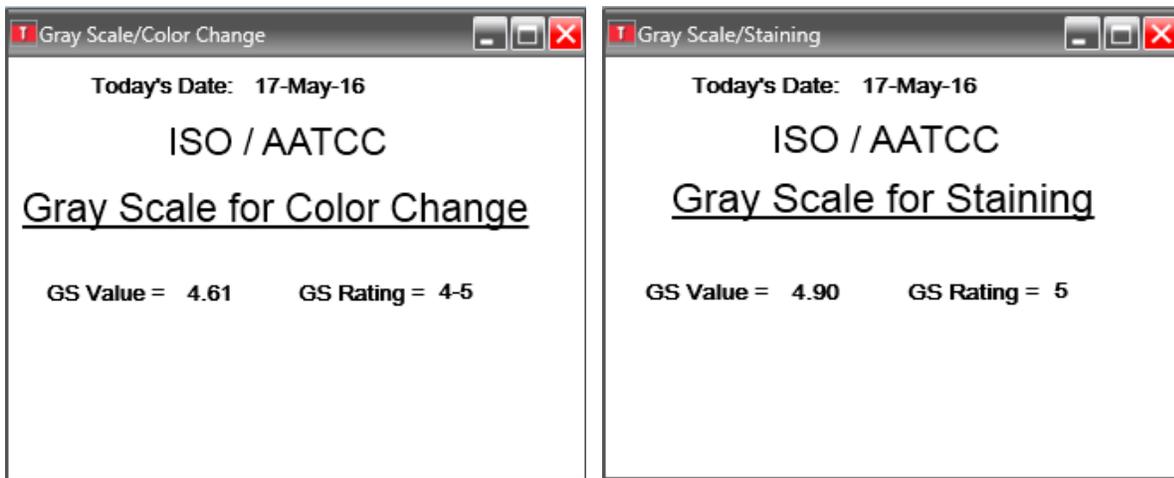


Gray Scale for Color Change and Gray Scale for staining

The Gray Change and Gray Stain scales are each based on a gray set of visual paint chips that can be purchased from AATCC www.aatcc.org. Both scales measure color-fastness of textile dyes. Gray Scale for color change indicates the amount of fading or color alteration with environmental exposure or washing, and gray scale for staining indicates the amount of staining of adjacent materials that occurs with washing of a specimen. Both scales are based on relative small differences between a product standard and lot sample of any color in comparison to these two gray scales (5 = no difference; 1 = most difference).

In Datacolor Tools software, there are 2 screen forms that will display the AATCC Gray Scale difference as well as Gray Scale for Color change.



To obtain a **gray scale rating for staining** you follow the following procedure.

1. Measure your standard by clicking on the Std:inst button in Tools and naming the standard then measuring it. Note: For staining you will measure the color of the piece of fabric before it has been treated.
2. Measure you batch by clicking on the Bat:instrument button. You will name the batch then measure the piece of fabric after it has been treated to see how much staining has occurred.
3. The preferred illuminant/observer conditions are D65/10°. C/2° and C/10° are also permitted by the test method.
4. The you will go to the 'forms' tab the screen form then select the form 'Gray Scale for staining. This displays both the ISO Gray Scale Value and the AATCC Gray Scale Rating

The rating on the page will tell how much staining there is. 5 being the least amount of staining and 1 being the most amount of staining. The Gray scale for staining is used to rate staining from washing i.e. 2A wash test, Crock transference: **AATCC Test Method 8** or **ISO Test Method 105-X12**

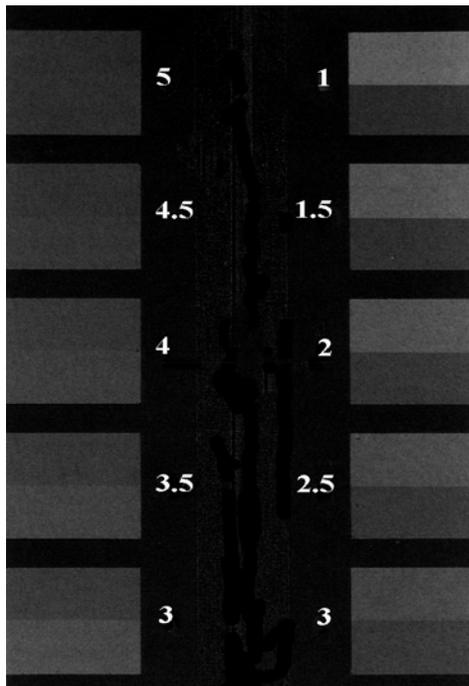
To obtain a **gray scale rating for color change** you follow the following procedure.

