



Acrylic plastics are used in a wide variety of consumer products, and are produced in many different colors. Image Credit: Unsplash user Sebastian Pichtler

Cheap. Durable. Versatile. These are the qualities that have led to the rise of the acrylics over the past century. Attractive across a broad range of industries, acrylics are now produced on a constant basis in vast quantities. They are found everywhere from airline windshields to hot tubs to jewelry, and their popularity shows little signs of diminishing. The caveat, however, is that such high demand has created strong competition in the industry. Acrylic manufacturers who are unable to meet industry standards for price, efficiency, and quality control may find themselves losing market share to competing firms.

One of the easiest ways to produce a substandard and unsaleable batch is to create incorrect or inconsistently colored acrylic. Customers may have very specific demands for the coloration of their products and rely on manufacturers to produce acrylics which meet their standards. As acrylic in its basic form is transparent, each shade requires the inclusion of discrete mixes of color additives. Given that the production of acrylic plastic requires highly specific temperatures, timing, and amounts of pigment, each shade requires its own unique formula. With such specificity demanded, it's all too easy for a slight mistake to push a batch beyond the bounds of tolerance.



Monitoring the color of acrylic products is essential to meeting customer expectations. Image Source: Flickr user tiffany terry

Spectrophotometers Are Essential For Acrylic Color Quality Control

Acrylic manufacturers must implement a rigorous color quality assurance system to complement their various other methods of quality control. Fundamental to successful acrylic color quality control is the spectrophotometer. These instruments can detect the color of transparent or opaque materials with unerring and infinitesimal precision.

Put into practice, spectrophotometers aid acrylic manufacturers in two main ways. First, acrylic manufacturers can assess test batches to ensure that they result in incorrectly colored plastics before they are scaled up for a full run. This allows manufacturers to fine tune their formulae, making certain that when the time comes to commit the materials and energy needed to produce a full product run, the end result will be exactly the right color.

Next, spectrophotometers can be used to [assess the color of acrylics](#) both during and after the manufacturing process. This ensures that the desired color is maintained throughout the production phase and that each batch of acrylic produced falls within established color tolerance standards before it is shipped to the client. Keeping a close eye on color during manufacturing helps make sure

that no variations occur. Should any variation be detected, manufacturers are able to correct it with a minimal loss of time, energy, or material. By subjecting each batch to a final scan before shipping it to a client, manufacturers can protect themselves from the rework and possible reputational damage that can result from delivering a substandard batch.



Acrylics manufacturers must often make very large batches of consistently colored plastics. Image Credit: Unsplash user Peter Feghali

Spectrophotometers Set Color Standards Across the Industry

[The use of spectrophotometers](#) also helps manufacturers communicate [specific color requests](#) with their clients. As opposed to the fuzzy language of ordinary color communication, spectrophotometers render color on a numerical scale. The hitch standardization process ensures that each instrument using the standard system interprets color the same way and allows operators to adhere to color standards with decimal accuracy, even if working thousands of miles apart. Further, it ensures that when manufacturers test their batches for quality control, they are testing them against the exact standard that their clients will be judging them against.

[Designed for industrial use](#), spectrophotometers are rapid, reliable, and small enough to easily fit in standard industrial laboratories and production floors. They can be configured to measure samples of various sizes and can make each measurement in under five seconds. An additional benefit is that technicians can operate spectrophotometers without extensive training. To determine if a batch meets the standard, all they would need to do is select the standard from the instrument's memory, insert the sample, press a button on the screen, and read the results. The instrument itself will display whether a sample has passed or failed, so technicians do not need to spend extra time interpreting the readout.

The HunterLab Difference

At HunterLab, we've been designing spectrophotometers for industrial use for over sixty years. Our instruments are used by acrylic manufacturers across the world and set the standard for industrial color measurement. Their reliability, efficiency, and durability make them ideal choices for any industrial laboratory or production floor. [Contact us today](#) to find the right spectrophotometer for your manufacturing process.