Overcome Common Challenges with Shea Butter & Expand Your Toolbox

- With AAK's liquid shea butters

Shea butter is a highly valued & broadly known ingredient by consumers and manufacturers

Global Shea Aliance, State of the Industry 2022

Among industry experts, there is no doubt that shea is a highly-valued ingredient in all types of personal care products. This is because it "checks so many boxes" among consumer preferences: a natural ingredient with highly desirable moisturizing and sealing properties that is good on the planet and provides a significant source of economic opportunity for women in rural Africa

69% *of US consumers are aware that Shea oil/butter is used as an ingredient in personal care products*

AAK online consumer study, March 2024

Article by National Programs in March 2022

85% of consumers worldwide prefer skin care products that contain natural ingredients like shea butter

AAK study Plant-based foods in USA, March '24,. Plant-based dairy consumers n=287

This can be seen in the high level of penetration & communication in personal care products

Penetration in new launches per segment

- **5-7%** Cleansers, shampoos, shower products & deodorants
- **14-18%** Eye&face care, hair treatments, conditioners, bar soaps, lip colour
- **30-35%** body & foot care
- **50-55%** hand/nail and lip care

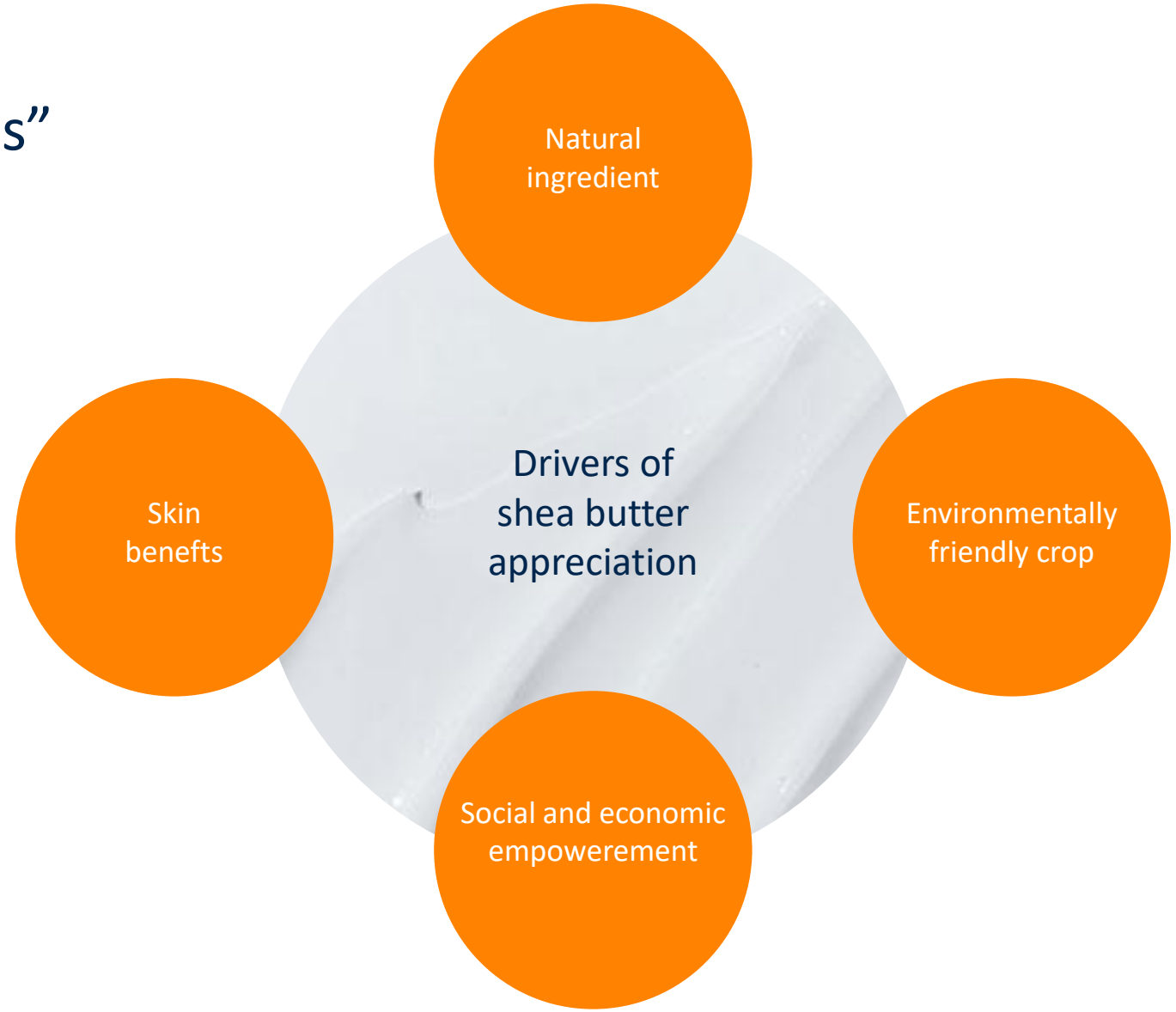
Key claims in shea containing products

- **76%** Botanical/herbal (vs. 44%)
- **66%** Moisturizing / hydrating (vs 37%)
- **38%** Ethical/environmental (vs 28%)