1. Measure your standard by clicking on the Std:inst button in Tools and naming the standard then measuring it. Note: For color change you will measure the color of the piece of fabric before it has been treated.
2. Measure you batch by clicking on the Bat:instrument button. You will name the batch then measure the piece of fabric after it has been treated to see how much color change has occurred.
3. The preferred illuminant/observer conditions are D65/10°. C/2° and C/10° are also permitted by the test method.
4. The you will go to the 'forms' tab the screen form then select the form 'Gray Scale for Color Change. This displays both the ISO Gray Scale Value and the AATCC Gray Scale Rating
The rating on the page will tell how much Color change there is. 5 being the least amount of staining and 1 being the most color change

More information on Gray Scale for Color Change and Gray Scales for Staining

Gray Scale for Color Change

The loss of color using the gray change scale is evaluated by comparison to five pairs of gray standards similar to those shown below. One half of each standard is always of identical chroma to the starting specimen. The second half ranges from the starting chroma (no loss of color) to white (loss of all color). The amount of contrast between the treated and untreated fabric is related to one of the standard pairs to yield the gray scale rating. On this scale, 5 indicates that next to no color was lost, and 1 indicates that most color was lost.



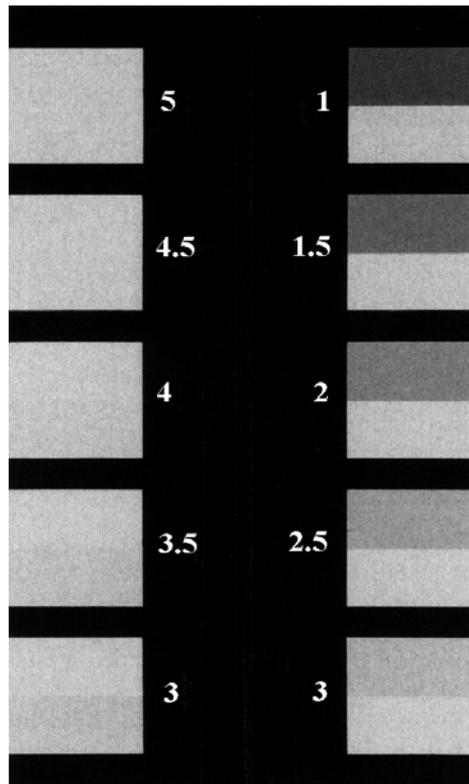
Gray Scale for Color Change

The bottom half of each pair shows the starting color. The top half shows the color of the treated fabric. (Illustration from AATCC Evaluation Procedure 1.)

Gray Scale Rating for Color Change, as implemented in Datacolor Tools, is based on ISO 105- A05:1996, Textiles-Tests for Colour Fastness-Part A05: Instrumental Assessment of Change in Colour for Determination of Grey Scale Rating. This method is equivalent to AATCC Evaluation Procedure 7, "Instrumental Assessment of the Change in Color of a Test Specimen." It is intended as an alternative to the visual assessment described in ISO 105-A02: 1993, Textiles-Tests for Colour Fastness-Part A02: Grey Scale for Assessing Change in Colour, or AATCC Evaluation Procedure 1, "Gray Scale for Color Change." It may be used in assessing any samples except those which have been treated with fluorescent whitening agents (FWAs).

Gray Scale for Staining

The transference of color from the test specimen to an adjacent specimen is evaluated in a manner very similar to that of gray change. Again, five standard pairs are used. One half of each standard is white, and the second half ranges from white (no staining) to a gray with the chroma value of the test specimen (great deal of staining). A value of 5 corresponds to virtually no staining, whereas 1 indicates poor color-fastness.



Gray Scale for Staining

The bottom half of each pair shows the starting color of the adjacent fabric. The top half shows the color of the treated adjacent fabric. (Illustration from AATCC Evaluation Procedure 2.)

Gray Scale for Staining, in Datacolor Tools, is based on ISO 105-A04: 1989, Textiles-Tests for Colour Fastness-Part A04: Method for the Instrumental Assessment of the Degree of Staining of Adjacent Fabrics. It is intended as an alternative to the visual assessment described in ISO 105-A03: 1993, Textiles-Tests for Colour Fastness-Part A03: 1993, Textiles-Tests for

Colour Fastness-Part A03: Grey Scale for Assessing Staining, or AATCC Evaluation Procedure 2, "Gray Scale for Staining."

Reference

Trotman, E.R., *Dyeing and Chemical Technology of Textile Fibres*, Charles Griffin and Co. Ltd.: 1984.