

## TECHNICAL DATA SHEET

**Product Name:** Glycolic Acid 70% Solution

**INCI Name:** Glycolic acid

**CAS:** 79-14-1

**Chemical Classification:** Carboxylic acid/derivative

**Functional Category:** pH regulator/buffering agent; exfoliant, peeling agent

**IUPAC Name:** 2-hydroxyacetic acid

**Description:** Glycolic acid is an alpha hydroxy acid (AHA) used in skincare for its exfoliating properties. It is extracted from sugar beets, cane, or grapes, and is also synthetically produced. It helps remove dead cells from the skin surface, leaving it smooth and refreshed. Suitable for treating skin imperfections, hyperpigmentation, and signs of aging, glycolic acid reduces the appearance of wrinkles, improves skin texture, and evens out skin tone. It also helps in reducing clogged pores, contributing to a clearer complexion. It is applied in low concentrations for daily care, while higher concentrations are used in controlled treatments. It is a colorless to slightly yellowish liquid with a characteristic odor, easily soluble in water. It is a non-toxic substance. Concentration: 70% glycolic acid (30% water). pH value 0.5-2.0.

**Mechanism of Action:** Glycolic acid weakens the bonds between dead cells on the skin surface, allowing for easier removal. It breaks down desmosomes, the protein bonds that hold corneocytes (dead skin cells) together, facilitating their detachment. Through the exfoliation process, it reduces the thickness of the stratum corneum (outer skin layer), leading to smoother skin and a more even tone. Besides removing surface cells, glycolic acid stimulates the regeneration of new, healthy skin cells. It has been proven to stimulate fibroblasts, the cells that produce collagen and elastin in the skin. When it penetrates deeper skin layers, it encourages fibroblasts to increase collagen synthesis, contributing to firmness, elasticity, and wrinkle reduction. Additionally, glycolic acid has anti-inflammatory properties, meaning it can reduce inflammatory processes in the skin. This is beneficial for individuals with irritations or conditions like acne, as it soothes redness and swelling. Glycolic acid also acts as an antioxidant, helping to neutralize free radicals that damage skin cells. This protection against oxidative stress slows aging.

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processes and shields the skin from damage caused by UV rays and pollution.

### Benefits:

- Reduces the appearance of fine lines and expression lines, uneven pigmentation, age spots
- Reduces enlarged pores
- Removes the surface layer of dead skin cells (corneocytes)
- Promotes skin cell renewal
- Increases skin hydration, improving flexibility of the upper skin layer
- Using glycolic acid-based cosmetic products makes the skin smooth and brighter

**Use in Cosmetic Products:** For chemical peels, glycolic acid is used in high concentrations (30-70%) for short-term treatments exclusively under the supervision of a dermatologist. It is commonly used in cosmetic products for daily skin care in concentrations of 5-10%. European regulations allow a maximum of 10% AHA for personal use, which is also required by the FDA (Food and Drug Administration). Glycolic acid in the form of lotions, creams, or gels has proven very successful in treating pigmentation lesions on the skin (melasma, solar lentigo, and post-inflammatory hyperpigmentation), as well as in treating photo-aged skin. The depigmenting mechanism is explained by epidermal remodeling and accelerated desquamation of surface skin layers, as well as direct inhibition of melanin formation in melanocytes.

### Frequently Asked Questions:

**Is it safe to use glycolic acid daily?** Not initially. Glycolic acid can irritate your skin, and it may take time for your skin to get used to it. Start by applying it three times a week. If your skin is not red or irritated, use it four times the next week. Gradually increase the number of days you use glycolic acid if your skin tolerates it well. If your skin shows any signs of irritation, take a break and stop using the acid until the redness and irritation subside.

**Can glycolic acid remove scars?** No. Despite marketing claims, there is no scientific evidence to support the use of glycolic acid for scar removal. Glycolic acid can help reduce the appearance of scars but will not make them disappear.

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**What should be known before using glycolic acid?** Glycolic acid can make your skin more sensitive to the sun. It is essential to wear sunscreen outdoors when using glycolic acid. Do not use topical retinoids and glycolic acid simultaneously. Avoid using other products that cause skin peeling while using glycolic acid. If you are currently visiting a dermatologist, talk to them before using any product containing glycolic acid.

**How Chemical Peeling is Performed:** For chemical peeling, glycolic acid is used in high concentrations (30-70%) for short-term treatments exclusively under the supervision of a dermatologist. Chemical peels are performed as part of anti-aging treatments, additional acne treatment, rosacea, and hyperpigmentation on the skin. Peels on the face can cause strong skin irritations (burning, stinging, burns, swelling, erythema, rash, itching, depigmentation) if not performed according to recommendations and by professional personnel. In individuals with sensitive skin, burning, itching, and redness can occur as side effects immediately after product application. Generally, when used at concentrations up to 10% in final products with pH  $\geq 3.5$ , glycolic and lactic acids, as well as their salts and simple esters, are considered safe cosmetic active substances. For professional use, it is safe at concentrations  $\leq 30\%$  with product pH values  $\geq 3$  during short-term interventions carried out by professionals, after which it is rinsed off the skin (recommendations of the Cosmetic Ingredient Review - CIR). Due to their exfoliating effect, sensitivity to sun exposure may occur, so it is recommended to use sun protection products or apply the products during autumn or winter months. Glycolic acid is not used concentrated but only diluted.

**Animal Testing:** The substance has not been tested on animals.

**GMO:** Not GMO

**Vegan:** Does not contain animal-derived components

**Country of Origin:** China