Penetration is growing 4% y-o-y on average

Mintel GNPD, Launches containing the INCI: Butyrospermum parkii butter worldwide, 2021-244

Shea butter
”ticks many boxes”



Natural ingredient

- Consumers look for **natural, sustainably sourced ingredients** and want **transparency** about them

What product features are you looking for in beauty?

- 29% All natural ingredients
- 23% Ingredient transparency
- 16% Sustainably sourced

- Natural ingredients offer environmental benefits but also align with the growing consciousness among consumers regarding **health and wellness.**
- This is preference is accentuated in **younger generations (millennials and Gen Zs)** who are especially drawn to clean beauty and products free from synthetic ingredients

Top Trends Shaping the Beauty and Personal Care Industry – Euromonitor, June 2024
Skincare Analysis: Boomers vs. Millennials vs. Gen-Z
Global Natural Cosmetics Market Size, Trends, Share 2033

Shea Trees Have Positive Environmental Benefits

- Grow wild in parkland or in mixed agroforestry systems
- Sequester CO_2 from the atmosphere.
- Help fight desertification
- Facilitate protection of biodiversity
- Manual collection is non-invasive.
- No active use of fertilizers or pesticides.

Shea Has Social and Economic Benefits

- Shea supports the empowerment of women.
- 900.000mt of kernels are collected and around 55% exported. The remainder is processed locally or provides a source of oil for households.
- 237 M$ of economic impact across Africa at a local community level from the shea trade

Skin Benefits

- Shea butter, like most other vegetable oils & fats is composed primarily of tryglicerides
- One of its uniqueness, is its high content of non-glycerides compounds, commonly known as unsaponifiables.
- The primary compounds within unsaponifiables are triterpene esters. Triterpenes are well known for their skin regenerating and protecting properties.
  - A commonly used oil has typically below 1% of unsaponifiables, including triterpene esters.
  - Typically, a refined shea butter has a content of triterpene esters in the range of **2-6%.**
  - AAK liquid shea butters have a triterpene content **9,5-11.5%,** which represents around 2x of a refined shea butter.

Shea Butter Extract for Bioactive Skin Care | Cosmetics & Toiletries
The Effect of the New Lupeol Derivatives on Human Skin Cells as Potential Agents in the Treatment of Wound Healing - PMC

Are You Using Shea Butter to its Full Potential?

AAK's Liquid Shea Solutions Have Been Designed to Overcome Common Challenges with Shea Butter & Expand Your Toolbox

LIPEX® 205

INCI: Butyrospermum parkii butter

Low-spreading, rich in triterpene esters and linoleic acid, it delivers high stability & moisturizing benefits to formulations.

LIPEX® SheaLiquid TR

INCI: Butyrospermum parkii butter

This **climate-compensated, fully traceable,** low-spreading liquid butter is rich in triterpene esters and linoleic acid and delivers high stability and moisturizing benefits.

LIPEX® SheaClear

INCI: Butyrospermum Parkii Oil

This **clear** and low-spreading oil with moisturizing and conditioning benefits is ideal for creating **translucent and transparent formulations***

