In the pharmaceutical industry today, testing the color and haze of a liquid medication is one of the final steps in the manufacturing process. However, in the rush to minimize the number of steps it takes to get a product to market or keep costs down overall, it can be tempting to forego haze testing as a standard part of quality control protocols. After all, analyzing haze has historically required spectrophotometric testing separate from color analysis, which ultimately means an additional investment of valuable time and money. And considering the unprecedented resources that pharmaceutical companies are already spending on research and development efforts, adding another step to the quality control process may seem unnecessarily inefficient.

But haze plays a critical role in shaping consumer perception of liquid pharmaceutical products and eliminating haze testing can compromise product appeal, patient adherence, and patient safety. As such, it is not only wise to measure haze, it may even be critical. And today, it's easier than ever before, thanks to state-of-the-art technology that ensures you can easily and economically incorporate haze measurement as a standard part of the quality control process.

## Cost Efficiency Concerns for Pharmaceutical Companies

The pharmaceutical drug pipeline is longer than ever before. It can take years to go from the initial drug discovery process in the lab to the day the patient finally picks up the medication at their local pharmacy. And for pharmaceutical companies, every one of the hours in between counts. In 2015, pharmaceutical companies spent a total of $141 billion on R&D—up from $108 billion in 2006—and that number is only projected to rise in the future, with experts estimating a total global investment level of $161 billion by 2020.[1] Spending on R&D is essential for staying competitive in today's crowded market, so pharmaceutical companies are constantly looking for other ways to cut costs. From research to development to manufacturing, every test requires both time and manpower, which ultimately means greater investment in the final product.

In today's pharmaceutical industry, the pressure to cut costs is especially high given the growing public concern about high pharmaceutical drug costs. [2] Pharmaceutical companies confront the dual challenge of making their products affordable for patients while also recouping costs and justifying costs to investors or shareholders. This leaves no room for inefficiency at any point in the research, development, or manufacturing process. Even small efficiency improvements—like using a single spectrophotometer to measure both color and haze or eliminating the need for separate measurement steps—can ultimately have significant financial implications in a world where cost efficiency rules supreme.

## The Importance of Preserving Product Quality for Consumers

At the same time as pharmaceutical companies face these financial challenges, the imperative to maintain the quality of the final product remains. If the final product is not up to the standards of the patient, no amount of previous R&D investment will ultimately be able to save it from failure in a market where pharmaceutical options abound and a consumer may be able to easily opt for an alternative from a competing firm. Thanks to a growing body of research, pharmaceutical companies are now understanding that appearance is one of the most critical factors influencing consumer attitudes and behavior, which means it must be taken into account to set a medication up for success.

Indeed, when it comes to consumer perception of liquid pharmaceutical quality, customers actually care a lot about how the final product looks.[3] Regardless of how well-researched a drug is and which regulatory hoops the company has jumped through along the way, consumers want to be able to confidently distinguish between medications by color, take a medication with appealing physical attributes, and expect consistency of appearance each time they take it. Therefore, if pharmaceutical companies are to win the loyalty of the consumers who purchase their liquid medications—which is ultimately essential for recouping those high R&D cost—neither color measurement nor a haze measurement can be skipped before the product reaches the consumer.

Of course, the importance of haze goes beyond its effect on consumer perception—it can actually indicate compromised medication. Routine haze measurement as part of the standard quality control process is

therefore essential to identifying contamination, improper formulation, and incorrect processing as early as possible to prevent harm to patients.

## The Solution: A Single Measurement

Taking into account the realities of the modern pharmaceutical industry, it not feasible for a company to forego testing for either color or haze, even if eliminating a haze test might initially seem like a good way to increase cost efficiency in the face of growing investment requirements over the course of the drug development pipeline. In fact, neither one can be overlooked by companies that are truly dedicated to offering their customers the best quality pharmaceuticals at affordable prices. In the past, that meant that pharmaceutical companies had to swallow the cost of using two different spectrophotometers for liquid pharmaceutical drug appearance measurement: the first to measure color, and the second to measure haze. Even when a single instrument was used to measure both, two separate measurements were required, adding time and labor to the quality control process.

Today, that is changing thanks to the introduction of HunterLab's Vista, a transmission color spectrophotometer designed to measure color and haze in a single measurement and at an affordable price. The first of its kind, this revolutionary instrument is ideally suited to meeting the financial challenges that pharmaceutical companies face in a cost-driven industry. With a plethora of user-friendly features—such as one-touch operation, adjustable sample holders that can accommodate a wide range of sample container shapes and sizes, a spill-proof sample compartment, and wireless connectivity—the Vista simplifies data collection and analysis to eliminate time and labor waste, minimize risk of user error, and provide accurate and reliable color data. In doing so, the Vista facilitates improved efficiency of product development and manufacture, getting the product into the hands of patients more quickly and economically.

However, the Vista is not only about efficiency, it also about excellence. This versatile technology allows you to optimize pharmaceutical quality by giving you unprecedented insight into color and haze behavior and providing you with the data you need to refine manufacturing practices if necessary. Indeed, the Vista was designed specifically with the needs of the pharmaceutical industry in mind; the onboard software, EasyMatch QC Essentials, comes with a comprehensive range of color scales and indices, including global industry scales. This supports not only your ability to consistently create medications that look the way you want to optimize visual appeal, it also helps ensure safety and promote patient adherence.

Full article with photos available here:

https://www.hunterlab.com/blog/color-pharmaceuticals/new-technology-improves-efficiency-of-color-and-haze-measurement-in-liquid-pharmaceuticals-2/