

The process of pressing plastic plaques is necessary for creating a standard for color selection in sample materials. However, maintaining color consistency between pressed samples and raw pellet materials requires the use of advanced technology and color measurement instrumentation. As materials are pressed and heated, it is important to use the right instrumentation to maintain color consistency between each sample and projected product color development. By understanding spectral analysis and utilizing the appropriate geometries and tools, color consistency and consumer satisfaction are attainable.

Plastic plaques can [range from opaque to translucent to even transparent](#). These variations alter the amount of light that can pass through the sample, requiring different measurement techniques to accurately calculate the color value of the material. For example, opaque plaques block light transmissions, therefore requiring a Directional 45°/0° reflectance instrument or a Diffuse d/8° reflectance instrument to accurately quantify the color measurement for repeatability. This advanced color measurement system provides numeric quantification, which correlates directly to visual perception. Color consistency can be guaranteed in sample materials, rendering colors both repeatable and transferable to other processes in polymer product development.

Avoiding Challenges in Plastic Plaque Development

Challenges in color consistency and stability are often accounted for in the transition from raw materials to pressed plastic plaque development. Compression molding and heat can both cause changes in the appearance of plastic materials and often affect the Yellow Index measurements in these products. Plastic materials tend to degrade with exposure to heat, resulting in a slightly more yellowish appearance than [cut granules or pellet form](#). It's important to develop an accurate measurement system to account for these variations and quantify the changes for quality control and color consistency.

Color values must correspond with visual acceptability in order to meet standardization requirements. Any notable differences in color saturation, hue, or lightness can alter the [final product color target](#) and disrupt the quality of the product. The ability to accurately quantify these various dimensions of color requires both advanced instrumentation and expert analysis techniques.

Full article with photos available here:

<https://www.hunterlab.com/blog/color-plastics/avoid-challenges-maintain-color-consistency-plastic-plaque-production/>

Understanding the Various Methods of Color Analysis

Plastic plaques represent a variety of hues and variations in polymer color options, and understanding color tolerances and differences are crucial when comparing sample materials to final product color. Variation in color transparencies and thicknesses can alter color perception when developing a sample color baseline. Standardization in color measurement for the development of plastic plaques has been determined by the American Society for Testing and Materials (ASTM)¹ to establish [standard practice and calculation guidelines](#). These standards are based on specific CIE color scale² and [tristimulus value measurements](#) to ensure color consistency between plaques and raw polymer materials.