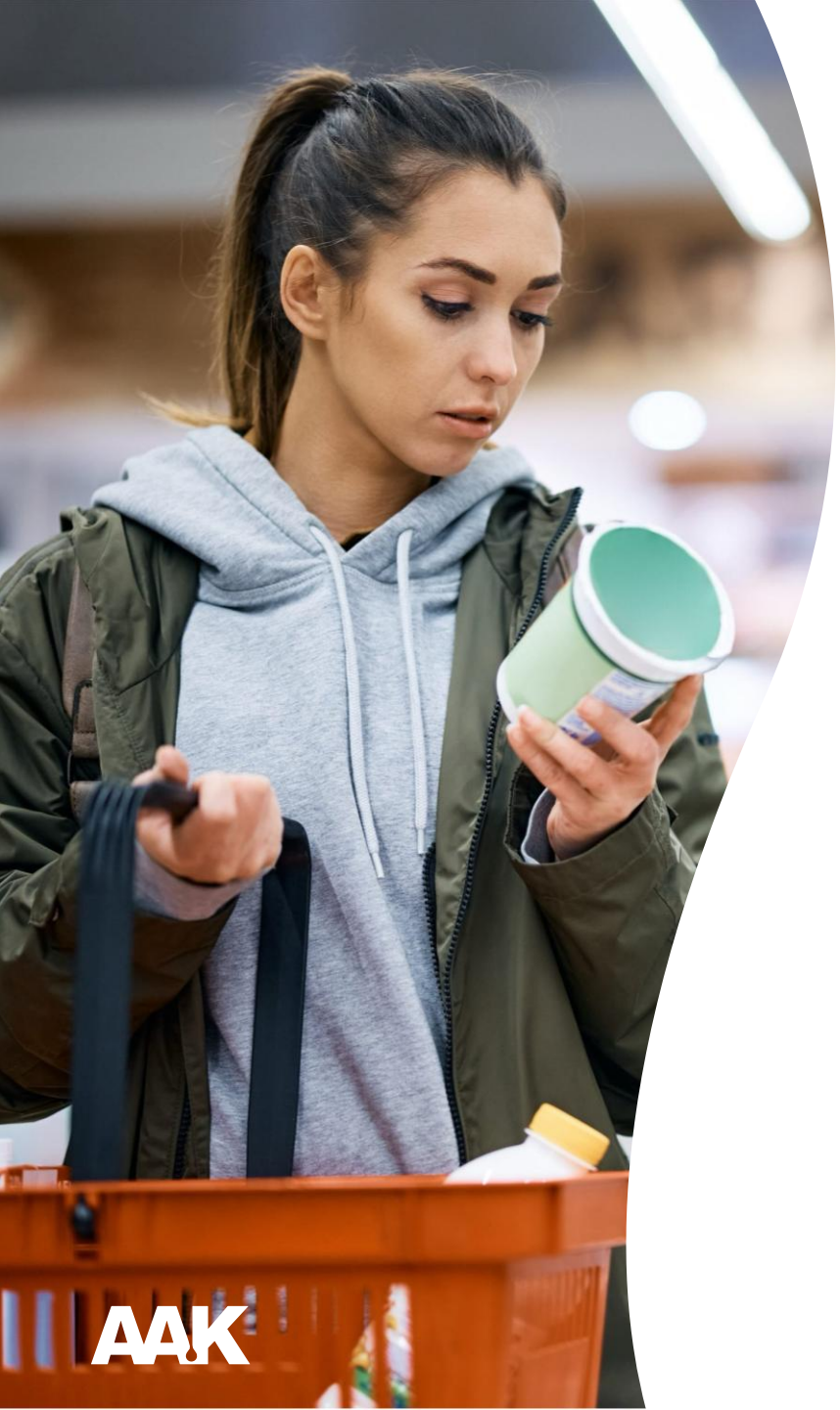
(*)When using LIPEX® SheaClear up to 25%

How Can Liquid Shea Help YOU?

Meet Anne

Meet John

Meet Maria



Meet Anne

- Anne works developing personal care products
- She is constantly looking for inspiration:
  - Innovative ingredients with an associated storytelling
  - Playful, on-trend textures
  - Ingredients that help her stay relevant with trends
- Anne is familiar with shea butter, she knows it as an appreciated butter in the industry that provides texture and consistency to formulations

See here how AAK's liquid shea can support Anne in her product development journey

Meet John

- John works in production in a cosmetics company
- Continuous improvement is in John’s DNA and he has targets on improving efficiencies in the factory both in terms of productivity but also in terms of environmental impact.
- He is in regular contact with the product development teams in order to study ways that those efficiencies can be made a reality.
- He has worked with butters in the factory, and his experience is that they are not always the easiest ingredient to work with

See here how AAK’s liquid shea can support John achieve his efficiency improvements

Meet Maria

- Maria is a formulator. With speed to market increasing, there is a growing pressure on formulation development time.
- She looks for ingredients that are as robust as possible and that are easy to formulate with. Working with robust ingredients that don't often pose stability challenges eases her work significantly.
- She has worked with shea butter, and is aware that depending on the dosage and the other ingredients in the formulation, you need to be mindful while formulating and upscaling

See here how AAK's liquid shea can support Maria making formulating worry free

What type of products does liquid shea enable?

