

Spiral Eye Formulations #3

Overnight Foot Mask

Rich Overnight Treatment | Shea + Cocoa Butter | Softens Dry Feet | Wear Socks Overnight

Document: Formulation Sheet	Type: Overnight Foot Mask (Rich O/W Emulsion)
Batch Size: 100g	Difficulty: ■■ Intermediate (hot process)
Base: Rich occlusive O/W emulsion	Preservative: Optiphen @ 1%
Emulsifier: E-Wax / GMS SE-40 / BTMS-50	Target pH: 5.2 – 5.8

SECTION 1 — FINAL FORMULATION

PHASE A — Water Phase | Heat to 70–75°C

Ingredient	%	For 100g	Function
Distilled Water	61.80 %	61.8 g	Main water phase of the emulsion
Disodium EDTA	0.10%	0.1 g	Chelating agent — stabilises emulsion, boosts preservative
<u>Vegetable Glycerine</u>	6.00%	6 g	Humectant — hydrates, draws moisture into skin
<u>Xanthan Gum</u>	0.30%	0.3 g	Stabiliser — supports emulsion + texture (slurry first)

PHASE B — Oil Phase | Heat to 70–75°C

Ingredient	%	For 100g	Function
<u>Emulsifying Wax</u> or GMS SE-40 or <u>BTMS-50</u>	6.00%	6 g	Emulsifier — binds oil & water into a stable cream
<u>Cetyl Alcohol</u>	3.00%	3 g	Fatty alcohol — thickness, glide, creamy body
<u>Stearic Acid</u>	2.00%	2 g	Hardener — firms the cream, richer body
<u>Shea Butter</u>	8.00%	8 g	Rich emollient butter — deep overnight moisture
<u>Cocoa Butter</u>	4.00%	4 g	Occlusive butter — seals in moisture, protective layer
<u>Castor Oil</u>	4.00%	4 g	Film-forming oil — locks moisture in overnight
Olive / Sunflower Oil	2.00%	2 g	Emollient oil — nourishes (olive richer, sunflower lighter)

PHASE C — Cool-Down Phase | Add below 40°C

Ingredient	%	For 100g	Function
<u>dlPanthenol</u> (Pro-Vitamin B5)	1.00%	1g	Soothing, moisture retention, softening
<u>Vitamin E Acetate</u>	0.40%	0.4 g	Antioxidant — protects oils, skin benefit
<u>Fragrance</u>	0.40%	0.4 g	Scent
<u>Optiphen</u>	1.00%	1 g	Broad-spectrum preservative (max 1%)
<u>Citric Acid Solution</u> (10%)	q.s.	q.s.	pH adjuster — bring to 5.2–5.8

Note: Total = 100% (citric acid q.s. on top). This is a rich, thick hot-process O/W emulsion (~29% oil phase) designed as an overnight foot mask. Both phases heated to 70–75°C, combined, then cool-down actives added below 40°C. Target pH 5.2–5.8. Choose ONE emulsifier. Optiphen is the preservative (use at up to 1%). Add citric acid dropwise to adjust pH.



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SECTION 2 — INGREDIENT GLOSSARY

