SERUM MASTERY · COHORT 17 · BUILD 01

DLI · SM · 001 · v1.0 · January 2026

Gold Standard

Brightening Serum

TXA + Niacinamide + Alpha-Arbutin

The formula. The phase order. The pH lock. The build, written down.

8.5%	5.0 · 5.5	Gel-serum	Airless pump
Brightening Actives	**pH Target**	**Form**	**Storage**

A Dermalyte Institute formula by Vanessa

Serum Mastery is a fifteen-build intensive. This is Build 01.

What you are holding

This document is the full teaching artifact for Build 01. The next pages cover the equipment you need before you begin, the formula at percentage and 100g batch scale, the science behind why these three brighteners stack the way they do, the build method, troubleshooting, regulatory considerations, batch tracking, and the four-zone stability log. Read it through once before you weigh anything.

Read Before You Build

Equipment, PPE, and prep. Set up first. Then weigh.

EQUIPMENT

- Digital scale, 0.01g accuracy
- Calibrated pH meter, not strips
- Five beakers, 100ml minimum
- Magnetic stirrer or overhead mixer
- Glass stir rod
- Decanting funnel

PPE

- Nitrile gloves throughout
- Dust mask when weighing TXA, niacinamide, and alpha-arbutin powders
- Safety glasses if pH adjusting with concentrated acid or base
- Hair tied back

PREP

- All glassware sanitised with 70% IPA, air-dried
- Workspace wiped down
- Pre-mix 10% citric acid stock and 10% sodium citrate stock
- Print this document and tick each step
- Set your phone timer for pre-dissolves

The Formula

Percentages by total batch weight, with a 100g pre-calculated column. Styled to follow your screenshot while preserving the intended content structure.

INGREDIENT · INCI	%	100g
PHASE A · THE GEL BASE		
Aqua	**20.0%**	**20.00g**
Sepimax Zen *Polyacrylate Crosspolymer-6*	**0.5%**	**0.50g**
PHASE B · HYALURONIC + BETA-GLUCAN DISPERSION		
Propanediol 1,3 *Propanediol*	**3.0%**	**3.00g**
Sodium Hyaluronate (LMW) *Sodium Hyaluronate*	**0.2%**	**0.20g**
Sodium Hyaluronate (HMW) *Sodium Hyaluronate*	**0.1%**	**0.10g**
Yeast Beta-Glucan *Saccharomyces Cerevisiae Extract*	**0.3%**	**0.30g**
PHASE C · ACTIVES + PRESERVATIVE		
Ethoxydiglycol	**5.0%**	**5.00g**
Alpha-Arbutin	**1.5%**	**1.50g**
Aqua	**q.s. to 100**	**to 100g**
Niacinamide	**4.0%**	**4.00g**
Tranexamic Acid	**3.0%**	**3.00g**
Trehalose	**2.0%**	**2.00g**
Betaine	**1.0%**	**1.00g**
Disodium EDTA	**0.1%**	**0.10g**
Sodium Metabisulfite	**0.1%**	**0.10g**
Liquid Germall Plus Propylene Glycol (and) Diazolidinyl Urea (and) Iodopropynyl Butylcarbamate	**0.5%**	**0.50g**
PHASE D · PH LOCK		

Citric Acid (buffer pair) *Citric Acid*	**0.1%**	**0.10g**
Sodium Citrate (buffer pair) *Sodium Citrate*	**0.2%**	**0.20g**

Why This Build

The science behind the stack, in the language you can teach back to a client.

Hyperpigmentation is not one problem. It is a chain reaction. A stress signal fires in the skin. The tyrosinase enzyme switches on. Pigment gets manufactured inside the melanocyte. Pigment travels up to the skin surface. By the time you see a dark mark, all four steps have already happened.

One brightener can only break one link in that chain. That is why most single-active brightening serums plateau. You knock out tyrosinase with alpha-arbutin, but the stress signal keeps firing, so pigment keeps getting made, just slower.