Oils

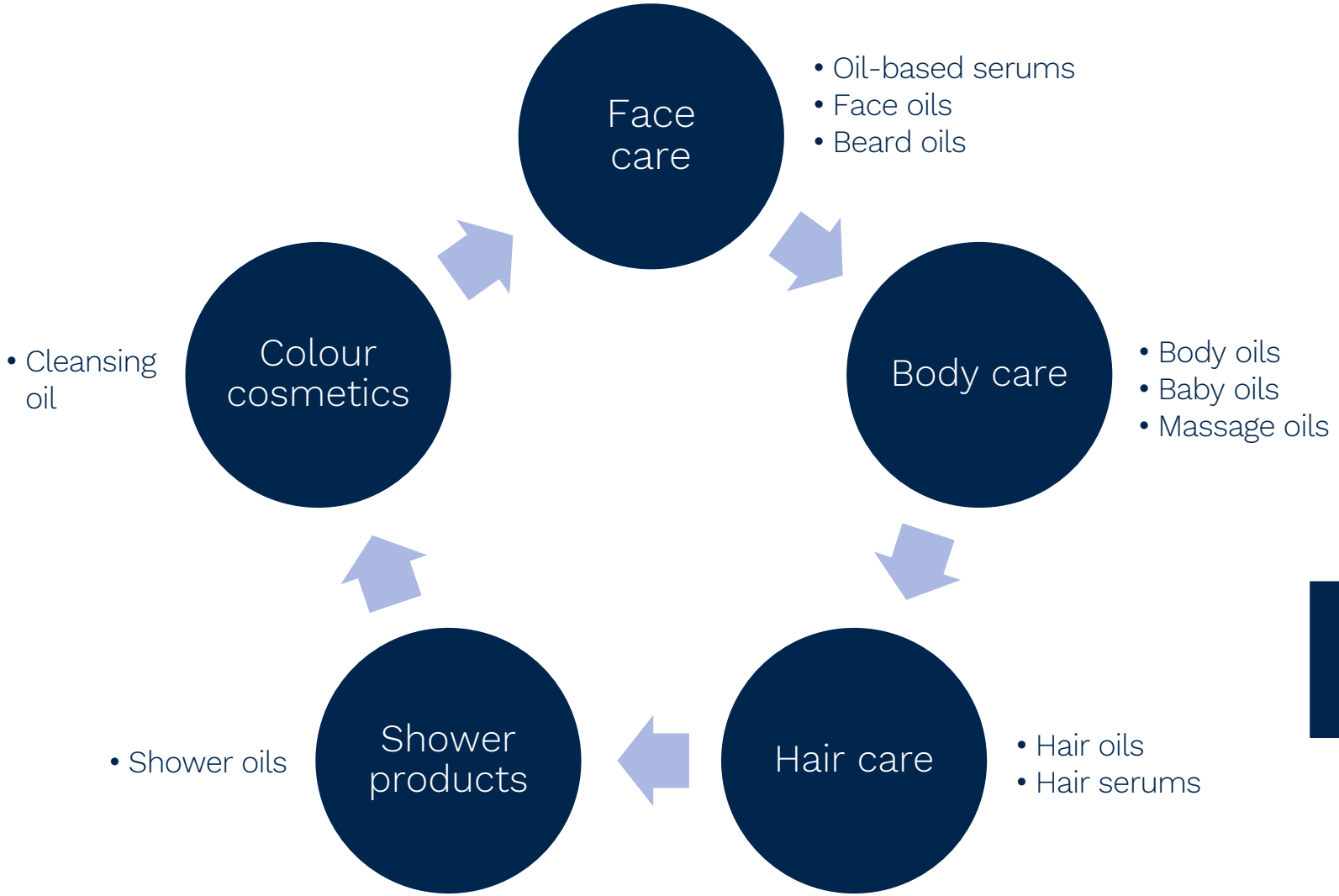
Light, fluid formulations

Minimalistic formulations

Playful textures

What type of products does liquid shea enable?

Oil continuous products don’t often contain shea



- In these applications, shea penetration is significantly below the overall category penetration (<5%)
- Shea is not associated with the aesthetic & sensorial attributes of these formulations:
  - Transparency
  - Fluid, oil like formulations
- However, they are all applications where moisturizing, skin protecting benefits are highly desired