Distilled Water	The main water phase of the emulsion. Must be distilled to avoid minerals that destabilise the emulsion and reduce preservative efficacy.
Disodium EDTA	A chelating agent that binds hard water minerals, stabilising the emulsion and boosting the preservative's effectiveness.
<u>Vegetable Glycerine</u>	A humectant that draws moisture into the skin — important for keeping dry, rough foot skin soft and hydrated.
<u>Xanthan Gum</u>	A natural stabiliser that supports the emulsion and gives a smooth texture, helping prevent oil and water separating over time. Disperse into glycerine as a slurry first.
<u>Emulsifying Wax or GMS SE-40 or BTMS-50</u>	The emulsifier — it binds the oil and water phases into a stable, creamy lotion. Use ONE (here at 6% for this rich, high-oil formula): Emulsifying Wax or GMS SE-40 are reliable non-ionic choices; BTMS-50 is cationic and gives extra slip and a silky feel.
<u>Cetyl Alcohol</u>	A fatty alcohol (not drying alcohol) that adds thickness, a smooth glide, and creamy body, while also softening skin.
<u>Stearic Acid</u>	A fatty acid that firms and hardens the cream, giving it a richer, thicker body — ideal for an intensive heel cream that needs to stay put and form a protective layer.
<u>Shea Butter</u>	A rich, nourishing butter packed with fatty acids — deeply moisturises dry feet overnight. At 8% it is the key emollient in this rich mask.
<u>Cocoa Butter</u>	A hard, occlusive butter that forms a protective barrier on the skin, sealing in moisture — excellent for shielding cracked heels and locking hydration in.
<u>Castor Oil</u>	A thick, film-forming oil that creates a protective, moisture-sealing layer on the skin — ideal for an overnight mask that locks moisture in while you sleep.
Olive / Sunflower Oil	An emollient oil that nourishes skin. Olive is richer and more occlusive; sunflower is lighter and faster-absorbing. Either works — choose based on desired richness.
<u>dlPanthenol (Pro-Vitamin B5)</u>	A pro-vitamin that attracts and holds moisture, supports skin barrier repair, and soothes — genuinely helpful for damaged, dry foot skin.
<u>Vitamin E Acetate</u>	An antioxidant that protects the oils from going rancid (extending shelf life) and gives a skin-conditioning benefit.
Fragrance	The scent of the cream. Use skin-safe fragrance oils at 0.3–1%. Add in the cool-down phase to preserve the scent.
<u>Optiphen</u>	A broad-spectrum preservative (phenoxyethanol and caprylyl glycol) essential for any water-containing product. Add Optiphen during cool-down at the supplier-recommended rate and re-check the final pH and stability.
<u>Citric Acid Solution (10%)</u>	Used q.s. to bring pH to 5.0–5.5, close to skin's natural pH. Prepare as a 10% solution for controlled adjustment.



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SECTION 3 — STEP BY STEP PROCEDURE (Hot Process)

Step	Action	Temp	Instruction
1	Sanitize	Room Temp	Sanitize all equipment, beakers, and jars with IPA 70%. Make sure everything is clean and dry – water-based products carry contamination risk.
2	Prepare Citric Solution	Room Temp	Prepare a 10% citric acid solution. Set aside for pH adjustment. Also make a glycerine-xanthan slurry (mix xanthan into the glycerine smoothly).
3	Water Phase	70–75°C	Combine Distilled Water and Disodium EDTA in a heatproof beaker. Add the glycerine-xanthan slurry. Heat to 70–75°C, stirring, until uniform.
4	Oil Phase	70–75°C	In a separate beaker, combine the Emulsifier, Cetyl Alcohol, Stearic Acid, Shea Butter, Cocoa Butter, Castor Oil, and Olive/Sunflower Oil. Heat to 70–75°C until everything is fully melted and uniform.
5	Combine Phases	70–75°C	Pour the oil phase into the water phase (both at the same temperature). Blend with a stick blender / mixer for 1–2 minutes until it emulsifies into a uniform white cream.
6	Start Cooling	Cooling	Keep stirring gently (or pulse the blender) as the cream cools. It will thicken as it cools down. Stir until it reaches about 40°C.
7	Cool-Down Actives	Below 40°C	Once below 40°C, add dl-Panthenol, Vitamin E, Fragrance, and Optiphen one by one, stirring gently after each. Adding these warm would degrade them.
8	pH Adjustment	Room Temp	Check pH and adjust to 5.2–5.8 with the 10% citric acid solution. Add dropwise or 0.05–0.1g at a time, stir, and re-test after each addition.
9	Rest & Re-check	Room Temp / 24 Hours	Let the cream rest 24 hours. Re-check texture, pH, and stability – it should be a smooth, stable cream with no separation or weeping.
10	Fill & Label	Room Temp	Fill into clean jars or tubes. Label with product name, full ingredient list (INCI), batch date, use-by (3–6 months for DIY), and: 'For external use only. Avoid broken or irritated skin. Discontinue use if irritation occurs.'

