Your Choice for High Purity Glycolic Acid

Glypure™ Cosmetic-Grade Glycolic Acid in Anti-Aging Skin Care Formulations

In skin care formulations, active ingredients may come and go; but over the years, few, if any, have been as beneficial for consumers as glycolic acid—proven effective for use in creams, toners, cleansers, moisturizers, peels, lotions, and other products for more than 20 years. And, when it comes to high quality sources of glycolic acid, Glypure™ glycolic acid delivers a host of valuable advantages, including outstanding product consistency, high purity, exceptional reliability of supply, purely U.S. sourcing, and expert Chemours technical support.
**Glycolic Acid: One product, multiple benefits**

Enhancing exfoliation, alleviating dryness, improving cell differentiation, stimulating collagen production, evening out pigment, minimizing fine lines and wrinkles, mediating sun damage, increasing elasticity, improving skin thickness, creating a smooth and radiant appearance—no other active can deliver the diversity of beautifying, anti-aging benefits that glycolic acid has provided to consumers for decades.

For example, in a double-blind vehicle control study of photo-aged skin treated with 50% glycolic acid, results showed a decrease in rough texture and fine wrinkling, fewer solar keratoses, and a slight lightening of solar lentigines (age spots). In a statistically designed study of 65 patients treated with 1.5% glycolic acid for six months, skin thickness increased 27% over control (p<0.01), even greater than the effect induced by 0.01% estradiol applied similarly. And, a clinical study confirms that glycolic acid treatment increases type 1 collagen mRNA and hyaluronic acid content of human skin, after a treatment regimen consisting of 20% glycolic acid lotion applied twice daily for three months.

In addition, glycolic acid has also been shown to improve the penetration and enhance the activity of other therapeutic agents, making them even more effective for the consumer. For example, a study has shown that glycolic acid included in benzoyl peroxide-based acne gels can generate improved results. Likewise, glycolic acid can improve the results provided by hydroquinone and kojic acid in the treatment of melasma, the dark skin lesions resulting from overexposure to sunlight.

**Glycolic Acid: Fastest absorption**

Of all skin care actives, the glycolic acid molecule is the smallest; at just 76 g/mol, it’s even 15% smaller than lactic acid, and about one-quarter the size of the big molecules like retinoids and peptides that can be frustratingly slow to penetrate the skin. Built into your products, glycolic acid can help you deliver the outstanding ease and speed of absorption that your customers expect.

**Glycolic Acid: No color, no smell**

While the technical grade for glycolic acid has a yellowish tint, high purity glycolic acid is clear. So, you won’t have to override the yellowish tint found in lower quality lactic acid and retinoids that can impart an off-color, impure appearance to your products. And, when formulating with glycolic acid, you won’t have to incur extra time and cost to mask unpleasant odors that can sour carefully selected fragrances, as can happen when using a lower quality lactic acid.

**Glycolic Acid: Safe, gentle, stable**

When properly formulated, glycolic acid has a low incidence of skin irritation and causes less of a sting than the burning commonly associated with lactic acid. Further, glycolic acid is long lasting, with outstanding UV and product stability, avoiding the challenges often experienced with peptides.

**Glycolic Acid: Excellent value**

With so many benefits at a highly competitive price point, glycolic acid can be a superior value in any skin care formulation. In addition, glycolic acid no longer has associated licensing fees in most regions, and the few remaining will expire in 2015, making the value proposition of glycolic acid even more compelling than ever before.

Glypure™ glycolic acid is the industry leader and ideal choice for optimum performance in nearly any skin care formulation. Here’s why:

*Age spots,* including multiple lesions of seborrheic keratoses and lentigines, in a 64-year-old man, before (left) and after (right) topical 10% glycolic acid and 2% hydroquinone cream twice daily for 9 months.

"Alpha-hydroxyacids and carboxylic acids"
Ruey J. Yu, PhD, OMD
Eugene J. Van Scott, MD

Forearms of a 65-year-old woman after 6 months’ twice-daily applications of vehicle control to the right forearm (A) and 20% glycolic acid lotion to the left forearm (B). Abatement in dyspigmentation of the left forearm is evident from fewer, less distinct solar lentigines.

"Alpha-Hydroxyacids in the Treatment of Signs of Photoaging"
Eugene J. Van Scott, MD
Cherie M. Ditre, MD
Ruey J. Yu, PhD, OMD
Glypure™ glycolic acid: Unmatched product consistency and reliability

Chemours is the only glycolic acid supplier to manufacture the product completely in the United States, and the only one to use a continuous process for optimum product uniformity, avoiding the batch-to-batch inconsistencies common to other sources. In fact, the Chemours manufacturing facility in Belle, West Virginia, is ISO 9001:2008 certified and produces glycolic acid continuously, 24 hours a day, seven days a week. Continuous manufacture using dedicated equipment also helps avoid the contamination issues that can plague batch processes. In addition, the combination of U.S. sourcing and continuous production helps ensure you consistent reliability of supply, unmatched by other glycolic acid suppliers.