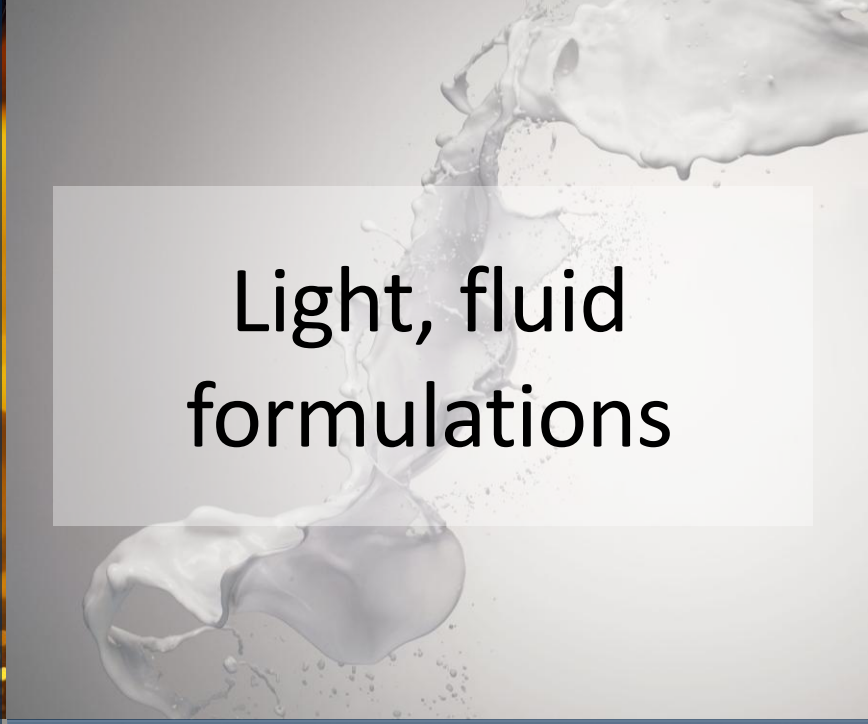
What if you could differentiate your product by including a well known & appreciated ingredient

Liquid shea allows you to bring desired skin, planet & people benefits to oil formulations

- Studies show that you can, in most cases, include **up to 25% of LIPEX SheaClear** and obtain formulations which will be clear at 15°C and above.

Check out some of our shea containing oil formulations in our website!

What type of products does liquid shea enable?



Light, fluid formulations

Fluid / lighter consistency products

- Usage of shea butter is traditionally reserved or associated with applications that are richer, thicker – like hand or body care
- Shea butters is less top of mind when thinking about:
  - Fluid formulations (conditioners, “milky” body lotions…)
  - Lighter, less rich formulations (face/eye care)

→ Skinification trend, selfcare trend, interest in sustainable solutions… multiple key personal care trends support the use of shea in the above formulations

How can liquid shea enable this?

By using liquid shea, more fluid, less thick formulations can be obtained

- To showcase how big a difference in texture can be achieved, two **water-in-oil** emulsions have been created.
- They are exactly the same, with the only difference being whether LIPEX Shea or liquid shea (LIPEX 205) is used as the only emollient in the oil phase.

Liquid shea is a key additional tool in your toolbox, to give you all the goodness on skin, people and planet of shea butter – with the benefits of being able to work with a liquid ingredient.