SECTION 4 — CLAIMS, USE & VARIATIONS

Safe Marketing Claims (you CAN say)

SAFE TO USE	WHY IT'S SAFE
Rich Overnight Foot Mask	Describes the product type and use, not a medical action
Softens Dry Feet	Cosmetic softening claim
Helps smooth rough-feeling heels	Cosmetic skin-feel claim (feel/look, not healing)
Apply at night and wear socks	Usage instruction
Leaves feet feeling soft and moisturized	Cosmetic skin-feel claim



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SECTION 4 – CLAIMS, USE & VARIATIONS - continued

Avoid These Claims (do NOT say)

AVOID	WHY
Heals Cracked heels	Medical Healing Claim – requires drug approval
Treats Wounds	Medical Treatment Claim
Antifungal	Drug/Medical Claim
Diabetic Foot Treatment	Serious Medical Claim – never use on a cosmetic
Repairs Damaged Skin	Medical/Healing Claim

Fragrance/Scent Variations

EDITION	SCENT DIRECTION	FEEL
Shea Comfort (base)	Warm Shea + Vanilla	Cosy, nourishing
Lavender Night	Lavender + Chamomile	Relaxing bedtime care
Cocoa Butter Warm	Cocoa + Sweet Almond	Rich, chocolatey, comforting
Tee Tree Fresh	Tea Tree + Mint (scent)	Clean, fresh, overnight feel

Tip: This is a rich, occlusive overnight mask – heavier than a daily lotion by design. Apply a generous layer at night, wear cotton socks, and rinse or wipe excess in the morning. Keep marketing to cosmetic claims (softens, smooths look/feel, moisturizes) and avoid all medical claims.

SECTION 5 - EQUIPMENT LIST

#	EQUIPMENT	SPEC	PURPOSE
1	Digital Scale	±0.1g accuracy	Accurate weighing of all ingredients
2	Heatproof Beakers x2	Glass/SS	Separate water phase and oil phase
3	Double Boiler/Hot Plate	Adjustable	Heating both phases to 70–75°C
4	Thermometer	0–100°C	Matching phase temps and cool-down point
5	Stick Blender/Mixer	Immersion	Emulsifying the cream
6	Small Cup	50 mL	Glycerine-xanthan slurry, citric solution
7	pH Meter/Strips	Calibrated/4-9	pH measurement and adjustment
8	Pipettes/Droppers	1-5 mL	Fragrance, preservative, acid dosing
9	Jars/Tubes	PET or PP	Final packaging
10	IPA 70% Spray	Standard	Sanitizing all equipment



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SECTION 6 - FORMULATOR NOTES

Rich Overnight Mask	With ~29% oil phase plus Shea and Cocoa butters and Castor oil, this is a thick, occlusive mask built to seal moisture in overnight. It is deliberately heavier than a daily lotion. Best applied at night with cotton socks.
Hot Process — Match Temps	Both the water phase and oil phase must be at the SAME temperature (70–75°C) when combined. If the temperatures differ a lot, the emulsion can fail or be unstable. Use a thermometer.
Choose ONE Emulsifier	Use only one of: Emulsifying Wax, GMS SE-40, or BTMS-50 (at 6% for this rich formula). E-Wax/GMS are reliable non-ionic options; BTMS-50 is cationic, giving extra slip and a silky feel.
Blend Well to Emulsify	Use a stick blender when combining the phases — hand-stirring alone often will not fully emulsify a rich, buttery formula. Blend 1–2 minutes until smooth, then stir gently as it cools.
Cool-Down Actives	Panthenol, Vitamin E, fragrance, and especially the Optiphen preservative must be added BELOW 40°C. Heat can degrade the preservative and delicate actives.
Xanthan Slurry	Disperse Xanthan into the glycerine first as a slurry before adding to water — this prevents lumps in the cream.
pH 5.2–5.8	Adjust to 5.2–5.8 gradually with citric acid solution after the cream has cooled and is uniform. This range suits skin and the Phenoxyethanol/EHG preservative.
Cosmetic Positioning	This is a cosmetic overnight foot mask. Market it with cosmetic claims (softens, smooths the look/feel of rough heels, moisturizes) and avoid all medical claims (healing, treating wounds, antifungal, diabetic foot, repairing damaged skin). Menthol-free, so it does not sting — but still avoid broken or irritated skin.
Shelf Life	3–6 months for DIY / small batches without formal stability and micro testing. Rich emulsions need good preservation and clean handling. For longer shelf-life claims, professional stability and microbial testing is required.
How to Use	At night, apply a generous layer to clean, dry feet — focus on heels and rough, dry areas. Put on clean cotton socks and leave on overnight. In the morning, massage in any excess or rinse. Use a few times a week, or nightly for very dry feet.

Rich water-based overnight mask — preservative required. Adjust pH 5.2–5.8. For external use only. Avoid broken or irritated skin. Discontinue use if irritation occurs.

**Overnight Foot
Mask v1.0**

