developed that accurately and rapidly (5 minutes) measure the cotton content in the blend fabrics, with over 85% of the samples agreeing within  $\pm 3.0\%$  cotton content (NIR vs. lab results). The method should be transferable to other NIR instruments.

**RA104, Garment Wet Processing Technology:** Don Alexander with Anovotek LLC gave a presentation of "Functional Finish Trends as related to Garment." His slide presentation will be attached to the RA104 minutes when distributed.

**RA106, UV Protective Textiles:** Peter Weitzman from Labsphere presented on the measurement of UV transmittance through sunscreen using their new device, UV2000S. The device is a replacement of the UV1000S (the UV1000F for fabrics will be discontinued at the end of the year but they will continue to support it for three years). The new device design has a larger sample examination area than the previous device and should therefore be more accommodating for stretched and/or wet sample holders. The Precision and Bias data for TM 183, Transmittance or Blocking of Erythemally Weighted Ultraviolet Radiation through Fabrics, has been collected for the wet state (dry state already exists) and submitted to Chris Moses, chair of RA102, for review and assistance. After the P&B is completed the draft revision of TM 183 will be balloted. The method is also due for reaffirmation next year. Regarding the stretched fabric test method development, there is a possibility of using a device originally developed for sunscreen evaluation. There would be some modification of a mounting device to orient the specimens. The proposed AATCC UV Protective Products Technical Supplement is

to provide clarity on the testing and labeling of UV protective products. The guide is to calling out the need to use the two ASTM methods (D 6544 and D 6603) and AATCC Method 183 to properly qualify products as UV protective. Related AATCC articles will also be included. It will be limited to apparel products and not include shade, umbrellas, awnings, etc. The supplement was discussed with ASTM prior to the start of the project, but they prefer instead of the supplement to including relevant complimentary information in Annex sections to their test methods. Similarly, Committee RA106 will similarly consider adding an Addendum to TM 183. Nancy PeBenito, chair of RA106, will discuss this with the ASTM committee on UV protection and the staff at AATCC to determine how to proceed. It was announced that the Federal Trade Commission is considering updating UV labeling requirements.

**RA109, Flammability Technology:** Ron Dombrowski of TechTex Solutions Inc. presented a talk on "Barrier Designs." He also gave an update on the California TB604.

**RA110, Nonwovens Technology:** AATCC and INDA recently had a meeting to discuss how AATCC can proceed with the activities of this committee. Steve Ogle of INDA has agreed to be liaison for INDA along with Chris Leonard of AATCC representing AATCC. It was also suggested that a web page be created to have activities of this committee posted on the web. Mr. Ogle was to go back to INDA and see whether they would be willing to provide short columns for the web site. To publicize this committee, Perry Grady will send an e-mail to the MIG to ask if they would like to become members of this committee. A list serve was also suggested. Further, it was noted that the interests of this committee falls in line with the scope of the AATCC Materials Interest Group. Therefore it was suggested that RA110 be transferred to be a subcommittee of the MIG. This would need to be balloted through RA110 and TCR and will be submitted to AATCC.

**Time and Place of next meeting** The next series of committee meetings will be held during the spring series of meetings on May 5-7, 2009 at the Radisson Hotel/AATCC Technical Center in Research Triangle Park, N. C. Check our website in February at <http://www.aatcc.org/testing/committees/index.htm> for more details.

**How to Participate:** For information regarding these meetings and how to take part in committee work, contact Tricia F. Day, AATCC technical assistant, P.O. Box 12215, Research Triangle Park, N.C. 27709; tel: +1 919 549 3534; fax: +1 919 549 8933; e-mail: [dayt@aatcc.org](mailto:dayt@aatcc.org).

Respectfully submitted,

*Christopher S. Leonard*

TCR Secretary

Signed: \_\_\_\_\_ (Liz Eggert) \_\_\_\_\_  
Elizabeth Eggert, Chair TCR