LIPEX® Shea

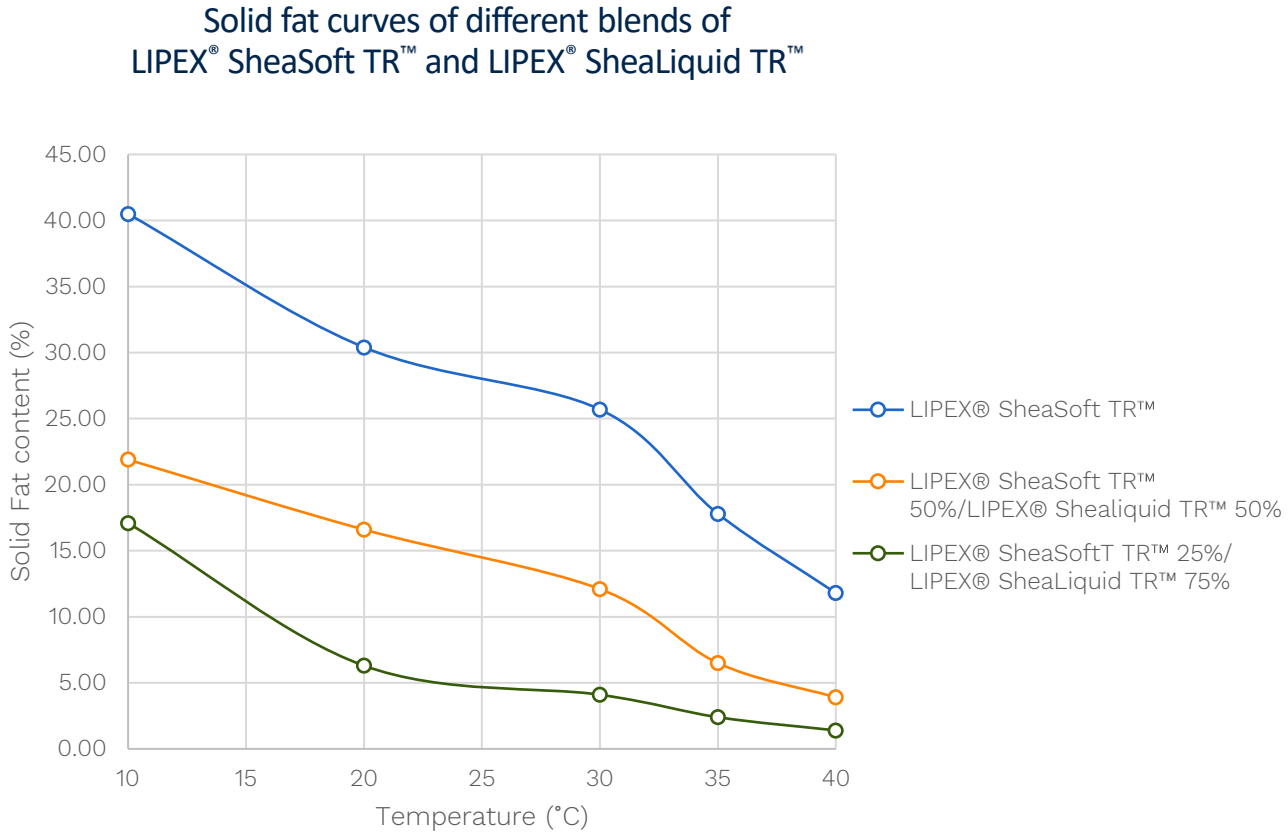
LIPEX® 205

Formulation: 30% shea butter, 2.5% Polyglyceryl-3-Polyricinoleate, 0.5% Sodium benzoate/Sodium Sorbate, 5% Glycerin, 1.5% Magnessium sulfate anhydrous, 60.43% water, 0,07% citric acid

What type of products does liquid shea enable?

Minimalistic formulations

By combining liquid and solid shea butter you can create a broad range of consistencies with one INCI



The graph shows how you can obtain very different consistencies using LIPEX® SheaSoft TR™ and LIPEX® SheaLiquid TR™ at different ratios, which you can leverage to obtain your desired end formulation.

Check out how solid & liquid shea can be combined to obtain very different formulations

- Elegant Eldeberry conditioning lip gloss
- La vie en rose lipstick

AAK-23-005 Elegant Elderberry Conditioning Lip Gloss

Product	Manufacturer	INCI Name	w/w
Phase A			
LIPEX® SheaLiquid TR™	AAK Sweden	Butyrospermum Parkii Butter, Butyrospermum parkii (Shea) butter	72.70
Elderberry Red Powder Color Dispersible	EPC Natural Products Co Ltd.	Sambucus Nigra Fruit Extract, Citric Acid, Distarch Phosphate, Water	0.50
Phase B			
Akofine R™	AAK Sweden	Hydrogenated Vegetable Oil	6.00
LIPEX® SheaSoft TR™	AAK Sweden	Butyrospermum Parkii Butter, Butyrospermum parkii (Shea) butter	20.00
Phase C			
Forest Fruit Lip 9718/21	Vioryl	Flavor	0.80

Based on fully traceable, climate-neutral shea emollients and a natural colorant derived from juicy elderberry fruits, this minimal 3-in-1 formulation delivers a hint of color, a hi-gloss finish, and rich moisturizing benefits, leaving lips looking luscious, smooth, and hydrated.

- **LIPEX® SheaSoft TR™** Our climate-neutral, fully traceable semi-solid shea butter has a creamy texture, slow-melting profile, rapid crystallization, and proven moisturizing benefits. Here it strengthens the protective lipid barrier and gives a soft, creamy texture.
- **LIPEX® SheaLiquid TR™** our climate-compensated fully traceable liquid butter is used as a solvent for the butters, to achieve the desired semi-fluid texture.
- **Akofine R** adds texture and helps stabilize the oil phase.

La vie en Rose Creamy Matte Lipstick

This long-wear lipstick

- delivers a perfect matt finish
- and supreme comfort, thanks to the nourishing benefits of a duo of highly moisturizing shea-based emollients.
- It’s the ideal solution to mastering a bold matt look while simultaneously keeping lips in beautiful mint condition!

Directions for use: apply the lipstick working outwards from the cupid's bow directly from the bullet or with a lip brush. For a super smooth finish, exfoliate the lips before application. And check out our complimentary lip scrub formulations for inspiration.