This formula breaks three links at once.

TOP OF THE CHAIN

Tranexamic Acid

Calms the inflammation signal that triggers the whole cascade. Think of it as turning down the alarm before anyone responds.

MIDDLE OF THE CHAIN

Alpha-Arbutin

Slows tyrosinase, the enzyme that actually manufactures pigment inside the cell. Think of it as throttling the factory line.

END OF THE CHAIN

Niacinamide

Blocks the transfer of finished pigment up to the surface of the skin. Pigment gets made, but it cannot show up on the face. Think of it as locking the delivery van in the warehouse.

Three different brakes on the same chain. That is why a stack works harder than a single active sitting at a higher percentage on its own. It is also why the total active load reads as 8.5% rather than a single hero dose. You are not pushing one ingredient to the edge of skin tolerance. You are spreading the work across three pathways, which is gentler to the skin barrier and faster to visible result.

This is the principle behind every brightening serum we build inside Serum Mastery. Pick the chain. Identify the links. Stack the actives so each one breaks a different link.

Method

Order of addition. Each step finishes before the next begins.

01

Phase A. The gel base.

Weigh aqua into your main beaker. Sprinkle Sepimax Zen across the surface. Leave it to wet out for 60 to 90 seconds before stirring. Mix on low to medium until you have a uniform, transparent gel. Five to eight minutes.

02

Phase B. Disperse the hyaluronics and beta-glucan.

Weigh propanediol 1,3 into a small side beaker. Sprinkle both grades of sodium hyaluronate and the yeast beta-glucan into it. Stir gently. They disperse without clumping in the propanediol, then hydrate properly when they meet water. Set aside.

03

Phase C, step 1. Pre-dissolve alpha-arbutin.

In a second side beaker, weigh ethoxydiglycol. Add the alpha-arbutin into it first, before anything else. Alpha-arbutin in ethoxydiglycol dissolves in two to three minutes. In pure water it takes ten to fifteen. This is where ethoxydiglycol earns its keep.

04

Phase C, step 2. Build the aqueous actives and preservation.

In a third beaker, weigh the remaining aqua. Add disodium EDTA, stir to dissolve. Add sodium metabisulfite, stir. Add tranexamic acid, then niacinamide. Wait for each to fully dissolve before the next. Then add trehalose and betaine. Last into this beaker, add Liquid Germall Plus and mix gently.

05

Phase C, step 3. Combine.

Pour the ethoxydiglycol and alpha-arbutin pre-mix into the aqueous active phase. Add the Phase B propanediol, HA, and beta-glucan dispersion. Stir on low until uniform.

06

Phase C, step 4. Add to the gel base.

Slowly pour the combined Phase C into the Phase A gel base while mixing. Mix on low to medium until the actives are fully incorporated and the gel is uniform. Sepimax Zen tolerates electrolytes well, so the structure holds.

07

Phase D. The pH lock.

Pre-dissolve the citric acid and sodium citrate in a small portion of water, or use 10% stock solutions. Add. Stir gently. Measure pH. Adjust drop by drop with the 10%

solutions until pH reads between 5.0 and 5.5. Final visual check. Decant into airless pump packaging.

Troubleshooting

The five things that go wrong on this build, and what to do about each.

If the gel goes lumpy when actives go in	You did not fully hydrate the Sepimax Zen in Phase A. Discard, re-build Phase A, and let it sit longer before adding Phase C next time.
If the formula turns cloudy after the pH lock	Alpha-arbutin is not fully dissolved. Warm the ethoxydiglycol slightly next time before adding the alpha-arbutin, and give it the full three minutes to dissolve before moving on.
If the pH will not sit between 5.0 and 5.5	You added too much buffer at once. Use the 10% stock solutions of citric acid and sodium citrate, drop by drop, instead of trying to dose powder. Powder is too coarse for the precision this needs.
If the colour shifts to yellow at Day 7	Light exposure. Move the sample to a darker cabinet. The sodium metabisulfite slows oxidation but does not stop it. Airless pump and dark storage are non-negotiable.
If the texture thins out by Day 30	The HMW HA is degrading. Check pH again. If it has drifted above 5.5, your preservation is failing or the buffer pair is not holding. Discard. Re-build with fresh buffer stock.

