

Assessment of Color Change Color Matching Cabinet

This cabinet uses certain light sources to determine changes in fabric in three areas using three separate scales: AATCC Gray Scale for Color Change, AATCC Gray Scale for Staining, and AATCC Chromatic Transference Scale.

Tests that create situations in which color change must be evaluated include:

- Launder-Ometer
- Weather-Ometer
- Crocking
- Perspiration

Preparation:

For the purpose of this class we will use the light source D65, "Artificial Light," to evaluate all fabrics using each of the three scales. Although some fabrics may appear to have not changed at all under this light, it is possible when observed under other light sources that it will show some level of color change.

Be sure to close all blinds that are next to the Color Matching Cabinet before you begin your evaluation.

AATCC Evaluation Procedure 1: Gray Scale for Color Change

What this evaluation is used for:

This evaluation method describes the use of a Gray Scale for evaluating changes in color of textiles resulting from colorfastness tests.

How this evaluation is used:

Place a piece of the original, untested fabric and the tested specimen side by side in the same plane and going in the same direction in the Color Matching Cabinet so it can be viewed at a 45° angle. Place the Gray Scale along the edges of the two fabrics, tested and untested. Compare the visual difference between the two fabrics to the differences represented by the Gray Scale. Determine the grade by figuring out the grade that corresponds with the most appropriate change in color. A grade of 5 is given only when there is no perceived difference in color or contrast between the original and the tested specimen. Each person in the group needs to assign a grade to each specimen and then the group will come up with an average for their fabric for each test.

AATCC Evaluation Procedure 2: Gray Scale for Staining

What this evaluation is used for:

This evaluation describes the use of the Gray Scale for evaluating staining of unstained textiles resulting from colorfastness tests.

How this evaluation is used:

Place the specimen of the stained fabric side by side with a piece of the unstained fabric oriented in the same direction in the Color Matching Cabinet so it can be viewed at a 45° angle. Place the

Gray Scale along the edges of the test specimen and unstained fabric with the junctions of the Gray Scale and the fabrics aligned. Compare the differences in the two fabrics with the scale and assign a grade. A grade of 5 is given only when there is no difference in color or contrast between the tested and untested. Each person in the group needs to assign a grade to each specimen and then the group will come up with an average for their fabric for each test.

AATCC Evaluation Procedure 3: Chromatic Transference Scale (5-Step)

What this evaluation is used for:

This evaluation describes the use of a 5-Step Chromatic Transference Scale for evaluating staining on undyed textiles in colorfastness tests.

How this evaluation is used:

This scale uses five hues from the *Munsell Book of Color* (red, yellow, green, blue, and purple) as well as the gray chips from the Gray Scale for Staining.

The chips appear on the scale in five rows on white cardboard. The rows are placed and aligned so that every color shows a similar gradation in depth in a vertical line, ranging from the lighter colors on top to the darkest colors on bottom.

A white cardboard mask is provided so that when it is held vertically over the scale it discloses one of the circular openings in the color scale and two of the adjacent color chips.

The fabric with the transferred color to be evaluated should be placed behind the cardboard with the chips, so that a part of colored fabric is visible through one of the circular holes that most closely resembles the hue.

Before determining the rating of a fabric, especially a thin material such as white cotton sheeting, it should be backed with a number of layers of the clean test cloth

With the mask in place, the specimen and the mask are then moved up and down in the column until the specimen most closely approximates the chroma of one of the chips in the column. If the specimen falls between a chip of a greater intensity and one of lesser intensity, a half-step grade may be assigned, such as 1.5.

In order to eliminate or minimize the shadow on the specimen, the Scale and the specimen should be held so that they are perpendicular to the light source. A grade of 5 is equal to no color transfer and a grade of 1 is the greatest amount of transfer or the most drastic change.