

APPLICATION GUIDELINES

How to formulate with Velura.

A high-molecular-weight sulfated polysaccharide. Treat it like one: hydrate it fully, keep added salt low, and let it build a silky, plumping film. The matrix, the order of addition, two starter formulas, and the things that go wrong, on the pages that follow.

02 Applications & dosage matrix

03 Incorporation method

04 Starter formula · plumping serum

05 Starter formula · barrier cream

06 Challenges & solutions

APPLICATIONS & DOSAGE

Where Velura lives.

APPLICATION	DOSAGE	INCORPORATION PHASE	PROCESS NOTE
Anti-aging serum	2–5%	Water phase or cool-down	Add liquid under low shear
Hydrating cream, O/W	2–5%	Cool-down, post-emulsion	Heat-stable; cool-down for economy
Eye contour gel	2–4%	Pre-gelation water phase	Keep electrolytes low for viscosity
Sheet-mask essence	2–5%	Final mixing phase	Compatible with humectant blends
Leave-on gel	2–4%	Water phase	Pair with gentle nonionic gellants
Powder concentrate · TB-02P	0.05–0.2%	Pre-hydrate cold	10 to 25× concentration vs liquid

PH WINDOW

Stable 4.0 to 8.0. Optimal 5.5 to 7.5 for slip, viscosity, and sensory.

TEMPERATURE

Heat-stable. Tolerates emulsification to 80 °C; add in cool-down to save energy.

ELECTROLYTES

Minimise added salt. High ionic strength collapses the polysaccharide network.

INCORPORATION METHOD

Order of addition.

LIQUID (TB-02)

- 01 Build the formulation water phase; cool below 50 °C if hot-processed.
- 02 Add Velura liquid directly under low to moderate shear.
- 03 Mix until homogeneous; the network builds slip and body.
- 04 Sequence any salts last and minimally to protect viscosity.
- 05 Confirm finished-product pH 5.5 to 7.5; add preservative.
- 06 No special light protection required for the active.

POWDER CONCENTRATE (TB-02P)

- 01 Pre-hydrate in cold DI water as a 1 to 3% pre-mix; stir 15 to 20 min.
- 02 Allow full hydration, no lumps, then add to the water phase.

LIMITS & COMPATIBILITY

ADD TEMP	To 80 °C; cool-down preferred
PH	4.0 to 8.0 (5.5–7.5 optimal)
SHEAR	Low to moderate
ELECTROLYTES	Minimise; salt thins viscosity
COMPATIBLE	Glycerin, betaine, panthenol, nonionics
AVOID	High cationic load, high salt in-phase

RULE OF THUMB

It is a high-MW polysaccharide. Hydrate fully, keep salt low, low shear. Every sensory loss traces back to one of those three.

STARTER FORMULA

Plumping hydra-serum.

REFERENCE FORMULA • LEAVE-ON • PER
100 g

Deionized water	ad 100 g
Glycerin	4.0 g
Betaine	2.0 g
Panthenol	1.0 g
Sodium hyaluronate	0.10 g
Xanthan gum	0.20 g
Preservative (phenoxyethanol)	1.0 g

Velura 4.0 g • 4.00%
liquid • TB-02

TARGET • SHEER PLUMPING
SERUM

TARGET PH

5.5–6.5

keep added salt minimal for slip

PROCESS

- 01 Disperse xanthan in glycerin, add to water under stirring until hydrated.
- 02 Add betaine, panthenol, sodium hyaluronate; mix until clear.
- 03 Add Velura liquid under low shear; mix until homogeneous.
- 04 Add preservative; adjust pH to 5.5 to 6.5.
- 05 Keep any added salts minimal to preserve slip and viscosity.
- 06 Fill into airless or pump packaging.

THINGS THAT GO WRONG

- 00 **High salt:** electrolytes thin the gel and dull slip. Keep ionic strength low.
- 01 **Over-shear:** prolonged high shear shear-thins the EPS network. Low shear.
- 02 **Cationics:** conditioning agents complex the sulfated polysaccharide. Screen first.
- 03 **Flat sensory:** pair with a humectant blend for immediate cushion.

STARTER FORMULA

Barrier moisture cream.

REFERENCE FORMULA • LEAVE-ON O/W •
PER 100 G

Deionized water	ad 100 g
Glycerin	5.0 g
Caprylic/capric triglyceride	6.0 g
Cetearyl alcohol	3.0 g
Glyceryl stearate SE	4.0 g
Squalane	3.0 g
Carbomer	0.20 g
Preservative (phenoxyethanol)	1.0 g

Velura 3.0 g • 3.00%
liquid • cool-down

TARGET • SOFT BARRIER CREAM

TARGET PH

5.5–6.5

neutralize carbomer minimally to limit salt

PROCESS

- 01 Oil phase (triglyceride, cetearyl alcohol, glyceryl stearate, squalane) to 70 to 75 °C.
- 02 Water phase (water, glycerin, carbomer) to 70 to 75 °C; disperse carbomer fully.
- 03 Emulsify oil into water under high shear; begin cooling.
- 04 Below 45 °C add Velura liquid under low shear.
- 05 Neutralize carbomer minimally; add preservative.
- 06 Adjust pH to 5.5 to 6.5; fill.