On the skin

Skin Feel	Storage	Usage
Light gel-serum. Glides in fast. No tackiness once absorbed. The trehalose, betaine, dual-HA, and beta-glucan layer leaves a silky finish without the slip-coat of a glycerin-heavy serum.	Airless pump only. Cool, dark cabinet. Out of direct sunlight. The chelator and sodium metabisulfite combination buys you stability, but light and air still age every brightening serum.	AM or PM, on clean skin, before moisturiser. A pea-sized amount across the face. Always pair with broad-spectrum SPF in the daytime when using brightening actives.

Substitutions

For sourcing constraints. Each swap keeps the formula functional, with the trade-off noted.

Sepimax Zen	Carbomer Ultrez 20 at 0.6%. Needs NaOH neutralisation, unlike Sepimax Zen. Adds a step but the skin feel is comparable.
Liquid Germall Plus	Cosgard at 1.0%. Lower pH ceiling. Watch your buffer. Confirm your final pH lands below the Cosgard ceiling before you decant.
Ethoxydiglycol	Propylene glycol at 5.0%. Slower alpha-arbutin dissolve, around 8 to 10 minutes. Warm the propylene glycol gently to speed this up.
HMW Sodium Hyaluronate	Skip entirely. Use 0.3% LMW instead. Skin feel shifts slightly toward thinner and less film-forming, but the formula holds.
Yeast Beta-Glucan	Oat beta-glucan at the same 0.3%. Comparable barrier soothing. Slightly different mouthfeel, marginally more slip.
Tranexamic Acid	Do not substitute. The signal-calming pathway is unique to TXA in this stack. Removing it collapses the three-link logic of the build.

Regulatory Notes

Verify each entry against the current cosmetic active register for your target market. Caps and disclosure rules change.

Tranexamic Acid (3.0%)	Verify against your jurisdiction's current cosmetic active register. Some markets classify higher concentrations as prescription only. Confirm before manufacture.
Niacinamide (4.0%)	Widely permitted at this percentage in cosmetics globally. Confirm against your supplier's safety data sheet for any market-specific notes.
Alpha-Arbutin (1.5%)	Several jurisdictions impose caps on alpha-arbutin in face

	products. Confirm the current cap for your target market. Used here at a conservative percentage.
Sodium Metabisulfite (0.1%)	Sulfite-class preservative. Some jurisdictions require allergen disclosure on the finished product label above certain thresholds. Confirm your labelling rules.

Notes & Tracking

Batch traceability, observations, and the four-zone stability log.

Batch tracking

Batch number

Build date

Ambient temperature

Ambient humidity

Operator

Final yield (g)

Formulator's notes

> **BUILD OBSERVATIONS**
>
> *Replace this placeholder with your notes from the build. Why you chose the percentages you did, what surprised you, how the gel behaved during Phase C incorporation, whether the pH landed inside the band on first attempt or needed adjustment, and anything you would change next time. This section travels with the formula, so future you remembers what past you learned.*

Stability Log

Store samples in four zones. Cabinet for ambient. Bathroom for warm and humid. Fridge for cold. Windowsill for UV. Log each check-in. Sign off with the verdict at the end.

DAY	pH	COLOUR	TEXTURE	NOTES
Day 0				
Day 7				
Day 14				
Day 30				
Day 60				
Day 90				
VERDICT				

The Verdict row is where you declare the outcome. Pass at 90 days, or fail at the day it failed. A log without a verdict is just a record. The verdict is what makes the build complete and what tells future you whether to scale, reformulate, or discard.

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