

DuPont™ Glypure®

COSMETIC-GRADE GLYCOLIC ACID FOR HAIR CARE



For years, glycolic acid has been among the most popular actives in anti-aging formulations and has gained strong consumer recognition as an ingredient in many skin care products. Now, research has shown that glycolic acid also offers many benefits for hair care products.

Glycolic acid delivers positive effects by penetrating the skin effectively and stimulating cellular activity. As the simplest alpha hydroxy acid (AHA) and smallest of the fruit acids, glycolic acid also has an excellent profile for penetrating the cuticle layer of the hair shaft. This enables the glycolic acid to attach itself to the keratin, which can help make hair stronger and smoother.

A series of experiments was conducted by DuPont researchers and researchers at the Textile Research Institute (TRI) in Princeton, N.J. The experiments focused on manageability, strengthening, protection and conditioning because consumer research shows these are key attributes for hair care products.

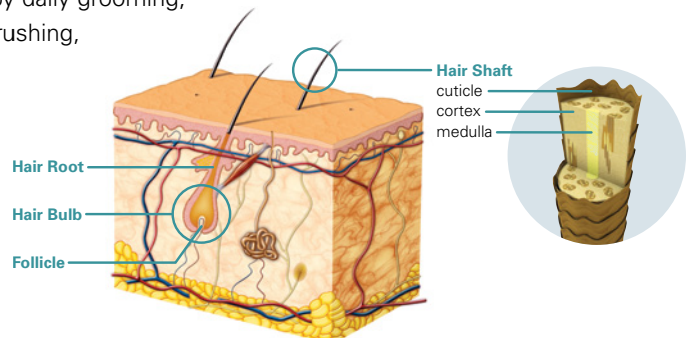
The results confirmed that when DuPont™ Glypure® was added to hair care products, it had significant, positive effects—DuPont™ Glypure® enhances the protection and manageability of both healthy and bleached hair by conditioning the cuticle and moisturizing and strengthening the cortex.

When it comes to cosmetic-grade glycolic acid, DuPont™ Glypure® sets the standard:

- **Exceptional purity levels for personal care products**
- **Clear, colorless appearance**
- **Reliable, consistent supply from a dedicated production line at one U.S.-based facility**
- **Odorless**
- **Compatibility with other compounds and ingredients**
- **Biodegradability**

How Glycolic Acid Works in the Hair

Hair is a complex structure that can be broken down into four parts: the follicle, hair bulb, hair root and hair shaft. The hair shaft consists of the cuticle, cortex and medulla. The cuticle layer is responsible for visual attributes of hair such as shine and smoothness. It is also responsible for the friction effect of hair, which determines manageability (i.e., how easy it is to comb or brush hair). The cuticle layer can be damaged by daily grooming, such as combing and brushing, as well as by chemical treatments, such as bleaching. The cortex contains pigment and is responsible for structural integrity, strength, swelling and stretching of the hair.



The miracles of science™



Multiple Benefits for Hair Care Products

Adding DuPont™ Glypure® to hair care formulations enables these products to provide important benefits that deliver the attributes consumers desire:

- Helps hair hold moisture significantly better. Hair treated with DuPont™ Glypure® is able to hold moisture at significantly higher temperatures or longer times, making it ideal for hair that is styled with high-wattage blow driers, hot curlers, curling irons and straightening irons—without concerns about damaging the hair.
- Strengthens the hair, making it less prone to breakage. DuPont™ Glypure® has a positive effect on tenacity at break and toughness, making the hair stronger and more resistant to breakage.
- Makes hair more manageable, easier to style. DuPont™ Glypure® provides hair with superior lubricity, which results in less friction and entanglement during combing and brushing.
- Moisturizes and exfoliates the scalp, resulting in less flaking to give the scalp a healthy look and feel. With a long-proven reputation as an effective exfoliant and moisturizer for the skin, DuPont™ Glypure® provides this important added benefit to the scalp when used in hair care products.

¹All grades are also available with a pass-through license from TriStrata, a wholly owned subsidiary of NeoStrata Company, Inc., and are designated DuPont™ Glypure® L.

*Stock supply only.

DuPont™ Glypure® Is Available in Three Grades¹

DuPont™ Glypure® 70 is a purified liquid form of glycolic acid. It is an aqueous solution at 70% concentration.

DuPont™ Glypure® 99 is a highly purified crystalline form of glycolic acid for applications where avoidance of water is necessary. It is constituted as small, prismatic crystals of 99+% purity.

Pre-neutralized DuPont™ Glypure® is an aqueous solution neutralized with ammonium hydroxide. It is available in a variety of pH levels—2.25, 3.25, 3.8*, 4.0, 4.4*—as well as custom pH.

No License Required

For most of the global market, you do not need to worry about managing a licensed product. You have the freedom to use DuPont™ Glypure® in new products to meet increasing consumer demand without the added concern or expense of a licensing agreement. And, if you want to sell products in Canada and Australia where a license is still required—or nail care products in Europe—you can use DuPont™ Glypure® L, which offers all the benefits of our ultra pure form of glycolic acid plus the convenience of a pass-through license.

Unmatched Services

In addition to high quality and reliable supply, you have the added advantage of access to a dedicated, professional staff of technical service representatives, formulating chemists and analytical chemists for help with technical questions, assistance with new product development and advice to help ensure the success of products made with DuPont™ Glypure®—all at no additional charge.

We also offer a wide variety of starting point formulations using DuPont™ Glypure® for hair care products. These formulations are for products ranging from conditioning treatments to all-in-one hair and body wash for men.



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www.glypurecosmetics.dupont.com

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