

Laundry is one of those chores that seems unending, but I actually enjoy in the monotony of washing and folding. There's something about the clean smell of fresh clothes that lightens my mood. Maybe that's why I linger in the laundry aisle of the supermarket pondering detergents every time I shop. Between the variety of scents and the eye-catching [visual appeal of the packaging](#), I'm always open to new options.

But one attribute that often goes unnoticed by consumers is the color of the detergent itself—despite the fact that this single factor might provide the most accurate information about quality and performance. Color analysis of liquid detergents is widely relied upon within the industry to monitor cleaning performance and color stability and to [meet environmental control standards](#). In order to make the most of this information, however, detergent manufacturers must choose the right color measurement instrumentation—and fully understand its capabilities.

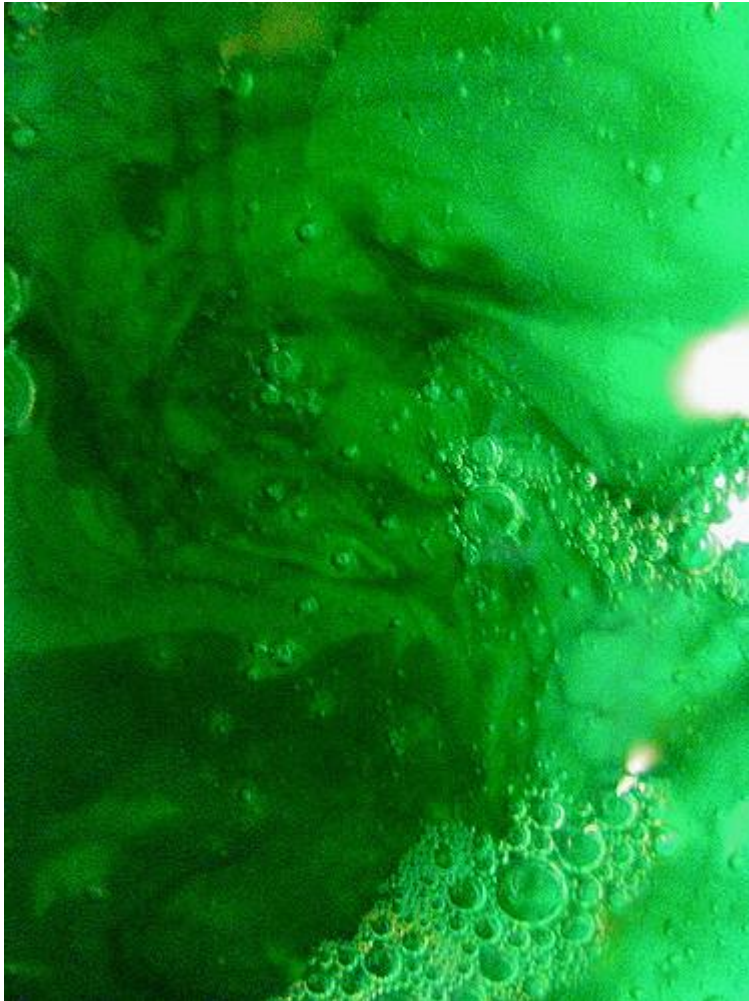


The color of liquid laundry detergent can provide visual appeal to the consumer, but utilizing color analysis instrumentation offers a lot more information on the performance and stability of this product. Image Source: Flickr user Nan Palmero ([CC BY 2.0](#))

Monitoring Color Stability and Change

New liquid detergent options are flooding the market, and many companies have responded by continually updating their product formulations in order to stay competitive. But anytime detergents are reformulated, you run the risk of undesirable color changes. Since studies show that color identity has a major effect on consumer acceptability¹, this leaves many leading detergent manufacturers concerned about maintaining the consistency of their products.

Because so many factors can affect color when you reformulate a liquid detergent, color analysis plus continual monitoring are both necessary to ensure uniformity. Increasing temperatures can accelerate stability testing results, and a recent study found that one detergent's color change from blue to green occurred based on a yellowing substance that was identified through spectrophotometric analysis²—this data was then used to identify and isolate the compound responsible for the observed color changes and extract it from the formulation in order to maintain the color stability of the product.