Glypure™ glycolic acid: Outstanding product purity

In recent tests, Glypure™ glycolic acid samples had no detectable levels of chlorides, whereas samples from other suppliers demonstrated levels as high as 713 ppm. In addition, and regardless of claims to the contrary, nearly all glycolic acid has some detectable levels of formaldehyde. Chemours samples in all grades demonstrated levels in single-digit parts per million—in some cases, even lower than the levels found in samples of glycolic acid that claimed to be “formaldehyde-free.” Several of the samples also had measurable quantities of halogenated organic compounds, and some had more than 100 ppm of dichloroacetic acid (DCA), listed as a California Prop 65 carcinogen and male reproductive toxin, and IARC 2B, listed as a potential human carcinogen. Chemours samples had no detectable levels of either of these contaminants.

Face of a 24-year-old woman with acne at (left) baseline and (right) after three peels administered during a 2-month period. Peels consisted of 20% mandelic acid plus 10% citric acid booster peels, followed by application of glycolic acid peel solutions of 20%, 50%, and 70%, respectively.

“Clinical and cosmeceutical uses of hydroxyacids”
Barbara A. Green, RPh, MS
Ruey J. Yu, PhD, OMD
Eugene J. Van Scott, MD

Glypure™ glycolic acid: Industry-leading technical support at your service

Chemours customers have access to a highly experienced U.S.-based team of technical service representatives, R&D technicians, formulating chemists, analytical chemists, and other glycolic acid professionals. They can assist you with new product development and formulation optimization, helping you maximize product effectiveness and reduce your time to market, as well as help you troubleshoot and optimize success at any stage of production.

To further help you succeed, Chemours offers a wide variety of personal care starting point formulations using Glypure™ glycolic acid. These include anti-aging serum, night cream, day cream with sunscreen, anti-acne cream, peel-off mask, skin lightening cream, and dozens more. We are constantly adding to this list to meet continuously changing needs in an innovative industry, and we can work with you to create a custom starting-point formulation to help jumpstart your product development efforts.

Glypure™ glycolic acid: Three different grades to best meet your needs

Glypure™ glycolic acid is available in three grades to help meet any formulating and production need:

- Glypure™ 70 glycolic acid is a purified liquid suitable for use in most high quality creams, lotions, and other common skin care applications.
- Glypure™ 99 glycolic acid is a highly purified crystalline powder of 99+% purity. It is perfect for applications like powders and cleansers or in formulations that are anhydrous in nature.
- Pre-neutralized Glypure™ glycolic acid is an aqueous solution pre-neutralized to your specifications, helping you avoid the use of ammonium hydroxide or sodium hydroxide in-house. Several pH levels are available from 2.25 to 4.4, and custom pH varieties are also possible.

Build in quality to your next skin care formulation—choose high purity Glypure™ glycolic acid

With the skin care products arena so competitive, it makes sense to use one of the most proven, most effective, most versatile anti-aging actives—glycolic acid. And, it makes sense to specify the purest, most consistent, most reliable, most supported glycolic acid available. Glypure™ glycolic acid is the industry leader for a reason. Contact us today to find out more about putting high purity Glypure™ glycolic acid to work in your formulation.
**Anti-Aging/Face Care**
- Professional Anti-Aging Serum
- Day Cream with Matrixyl
- Anti-Aging Serum
- Peel Off Facial Mask
- Anti-Acne Cream with AHA and BHA
- Day Cream with Sunscreen
- Face Cream with ProVitamin A
- Night Cream
- Rinse Off Facial Mask
- Anti-Acne Toner
- Exfoliating Face Scrub
- Revitalizing Peel (30%)
- 3 in 1 Cream Gel

**Skin Care (Miscellaneous)**
- Self-Tanning Remover
- Stretch Mark Cream
- Cuticle Cream

**Skin Lightening**
- Hydroquinone Skin Lightening Cream
- Skin Brightening Gel with Kojic Acid

**Men’s Care**
- Men’s Daily Moisturizer with Sunscreen
- Men’s Foot Cream
- Men’s All in One Hair and Body Wash
- Men’s Facial Toner (Wipes)
- Razor Bump Treatment

**Hair Care**
- Clarifying Shampoo
- Shampoo and Scalp Treatment
- Leave-In Conditioner
- Conditioner
- Conditioning Treatment

**References**