AAK-23-007 La Vie En Rose Creamy Matte Lipstick

Product	Manufacturer	INCI Name	w/w
Phase A			
Akofine R™	AAK Sweden	Hydrogenated Vegetable Oil	2.00
LIPEX® SheaLiquid TR™	AAK Sweden	Butyrospermum Parkii Butter, Butyrospermum parkii (Shea) butter	5.00
LIPEX® SheaSoft TR™	AAK Sweden	Butyrospermum Parkii Butter, Butyrospermum parkii (Shea) butter	44.00
Akoline PGPR	AAK Sweden	Polyglyceryl-3 Polyricinoleate	1.00
NF White Beeswax	Koster Keunen	Cera Alba (Beeswax)	8.50
Sunflower Wax	Koster Keunen	Helianthus Annuus (Sunflower) Seed Wax	5.50
Phase B			
Silica	The Innovation Company	Silica	8.50
Phase C			
Red 7 Dispersion in LIPEX® SheaSolve™	AAK Sweden/Making Cosmetics	Shea Butter Ethyl Esters, CI 15850 (red no. 7 D&C lake), Hydrogenated Vegetable Oil	8.33
Red 28 Dispersion in LIPEX® SheaSolve™	AAK Sweden/Making Cosmetics	Shea Butter Ethyl Esters, CI 45410 (red no. 28 D&C lake), Hydrogenated Vegetable Oil	8.33
Yellow 5 Dispersion in LIPEX® SheaSolve™	AAK Sweden/Making Cosmetics	Shea Butter Ethyl Esters, CI 19140 (yellow no. 5 FD&C lake), Hydrogenated Vegetable Oil	8.34
Dermofeel Toco 70 non GMO	Evonik	Tocopherol, Helianthus Annuus Oil	0.50

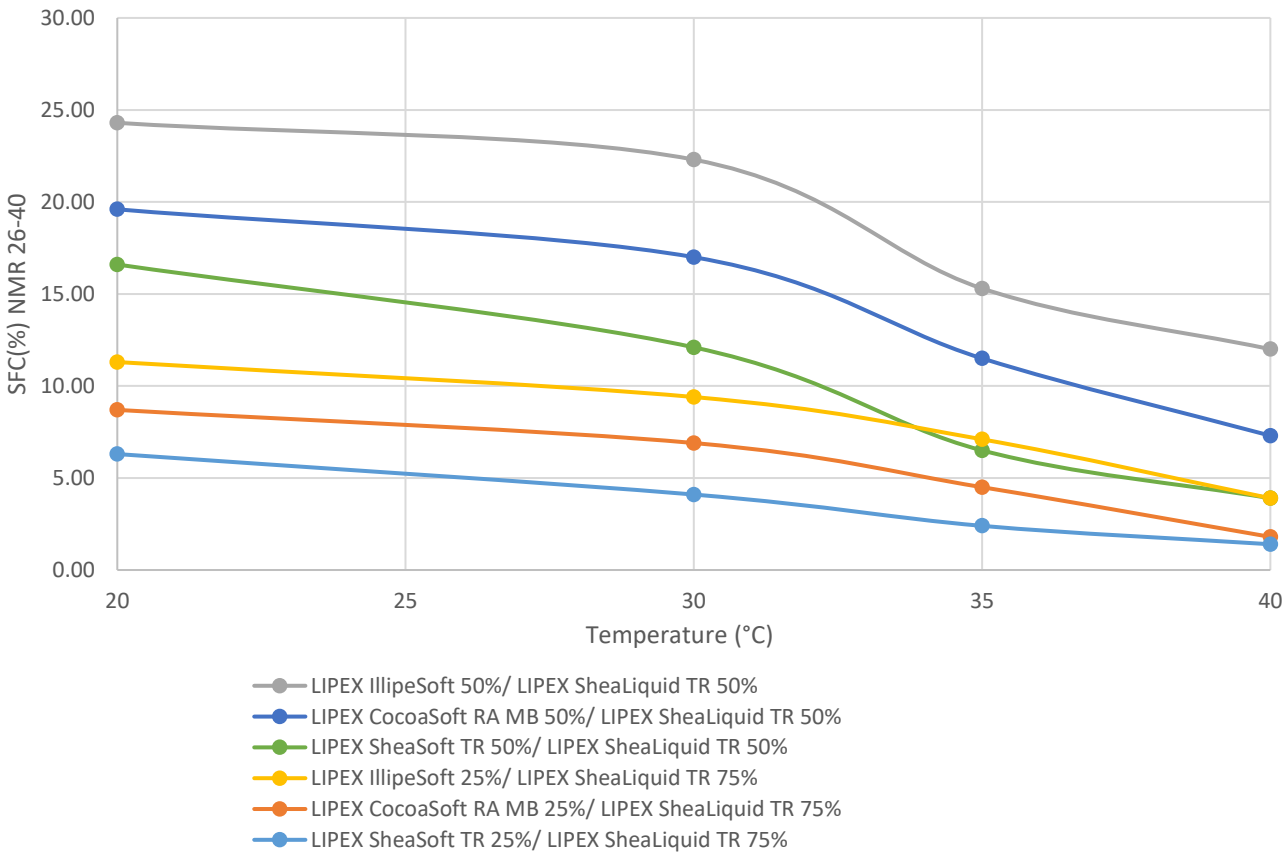
- LIPEX® SheaLiquid TR™ and LIPEX® SheaSoft TR™ – Our two climate-neutral, fully traceable shea-based emollients help deliver the creamy texture, high stability and rich moisturizing benefits that help counteract the drying effect of the pigments and silica.
- LIPEX® SheaSolve™ – Our eco-friendly shea-derived emollient ester provides optimal pigment dispersion and wetting, creating low viscosity and homogeneous dispersions. In the final formulation, Lipex SheaSolve helps deliver a more consistent color, a higher color payoff, and an overall lighter skin feel.

