



| Ingredients:       | % WT. |
|--------------------|-------|
| Cetyl alcohol      | .50   |
| Dipropylene glycol | 1.50  |
| Glycerin           | 8.00  |

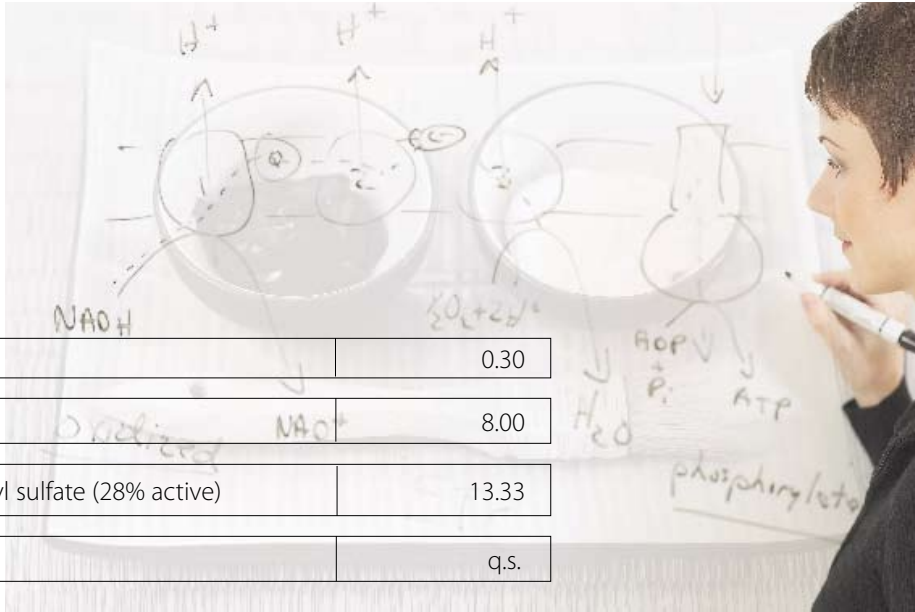
# perfect combinations

The synergy of ingredients in skincare formulations ensures real results.

By J. Elaine Spear

THERE'S NO ONE CURE FOR CANCER, AND NO ONE SOLUTION TO THE WORLD'S PROBLEMS. And tempting though it may be to believe, there's no magic bullet for treating something as complex as skin.

Ingredient superstars do take center stage as skincare technology advances, and rightly so, but it's important to remember what makes professional-level skincare products so valuable: In much the same way that it takes a village to raise a child, product formulation experts note that it's the synergy of ingredients that gets the deed done. "Like the rest of the body, if the skin has only one chemical process prompting it do something, the desired result probably won't occur," says Glen Lockhart, president of BiON Research in San Diego. "The skin needs multiple signals to properly respond. The more signals that go to the fibroblasts to produce precollagen, for instance, the greater the skin's response will be."



|                                      |       |
|--------------------------------------|-------|
| Phenonip                             | 0.30  |
| Glycerin                             | 8.00  |
| Ammonium lauryl sulfate (28% active) | 13.33 |
| Fragrance                            | q.s.  |

### Parts of the Whole

“Although a ‘wonder ingredient’ can influence the buying decisions of estheticians and day spa owners, the hype surrounding a single product ingredient is often the result of marketing,” says Dieter Kuster, Ph.D., founder of CA Botana in San Diego. “Sometimes a popular ingredient may be highlighted in a product formulation because it’s the ‘flavor of the month in cosmetics.” It’s important to remember, though, says Kuster, that it’s the synergy of all the ingredients working together in a formulation that ensures that the product works efficiently and delivers the promised results.

Christian Jurist, M.D., a dermatologist and national education director for Pevonia/Medicalia in Miami, also notes that if a particular ingredient is incorrectly included in a formulation, that ingredient’s effectiveness could be compromised by molecular incompatibilities with other ingredients (e.g., certain chemicals, pH regulators and fillers) present in the same formulation. “But when you use a precise and balanced combination of ingredients, product performance can definitely be enhanced,” he says.

Experts also note that the concentration of each ingredient in a formulation—as well as the combination of ingredients—heavily impacts the result of a particular product. “Rather than placing the focus on one ingredient, it should really be on the specific concentration of a particular ingredient,”

advises Gül Zone, president of DermAware in New Orleans. “When evaluating a formulation, it’s important to look at 1) the ingredient mix; 2) the concentrations of *all* ingredients; and 3) how the delivery system and ingredient combination support the goal or promise of the product.”

“Today, we can encapsulate active ingredients so they’re liberated at a slower pace into the skin layers by carriers (liposomes, nanosomes, etc.), resulting in enhanced skin penetration and a

longer residence time of the active ingredients in the skin,” adds David Kaminsky, vice president of B. Kamins, Chemist, located in Pointe Claire, Quebec. “We can also choose more appropriate vehicles (e.g., water in oil emulsions, oil in water emulsions or anhydrous emulsions as carriers) to target specific skin conditions that require specialized on-site, long-acting treatment molecules.”

