



TEXTBOOK



GENESIS FORMULAB

FORMULATORS TOOLKIT -ALPHA HYDROXY ACIDS

Guide and Sample Formulas

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BEAUTY IS SKIN DEEP WITH AHA'S

ALPHA HYDROXY ACIDS IN SKINCARE

- Exfoliation – removal of dead skin cells
- Correction of skin discolouration
- Fading of age spots and acne marks
- Treats discolouration after scarring
- Promotes increased collagen synthesis
- Boosts blood circulation
- Helps prevent acne breakouts
- Brightens the complexion
- Increases active permeation
- Improve the appearance of fine lines and wrinkles

INFORMATION ON PRODUCT FORMULATION AND SKINCARE ROUTINE

- What to expect when starting an AHA routine: People react differently to AHA. Individually, the skin may react differently with consequent treatments; Do not weigh reactions as a sign of efficacy. Usually, with continued use, the skin gets used to AHAs and may not react as before with stinging, itching, or peeling (concentration-dependent).
- AHAs reduce the pH of formulations when added – be certain to always check and adjust the pH of your formulations accordingly.
- There is such a thing as over-exfoliations? Do not overdo it. AHAs should be used 1-3 times a week. This is dictated by skin condition and concentration.
- Alpha hydroxy acids are easily soluble in water
- Adding sunscreen in an emulsion that has a moderate amount of AHA (4-8%) mitigates the skin's sensitivity to the sun.
- Use of AHAs requires continued use of sunscreens during use and for a week afterward.
- Adding alpha hydroxy acid to an already-made emulsion may result in irreversible thinning. Best formulate from scratch. Non-ionic emulsifiers are the emulsifying agents of choice.

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AHA ACTIVITY CHART

CONCENTRATION RANGE	PRIMARY ACTIVITY
0 – 2.0%	pH adjusting purposes generally
2.0 – 4.0%	Reduction of pH, Hydration, Anti-microbial, minimal exfoliation.
4.0 – 10.0%	Reduction of pH, Hydration, Anti-microbial, exfoliation. Reduction of Fine lines, pigment correction
10.0 – 15.0%	Reduction of pH, Hydration, Anti-microbial, exfoliation. Reduction of Fine lines and wrinkles, Pigment correction, and light peeling (dependent on skin tolerance and concentration)

IDEAL FORMULATION PH

The bottom line is when looking for physiological activity from AHAs, formulate between a pH of 3.5 – 3.8.

FORMULA FOR CALCULATING DILUTED ACIDS

$$\frac{\text{Desired Concentration X Batch Size}}{\text{Acid strength (Assay)}} = \text{Required input by weight}$$

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SAMPLE FORMULAS

1. Exfoliating Face Wash with Glycolic acid 5%

PHASE	INGREDIENTS	CONCENTRATIONS
A	Water	23.8
A	EDTA	0.2
A	Glycolic acid crystals 100%	5.0
A	Betaine Powder	2.0
Combine all ingredients in phase A together under low shear until a clear solution is formed.		
B	AOS 40%	20.0
B	Cocamidopropyl Betaine 30%	33.3
B	Coco Glucoside 50%	10.0
Combine all ingredients in phase B together and add to phase A with low shear.		
C	Polysorbate 20	3.0
C	Spiced Amber Fragrance Oil	0.6
Combine phase C together until the solution is homogenous. Add phase C to phase A+B and stir until a homogenous gel forms.		
D	SilkQuat (Polyquaternium-39)	2.0
D	Germall Plus Liquid	0.5
Add phase D to phase A+B+C and stir under low shear until homogenous.		
E	Check and adjust pH to 3.5 – 3.8	

Allow to sit overnight to let all bubble escape before bottling.

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2. Skin Lightening Lotion with 7% Lactic acid

PHASE	INGREDIENTS	PERCENTAGE
A	Water	57.75
A	EDTA disodium	0.2
A	Lactic acid (80% assay)	8.75
A	HEC	0.3
A	Glycerin	7.0
Combine phase A and heat to 75°C		
B	Silkywax	4.0
B	Isopropyl myristate	5.0
B	Coco Caprylate	5.0
B	Cetyl Alcohol	2.0
B	Sepiwhite	1.0
Combine phase B and heat to 75°C. Add phase B to A under high sheer until a milky emulsion forms.		
C	Tranexamic acid	3.0
C	Salic-White	2.0
Cool phase A+B to 60°C and add phase C with high sheer. Continue mixing until the emulsion cools to 40°C		
D	Sorbitan Trioleate	1.5
D	D-Panthenol 75%	1.0
D	Cool Water Fragrance oil	0.5
D	Germall plus liquid	0.5
Add phase D to phase A+B+C and stir under low shear until homogenous.		
E	Check and adjust pH to 3.5 – 3.8	

Emulsion needs to fully set overnight before evaluation.

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3. Skin Brightening toner with 7% AHAs

PHASE	INGREDIENTS	PERCENTAGE
A	Water	
A	Pentylene Glycol	5.0
A	Sodium PCA 60%	1.0
A	Frankincense Hydrosol	10
A	Black pepper Hydrosol	10
A	EDTA Disodium	0.2
A	3D Hyaluronic [Sodium Hyaluronate (Extra-LMW & MMW) and Tremella Fuciformis Sporocarp (hyaluronic) Extract]	10.0
A	Glycolic acid (Assay 60%)	6.67
A	Lactic acid (Assay 80%)	3.75
A	Germall Plus Liquid	0.5
Check and adjust pH to 3.5 – 3.8		