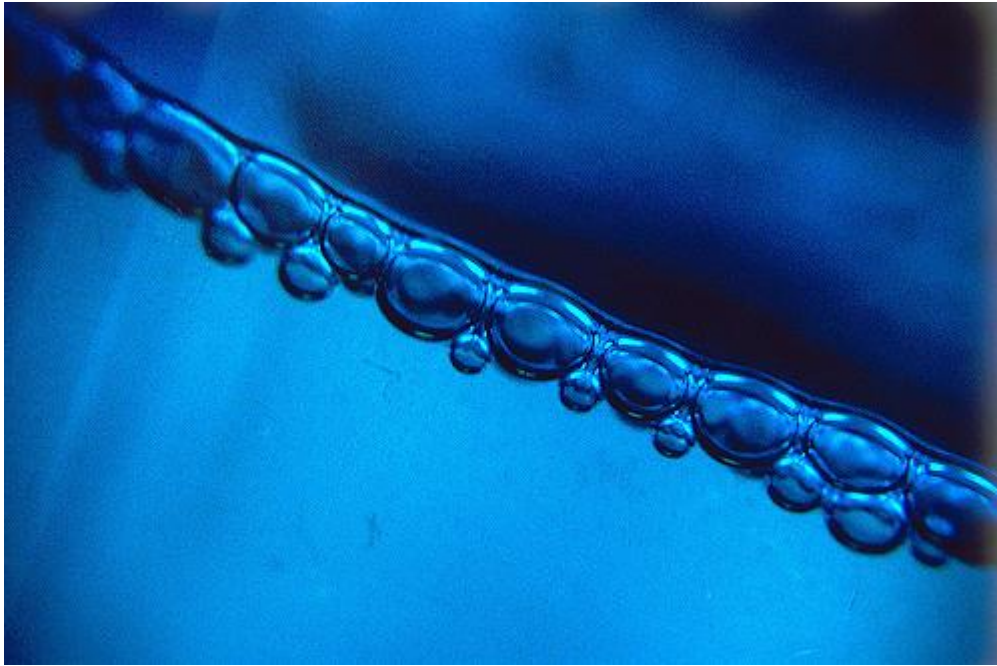


Undesirable color changes in liquid detergents often occur during reformulation, so product engineers utilize color technology to isolate and remove unwanted compounds. Image Source: Flickr user Melanie Tata ([CC BY 2.0](#))

Color Analysis and Performance Testing

Apart from measuring the color of the detergent itself, color analysis also provides reliable information about product performance. [Spectrophotometers help measure the cleaning power of detergents](#) by comparing the reflectance value of soiled samples before and after laundering and quantifying these differences. Instrumental analysis exceeds visual testing capabilities, which means that even the slightest differences in soiling can be quantified—changes too minute for the human eye to catch. This information can then be used to evaluate the effectiveness of your formulation and provide the data necessary to meet A-I-S-E (International Association for Soaps, Detergents, and Maintenance Products) standards³.

UV and fluorescent optical brighteners are also commonly used to increase the performance of liquid detergents, but these additives can interfere with [reflectance data in performance testing](#). Choosing the right color measurement instrumentation helps alleviate the challenges associated with these brightening agents by providing the most accurate data.



Integrated color measurement software offers the technology and data needed for developing consistency and stability in liquid detergent manufacturing. Image Source: Flickr user raindog808 ([CC BY 2.0](#))

New advancements in color measurement technology now include [integrated software packages](#) as well, which take performance data and correlate this information with detergent compounds to help you develop consistent, repeatable formulations.

When it comes to color measurement systems, HunterLab is a leading name in liquid detergent analysis. We offer a variety of products specifically designed to accommodate the unique needs of detergent manufacturing and strive to help you maintain a competitive edge. With over sixty years of experience, we've worked with industry leaders to achieve performance and appearance consistency via highly advanced and easy-to-use instrumentation, and our staff offers the support you need to make the most of your color measurement tools. To learn more about the options available for color analysis of liquid detergents, [contact HunterLab today](#).

1. "Consumer Acceptance Testing",
2016, <https://sensory.byu.edu/Clients/ConsumerAcceptanceTesting>
2. "Investigation of Color Instability in a Liquid Laundry Detergent", September
2014, <http://link.springer.com/article/10.1007/s11743-013-1536-3>
3. "Detergent Test Protocol", 2014, <https://www.aise.eu/our-activities/standards-and-industry-guidelines/detergent-test-protocol.aspx>