Qalitex Advises on Photostability Gaps in Cosmetics with Botanical Actives

IRVINE, CA, UNITED STATES, June 25, 2025 /EINPresswire.com/ -- Qalitex Laboratories, a scientific testing and product validation service provider, has issued an advisory addressing the overlooked role of photostability in cosmetic shelf-life claims—particularly for formulations that include botanical actives. According to Qalitex, failure to assess how products respond to light exposure can lead to degradation, color changes, loss of potency, or reduced microbial protection over time.

> Plant-based isn't enough if the product can't hold up to light. Stability means testing beyond the lab—where your customers actually use it."
>
> *Nour Abochama, Vice President for Operations at Qalitex*

The issue is especially relevant for personal care products marketed as "natural," "clean," or "plant-based," which frequently include sensitive botanical extracts, oils, and tinctures that may degrade when exposed to UV or visible light.

Botanical Ingredients and Light Sensitivity: A Persistent Stability Challenge

Botanical actives—ranging from green tea extract and chamomile to vitamin C derivatives and essential oils—are frequently incorporated into cosmetic formulations for their antioxidant, anti-inflammatory, or soothing effects. However, many of these plant-based ingredients are inherently unstable when exposed to light, particularly ultraviolet (UV) radiation.

Photodegradation can lead to chemical breakdown, discoloration, off-odor development, and in some cases, the formation of new byproducts that alter product performance. Unlike oxidative degradation, which is more commonly accounted for during stability studies, photodegradation is often not tested explicitly unless required for a specific market registration.

"Many brands invest heavily in ingredient sourcing and performance claims, but overlook how those same ingredients behave under normal light exposure during distribution and use," said Nour Abochama, Vice President for Operations at Qalitex. "Photostability isn't optional for botanical-rich cosmetics—it's essential."

Real-World Exposure Often Exceeds Testing Conditions

Cosmetic products frequently encounter varying levels of light exposure throughout their lifecycle—from warehouse lighting and storefront displays to bathroom countertops and user handling. Even when stored in boxes, tubes, or jars, ambient light can penetrate packaging over time or during periods when the product is opened and closed repeatedly.

Qalitex notes that many routine stability protocols test under controlled humidity and temperature conditions but do not include dedicated photostability assessments. As a result, some products may pass standard shelf-life evaluations but still degrade in appearance or function when exposed to light in real-world settings.

Clear or translucent packaging increases the risk, but even opaque containers can permit some light exposure depending on material composition, thickness, and usage patterns.

Color, Texture, and Sensory Changes as Early Warning Signs

In the absence of dedicated photostability data, brands often first learn of degradation through customer complaints related to visible product changes. These may include fading or discoloration of gels, creams, or serums; separation or clumping in emulsions; or changes in fragrance profiles.

Such shifts not only impact consumer perception but may also signal reduced efficacy of key ingredients, particularly antioxidants and natural preservatives, which are highly light-sensitive.

In some cases, photodegradation may weaken a product's antimicrobial system, increasing the risk of contamination, especially in water-based formulations stored in warm or humid conditions.

Regulatory and Retailer Expectations on Shelf-Life Validity

While photostability testing is not a universal regulatory requirement for all cosmetics, Qalitex emphasizes that brands are still responsible for substantiating their labeled shelf life under expected conditions of use. This includes accounting for typical consumer behavior, packaging limitations, and storage environments.

If a product is marketed with visible packaging or botanical claims, regulators or retail partners may request documentation verifying that those ingredients remain stable and effective over the product's intended lifespan.

Some international markets—particularly those following European Union guidelines—are more likely to request photostability data as part of a cosmetic product safety report. Retailers may also flag SKUs with a history of visual degradation for additional scrutiny or delisting.

Photostability Testing: Key Components and Best Practices

Photostability testing typically involves exposing a product to a defined spectrum and intensity of light—such as artificial sunlight or fluorescent lighting—and then analyzing it for physical, chemical, and microbial changes. This may include:

Visual inspection for color or texture changes
Assay of active ingredient concentrations
pH and viscosity measurements
Microbial efficacy evaluations
Organoleptic assessments (fragrance, feel, consistency)

Testing can be conducted on both finished product and packaging combinations to assess how well container materials protect the formulation. In some cases, formulations may also be tested separately to isolate ingredient-specific degradation trends.

Qalitex recommends conducting photostability studies in parallel with standard accelerated and real-time stability protocols, especially for products marketed with natural or light-sensitive actives.

Packaging Claims Must Be Substantiated Scientifically
Claims about light-protective packaging—such as “UV-resistant,” “light-blocking,” or “opaque design”—must also be supported by data. Qalitex advises brands to verify packaging barrier properties using appropriate analytical methods and to include these findings in stability documentation.

Even with protective packaging, product inserts or usage instructions should address appropriate storage conditions, including recommendations to avoid direct sunlight or heat sources where applicable.

For brands sold through online channels, where packaging may not be examined until after delivery, the risk of prolonged light exposure during fulfillment or delivery adds another layer of complexity.

Private Label Risks and Documentation Gaps
Private-label brands that source finished goods from contract manufacturers may lack visibility into the photostability of their product lines. Qalitex advises that these companies request detailed documentation, including any light exposure testing that supports the shelf-life or performance claims of botanical-rich SKUs.

Without this data, brands may be at a disadvantage during regulatory inspections, retailer audits, or quality investigations—particularly if consumer reports suggest degradation tied to storage or packaging limitations.

Recommendations for Minimizing Photodegradation Risk

Qalitex outlines several best practices to help cosmetic brands proactively address photostability concerns:

Identify and assess light-sensitive ingredients early in formulation development
Select packaging that has verified light-blocking properties and test its effectiveness
Conduct photostability testing alongside routine stability studies for at-risk formulations
Document all changes in product performance, appearance, and function post-exposure
Provide usage guidance to consumers on optimal storage practices

“Photostability testing gives brands a clearer picture of how their product truly performs over time—not just in ideal lab settings, but in real-world conditions,” Abochama added.

Qalitex’s Ongoing Commitment to Cosmetic Product Integrity
As part of its broader stability testing portfolio, Qalitex offers photostability assessments tailored to cosmetic formulations, with particular focus on plant-based actives, clean beauty claims, and emerging preservation systems.

Qalitex remains focused on helping personal care brands develop scientifically supported shelf-life claims and reduce quality risks associated with overlooked degradation pathways, including those triggered by light exposure.

With this latest advisory, Qalitex calls on the cosmetics industry to strengthen its photostability validation practices—ensuring that product quality, appearance, and safety remain consistent from manufacturing to end-user use.

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