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'The Dark Side' Of Green Packaging: Cosmetics Technical Expert On Challenges And Potential Risks

by [Ryan Nelson](#)

Presenting at the Independent Beauty Association's Cosmetic Technical/Regulatory Forum, Product Integrity Laboratory's Howard Baker dug into the less-discussed aspects of green packaging that "could damage your brand's reputation, cause regulatory and legal problems, and severely harm the economics of your business."

The Independent Beauty Association expects corporate sustainability to be a front-and-center issue for the Joe Biden administration in the United States.

"I think we're finally going to acknowledge that we have a climate problem, and sustainability feeds into that," IBA president Ken Marenus said in a 4 February interview with HBW Insight.

But sustainability is a broad umbrella term covering myriad factors that dictate a product's environmental and societal impacts.

Marenus reflected, "When you say sustainable, are you talking about the packaging, the packaging materials? Are you talking about recycling? Are you talking about the carbon footprint of the truck that took these things from your warehouse to the store? If you're talking about the product itself, how much energy went into that product, how much water went into that product, how was that energy produced – was it solar, or were they buying energy credits?"

He continued, "Then on the front end, when you start looking at the chemicals and components, how were these produced? Are they safe from a human point of view? From an environmental point of view?"

“Using more recycled or reuse technologies takes some risks, and managing those risks as best you can is crucial.”

At IBA’s virtual Cosmetic Technical/Regulatory Forum, technical consulting expert Howard Baker addressed one piece of the sustainability equation in a 24 February session titled “21st Century Packaging: The Dark Side of Green.”

A cosmetic chemist with more than four decades of experience in the beauty industry, Baker is currently managing member at Landing, NJ-based Product Integrity Laboratory, LLC, which provides product development, quality control/quality assurance, and regulatory compliance services for cosmetics and personal-care companies.

In his presentation, Baker recognized green packaging pressures and aspirations in the cosmetics and personal-care sector as consumers increasingly demand sustainability from the brands they support.

“We’ll no doubt hear about the wonderful aspects of green packaging from the suppliers, from the Internet influencers and the like. But they may not tell you about the potential problems that come along with them,” Baker said.

He went on, “The problems that come up with green packaging could damage your brand’s reputation, cause regulatory and legal problems, and severely harm the economics of your business. It’s a good idea to avoid them. Staying ahead of these problems can strengthen your product position in the marketplace. If you’re developing products that utilize green packaging, you will need to do your homework.”

Baker offered attendees a primer, highlighting a number of green packaging considerations that could be crucial for companies to minimize regulatory, legal, consumer safety and PR risks.

Recyclable

In Baker’s view, promoting recycling is a worthy objective, but it has its pitfalls.

Companies that represent their packaging as recyclable – through the use of symbols or claims on product labeling or other marketing materials – could be in trouble if their packaging is not, in fact, as recyclable as they suggest.

“Most regulations on recycling are local. Municipalities generally handle recycling programs, determining what can and what cannot be recycled. Towns usually don’t do any recycling themselves, but deliver what they collect to companies that sort and begin to process recyclable materials,” Baker explained.

“If your package isn’t recyclable in a broad selection of recycling programs that consumers can easily use, then any claims that it is recyclable would be misleading. And just because materials used in your package are recyclable doesn’t mean that the whole package can be recycled. For example if your package contains high-density polyethylene, a materials that is widely recyclable, but other parts of the package fused to the HDPE are not recyclable, then the whole package likely would be sorted out with recycling waste streams and wind up instead in a landfill,” the consultant said.

He cited pumps as an example of a package component that can be problematic.

Companies also must consider that decorative elements on their packaging – eg, silk screening and hot stamping – can render it unrecyclable.

“This matters because there have been a number of class action lawsuits based on claims like these. Checking your packaging with a local recycling program can tell you whether a recyclable claim is legitimate or not. Your town or county would have resources for this,” Baker said.

Post-Consumer Recycled

Baker also addressed packaging made wholly or partly from post-consumer recycled (PCR) material, an option that can reduce or eliminate petrochemicals use.

“This has been talked about for years but has had a slow start because of a variety of concerns. Leaching of any contaminants, like heavy metals, solvents or plasticizer, into the product formula represents a significant vulnerability. Certification from the supplier based on analytical testing would substantiate that the PCR containing package component is free of these contaminants,” Baker said.

“Blending of several plastic resins in the recycling process is another possibility that could affect the structure and function of the package,” the consultant noted. “Bottles splitting open in the marketplace could happen, and it doesn’t help your brand’s image.”

Biodegradable

Use of packaging that decomposes readily in a landfill or composting facility is another good idea fraught with complexities, Baker said.

“The problem is that biodegradable materials that would replace regular plastics and containers

can be attacked by the ingredients in most cosmetic and personal-care products,” he said. “Water in particular, among the most common ingredients in products we produce, is also a key ingredient in many of the mechanisms in how biodegradable materials biodegrade. Living organisms convert the packaging into ecologically benign byproducts, and living organisms all need water.”

Baker emphasized the importance of compatibility testing to ensure that biodegradable packaging will hold up to the product.

He further pointed out that for biodegradable packaging to work, it must be food for microorganisms.

“This means that testing the preservative system in your product formula becomes even more important. If your product in the biodegradable package won’t pass the standard preservative efficacy tests, you can expect problems down the road. Growth of microorganisms in the package could start the degradation process before the consumer has had time to use the product. It also could lead to microbiological contamination of the product formula that would not have happened in a normal container,” Baker said.

Reusable

Reusable packaging is another approach that is being explored increasingly by beauty and personal-care companies.

Baker noted that in decades past, products such as milk and beer were routinely sold in glass bottles that would be collected and returned to the bottler for cleaning and reuse.

“The world moved away from this because of the economics of the process. Going to a modern implementation of reusable packaging will likely have its own economic challenges.”

Additional transportation, cleaning, sanitization and ongoing safety testing all add costs and pose technical challenges, Baker said.

He noted, “The logistics of collecting your used packaging components from consumers will be there. Inspecting the package components will present another challenge. You will have to set standards for how much damage you are willing to tolerate and then enforce the inspection process. Your vendor who cleans and processes your packages would probably like to tolerate a significant amount of scratches, scuffs and damage to the decoration and the like, so they can maximize the reuse rate, while your marketing people will want the packages to be as close to their original perfection as possible.”

He continued, “The tighter your tolerances, the higher the waste factor. And again,

microbiological testing will be crucial to ensure that your product is free from contamination.”

Additionally, generational changes to label copy and label designs complicate matters, as retired versions of packaging must be removed from the marketplace.

Finally, Baker said the energy consumption associated with reuse processing could be an offsetting factor.

He concluded, “Using more recycled or reuse technologies takes some risks, and managing those risks as best you can is crucial.”