THINGS THAT GO WRONG

- 00 **Neutralizer salt:** excess base adds electrolyte and thins. Neutralize just to target.
- 01 **Cationic emulsifier:** complexes the EPS. Use nonionic systems.
- 02 **Over-thickening:** high-MW EPS plus carbomer can over-build. Calibrate gellant.
- 03 **Hot hold:** add in cool-down for sensory and energy economy.

STARTER FORMULA

Plumping eye contour.

REFERENCE FORMULA • LEAVE-ON • PER
100 g

Deionized water	ad 100 g
Glycerin	3.0 g
Caffeine	1.0 g
Panthenol	1.0 g
Cetearyl alcohol	2.0 g
Light emollient ester	4.0 g
Emulsifier (glyceryl stearate)	3.0 g
Preservative (phenoxyethanol)	1.0 g

Velura 4.0 g • 4.0%
liquid • add in cool-down

TARGET • LIGHT EYE GEL-
CREAM

TARGET PH

5.0–6.0

caffeine dissolves fully before emulsifying

PROCESS

- 01 Heat water and oil phases separately to 70 to 75 °C.
- 02 Dissolve caffeine in the water phase; emulsify oil into water.
- 03 Cool under gentle stirring to below 40 °C.
- 04 Add Velura liquid and panthenol; mix until uniform.
- 05 Add preservative; adjust pH to 5.0 to 6.0.
- 06 Fill into airless eye applicator.

THINGS THAT GO WRONG

- 00 **High shear late:** heavy shear after Velura can thin the gel network. Fold in gently.
- 01 **Caffeine grit:** undissolved caffeine leaves crystals. Dissolve fully before emulsifying.
- 02 **Hot addition:** add Velura below 40 °C to protect the polysaccharide.
- 03 **Electrolyte load:** high salt thins the system. Keep ionic actives moderate.

STARTER FORMULA

Sheet-mask essence.

REFERENCE FORMULA • RINSE-FREE
ESSENCE • PER 100 G

Deionized water	ad 100 g
Glycerin	5.0 g
Betaine	2.0 g
Panthenol	1.0 g
Sodium hyaluronate	0.10 g
Hydroxyethylcellulose	0.15 g
Preservative (phenoxyethanol)	1.0 g

Velura 5.0 g • 5.0%
liquid • add cold

TARGET • LIGHT WATERY
ESSENCE

TARGET PH

5.0–6.5

low viscosity for even sheet loading

PROCESS

- 01 Hydrate hydroxyethylcellulose and sodium hyaluronate in water.
- 02 Add glycerin, betaine, panthenol; mix until clear.
- 03 Add Velura liquid at room temperature under low shear.
- 04 Add preservative; adjust pH to 5.0 to 6.5.
- 05 Confirm viscosity is low enough for even sheet saturation.
- 06 Load sheets and seal sachets.

THINGS THAT GO WRONG

- 00 **Too viscous:** high gum loads block even sheet loading. Keep thickener light.
- 01 **Hot mixing:** add Velura cold; heat is unnecessary and risks the polysaccharide.
- 02 **Sachet compatibility:** confirm essence is compatible with the nonwoven and film.
- 03 **Microbial load:** water-rich essence needs a robust, validated preservative system.

COMMON CHALLENGES & SOLUTIONS

When it misbehaves.

VISCOSITY COLLAPSE

Cause: high electrolyte / salt load screening the polysaccharide charge. Fix: minimise added salt, sequence electrolytes last, and avoid high-ionic-strength extracts in the same phase.

CATIONIC INCOMPATIBILITY

Cause: the sulfated EPS is anionic and complexes with cationic actives and conditioning emulsifiers. Fix: build on nonionic systems; pre-test any cationic before scale-up.

PRESERVATION

Cause: a polysaccharide adds a nutrient load to the water phase. Fix: use a robust broad-spectrum system and confirm with a full preservative challenge test.

TACK AT HIGH DOSE

Cause: the film former can feel tacky above 5%. Fix: cap inclusion at 5%, and blend with light emollients or a dry-touch silicone alternative for finish.

NEED A HAND?

Send your matrix, target sensory, and process constraints. We will return a calibrated inclusion rate and a benchtop protocol, and ship a 30 g sample alongside.