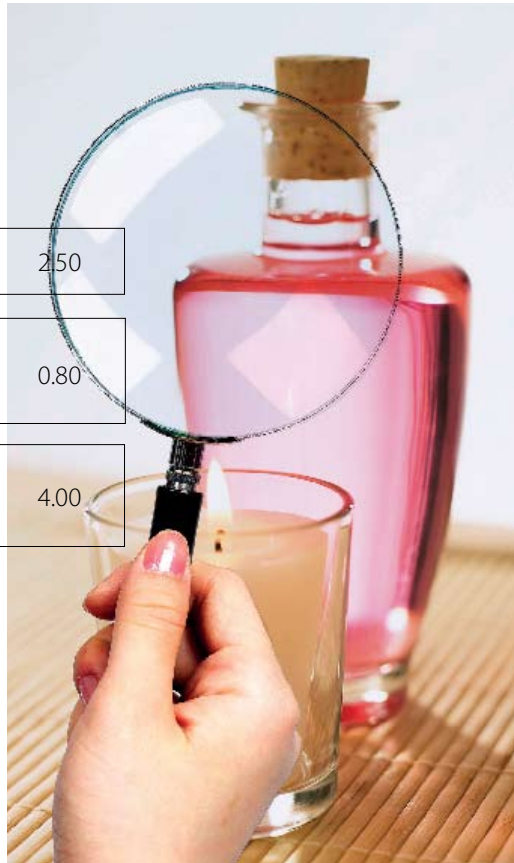
“We can encapsulate active ingredients so they’re liberated at a slower pace.”

### A Systemic Approach

One of the real benefits of a total formulation approach is the ability to affect skin in a systemic way. “Until a few years ago, skincare products were 80% dreams and 20% actual results,” says Kuster. “Today, the reverse is true. This is due, in part, to dramatically changing the way we view the skin’s natural capabilities. Years ago, for instance, we didn’t think that aging or damaged skin was capable of reproducing itself properly. Now we know that if we stimulate and support the renewal process, even sluggish, aging skin is capable of behaving in a much younger way

[Perfect Combinations]

|  |      |
|--|------|
| Propylene glycol                             | 2.50 |
| Solubilizer S12<br>(Nonoxynol-14)            | 0.80 |
| Glucam P-10<br>(PPG-10 methyl glucose ether) | 4.00 |



“From a formulator’s point of view, AHAs and BHAs are still flagship ingredients.”

by laying down collagen faster, as well as in a more uniform manner.”

“I like to compare today’s approach to skincare formulations to a symphony,” adds Pamela Busiek, president and co-founder of CBI Laboratories in Fort Worth, Texas. “The body of work is not due to a single instrument, but to all the instruments performing beautifully *and* working synergistically to create the result. In antiaging formulas, for instance, a single key ingredient can address one specific concern. But with a synergy of ingredients such as peptides, exfoliants, fatty acids, anti-inflammatory agents, polyphenols and other antioxidants, you can address all the concerns of aging skin.”

Alpha hydroxy acids (AHAs) revolutionized the skincare industry in 1990 when Dr. Howard Murad, dermatologist and CEO of Murad Inc., based in Los Angeles, introduced the first esthetic products containing this groundbreaking technology. Hailed as the first cosmeceuticals, AHAs changed the landscape of skin care by allowing estheticians to go from simply cleansing, toning and moisturizing skin to effectively treating unwanted conditions.

“From a formulator’s point of view, AHAs and BHAs (beta hydroxy acids) are still flagship ingredients in traditional skincare products. They can offer so many wonderful benefits to the skin when used correctly, especially when treating acne, aging, sun damage, hyperpigmentation and other conditions,” says Jurist. “Due to its many benefits, glycolic acid, an AHA, is still one of the basic ingredients in many renewing, exfoliating and acne

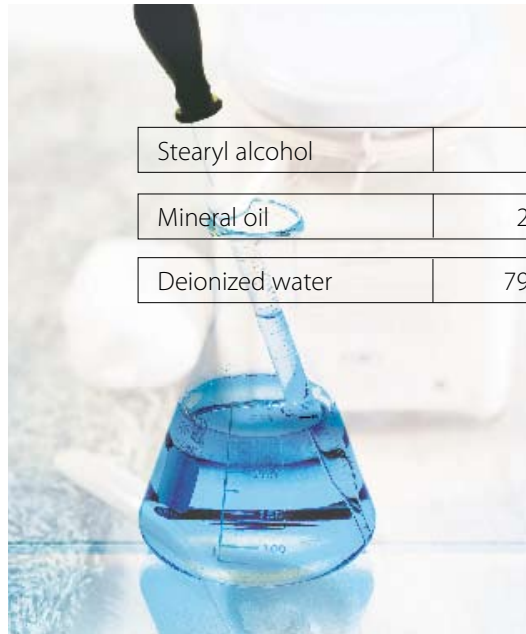
formulations, to name just a few applications. Glycolic acid can also

be combined with other ingredients to enhance its potential and achieve greater results.”

