

chemical exfoliant

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Chemical Exfoliant

An acid that loosens the bonds holding dead cells to the skin surface, so they shed rather than being scraped off. This is the category with the most active chemistry in mainstream skincare and the one where **concentration and pH together** — not concentration alone — decide what actually happens.

The three families

Family	Members	Solubility	Reaches
AHA — alpha hydroxy acid	Glycolic, lactic, mandelic, malic, tartaric	Water-soluble	Skin surface
BHA — beta hydroxy acid	Salicylic acid	Oil-soluble	Into the pore lining
PHA — polyhydroxy acid	Gluconolactone, lactobionic acid	Water-soluble, large molecule	Surface, slowly

Molecule size drives penetration. Glycolic acid is the smallest AHA and goes deepest — most effective and most irritating. Lactic is larger and gentler and is also a natural moisturising factor, so it hydrates as it

exfoliates. Mandelic is larger still, slow, and the usual choice on darker skin tones where post-inflammatory hyperpigmentation is the risk being managed. PHAs are the largest and mildest, and the sensible starting point for rosacea-prone or reactive skin.

Salicylic acid is the odd one out and the reason is solubility. Being oil-soluble, it partitions into sebum and works inside the follicle, which is why it is the acid for congestion, blackheads and closed comedones while AHAs are the acids for texture and tone.

pH, and why a 10% product can do nothing

An acid only exfoliates in its **free acid** form. Raise the pH toward its pKa and more of it is neutralised into a salt that does not work. A 10% glycolic serum buffered to pH 5 is far weaker than a 5% one at pH 3.5. Free-acid value is the number that predicts the result, and almost nobody prints it. In practice, pH 3.0–4.0 is the working window for AHAs, and below pH 3.0 irritation rises faster than benefit.

Using it

- **Start at one to two nights a week** and build. Almost every acid injury is a frequency injury.
- **Sun sensitivity is not a rumour.** AHAs increase UV sensitivity, and US products containing them are expected to carry a sunburn-alert statement — daily [Facial Sunscreen](#) is not optional alongside them.
- **Do not stack.** An acid plus a [Retinoid Treatment](#) plus a [Facial Scrub](#) in one routine is three exfoliating mechanisms competing for one barrier.
- **Stinging that lasts is damage.** A few seconds of tingle is normal; burning, weeping or persistent flushing is not.

Where it sits in the rules

This is the clearest cosmetic/drug boundary in skincare. **Exfoliating, smoothing and brightening claims keep a product cosmetic** — FDA primary category (14). Salicylic acid at 0.5–2% with an **acne claim** puts it under the OTC acne monograph, making it a drug: Drug Facts panel, active ingredient listed first, expiration date. The same molecule at the same strength can be either, depending entirely on what the label says it does.

FDA's guidance on AHA-containing cosmetics recommends a **free acid concentration of 10% or less, a final pH of 3.5 or greater**, and sun-protection labelling. It is guidance, not a binding limit. Professional peels at higher strengths are outside the consumer product framework. In the EU, glycolic and lactic acid for consumer use are restricted through Annex III with concentration and pH conditions, and stronger formulations are reserved for professional use.

Shelf life

Acids are stable, but the **pH of the finished formula drifts** and packaging matters more than the acid does. Twelve months after opening. Discoloration in an ascorbic-acid-containing blend, or a product that has thinned dramatically, has changed and should go.

Related

- [Skincare](#) — the shelf this sits on, and the rest of it.
- [Cosmetics](#) — what the label is legally allowed to say, and the full catalogue.
- The rest of *Exfoliating* — [Facial Scrub](#) · [Enzyme Peel](#).
- [Toner](#) · [Facial Serum](#) — the two formats these acids are usually sold in.
- [Spot Treatment](#) — where salicylic acid crosses fully into drug territory.
- Regulatory statements here follow the FDA and EU sources listed on [Cosmetics](#), read 16 August 2026.