

# Chemical Exfoliation Mechanics: AHAs, BHAs, and Next-Gen PHAs (Engineering Review 2024)

Por Cristiano Ricardo · Publicado em 22/02/2024

Technical dermocosmetic engineering lecture by Prof. Cristiano Ricardo on chemical exfoliation mechanics: ahas, bhas, and next-gen phas (Clinical Dermocosmetology & Exfoliation Science), featuring colorful schematic diagrams and clinical data.

Versão online e eventuais atualizações:

<https://professor.cristianorichardo.com/post/chemical-exfoliation-mechanics-ahas-bhas-and-next-gen-phas-2024-02-22>

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Clinical Dermocosmetology & Exfoliation Science · Cosmetic Engineering & Science

Chemical peeling agents loosen corneocyte desmosomes, accelerating turnover without mechanical abrasion.

## Engineering Mechanism & Kinetic Flowchart

AHA (Glycolic)  
MW: 76 Da (Small)  
Rapid deep flux  
Desmosome lysis

BHA (Salicylic)  
Lipophilic molecule  
Sebum miscible  
Follicular clearing

PHA (Gluconolactone)  
MW: 178 Da (Bulky)  
Poly-hydroxy humectant  
Zero erythema

## Glycolic Acid & Calcium Ion Chelation

Glycolic acid disrupts cell-to-cell adhesion by chelating calcium ions required for cadherin-mediated desmosome function, triggering uniform desquamation and stimulating dermal fibroblast glycosaminoglycan synthesis.

## Salicylic Acid Folliculotropism

As a lipophilic beta-hydroxy acid, salicylic acid penetrates lipid-filled pilosebaceous units, liquefying comedogenic keratin plugs while delivering intrinsic anti-inflammatory effects via prostaglandin inhibition.

## Polyhydroxy Acids (PHAs) for Compromised Skin

Gluconolactone and Lactobionic Acid feature high molecular weights and multiple hydroxyl groups, absorbing atmospheric water while penetrating gently layer-by-layer without triggering neurosensory burning.

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