“Most importantly, we now know that it’s the complete formula—and not just the AHAs—that are important, adds Murad. What makes our products more effective are the antioxidants we include in the formulation to protect the skin; the anti-inflammatory ingredients that are present to minimize any chance of setting up a damaging chemical cascade; and the hydrating agents. Often, these hydrating agents are the AHAs themselves, as well as other ingredients that absorb water from the environment or prevent the loss of water in the skin.”

“Another example of how a synergistic approach to formulations improves the efficacy of products is peptides,” adds Busiek. “Peptides have taken the skincare arena by storm, yet when you read the labels of peptide products there are many ingredients—including multiple peptides—that are included to create a synergistic effect. For instance, we know that certain peptides stimulate cell activity by interacting with molecules that signal skin cells to produce more collagen. But recent in vitro studies show that lipo-peptides like palmitoyl oligopeptide, combined with ceramide 2, help attract cells to other sites that need repair and contribute to the reconstruction of the dermis. While the benefits of palmitoyl oligopeptide are undisputed, it’s the addition of ceramide 2 that strengthens and repairs

“To be effective, many active ingredients must be at different pH levels.”



|                 |       |
|-----------------|-------|
| Stearyl alcohol | .50   |
| Mineral oil     | 2.00  |
| Deionized water | 79.50 |

the skin’s barrier while improving cell cohesion, enhancing water retention and reducing skin dryness.”

Sophisticated acne products also rely on a synergistic blend of active ingredients that attack this aggravating skin condition from several different angles. “Research and clinical studies have shown that acne is a result of many things happening simultaneously,” says Lockhart. “Unfortunately, so many technicians focus solely on *P. acnes* bacterium, which is only one contributing factor. A second element is the production of sebum, and a third element involves inflammatory factors, including some interleukins (chemicals the body naturally produces as part of the immune system), namely interleukin-1 and interleukin-6. Their whole function is to inflame the skin. As acne progresses, histamine production also comes into play, and severe itching and irritation promote even more inflammation.

“Salicylic acid is a very popular ingredient for treating acne, and rightly so,” continues Lockhart. “It removes the accumulation of dead skin cells in the follicle and, to a certain degree, is effective in killing *P. acnes*. However, it doesn’t have an anti-inflammatory action, so relying solely on salicylic acid to control acne is, in essence, like throwing water on fire. You may put

out the fire, but you haven’t dealt with what started that fire in the first place. Like most things related to skin, it takes a comprehensive approach to get substantial results.”

It’s important to remember, however, that too much of a good thing can be counterproductive. “Today, there’s a tendency to capture a larger segment of the market with products that have multiple active ingredients in a single formulation,” explains Jan Marini, CEO and president of Jan Marini Skin Research based in San Jose, California. “While using one, rather than several products to achieve multiple results might sound viable, it isn’t always so. To be effective, many active ingredients must be at different pH levels; the pH level for glycolic acid, for instance, isn’t compatible with that of vitamin C. Besides the pH factor, different product ingredients within the same formulation may require different delivery and stability systems. This is why it may sometimes be better to layer two or three products on the skin to achieve multiple results, rather than one product with many actions.”

“A multipronged approach should be taken in all skincare product formulations, including antiaging products,” says Bella Schneider, founder and CEO of 5 StarFormulators in Palo Alto, California. “The most

“With so many  
amazing  
botanicals on  
the market,  
why would we  
choose to use  
just one in a  
formulation?”

effective antiaging products take a comprehensive approach to treating the skin with exfoliants, antioxidants, brighteners, ingredients to encourage cell turnover and sun protection products. Within these categories, skilled formulators also use groups of products to produce superior results. We use multiple antioxidants, for instance, because we now know that different antioxidants function in different ways. We use a group of exfoliants, such as glycolic or citric acid in conjunction with hyaluronic acid, to ensure proper sloughing and hydration. We include up to six peptides to treat expression lines and help firm the skin. And with so many amazing botanicals on the market, why would we choose to use just one in a formulation? Life is complicated, and so is skin care. It has to be, or it wouldn't produce the stellar results that have become standard for our industry.” ●

**J. Elaine Spear** is *DAYS*PA's editor at large and head writer for Writers On the Edge, an agency specializing in custom magazines and newsletters for day spas. She's based in Santa Fe, NM, and can be contacted at [fabfashion@aol.com](mailto:fabfashion@aol.com).