What type of products does liquid shea enable?

Playful textures

And combining with AAK's soft technology range butters you can expand the playing field even further

Solid fat curves of different blends of LIPEX® SheaSoft TR, LIPEX® CocoaSoft RA MB, LIPEX® IllipeSoft and LIPEX® SheaLiquid TR



The graph shows how combining solid and liquid butters you are able to obtain a broad range of textures and consistencies

Check out how solid butters & liquid shea can be combined to obtain very different formulations

- Squeeze me jelly lip balm
- Matte Shield Lip Balm Stick

Liquid shea enables the formulations of a broad range of products based on exotic plant-based butters that provide new storytelling opportunitties

LIPEX® IllipeSoft™ as a key structuring agent

- The fast crystallization of LIPEX® IllipeSoft™ generates a homogeneous network of small crystals that provides structure to the formulation and avoids bloom formation.
- In our Matte shield lip balm stick we have put LIPEX® IllipeSoft™ to the test, by creating a minimalistic stick formulation where LIPEX® IllipeSoft™ is the main structuring agent
- In more complex formulations, LIPEX® IllipeSoft™ can be the perfect partner for your wax of choice to obtain sticks with the different hardness and payoffs – check our Skin Longevity Foundation Stick for inspiration!

Matte Shield Lip Balm Stick

This wax-free, vegan formula is created with just three plant-based ingredients to provide instant comfort and hydration without shine. It acts as an invisible, weightless lip protector suitable for all ages and genders while also creating a smooth, matte base for lip color. Infused with a bioactive shea emollient, it strengthens the protective lipid barrier, helping to lock in moisture and shield against environmental stressors that cause dryness and cracking.

Natural Origin Index: 100%

Product	Manufacturer	INCI NAME	% w/w
Phase A			
LIPEX® IllipeSoft™	AAK Sweden	Shorea Stenoptera Seed Butter	74
LIPEX® SheaLiquid TR™	AAK Sweden	Butyrospermum parkii Butter	25.5
LIPEX® SheaTris™	AAK Sweden	Butyrospermum parkii Butter Extract	0.5

Squeeze Me Jelly Lip Balm

Product	Manufacturer	INCI NAME	% w/w
Phase A			
LIPEX® IllipeSoft	AAK Sweden	Shorea Stenoptera Seed Butter	30.0
LIPEX® SheaLiquid TR	AAK Sweden	Butyrospermum parkii Butter	68.35
Akofine R	AAK Sweden	Hydrogenated Vegetable Oil	1.15
Phase B			
PEACH 20302-C/31	Vioryl	Flavor	0.5

- Using very similar ingredient than in AAK's Matte Shield lip balm stick, but changing the ratio, you can obtain an anhydrous formulation with a completely different consistency. Here LIPEX IllipeSoft is responsible for the structure also – but instead of a stick, a squeezable jelly balm, is obtained.
- easy-to-squeeze tube, this vegan-friendly lip balm is formulated with a trio of plant-based ingredients to hydrate, nourish, and soothe. But that's not all! Upon application, its gel-like texture melts effortlessly, leaving lips with a soft, healthy, and naturally enhanced sheen - simple effectiveness at its best.

Natural Origin Index: 100%

Which efficiencies does liquid shea enable?

Time saving

Energy saving

Ease of handling

Equivalent end product

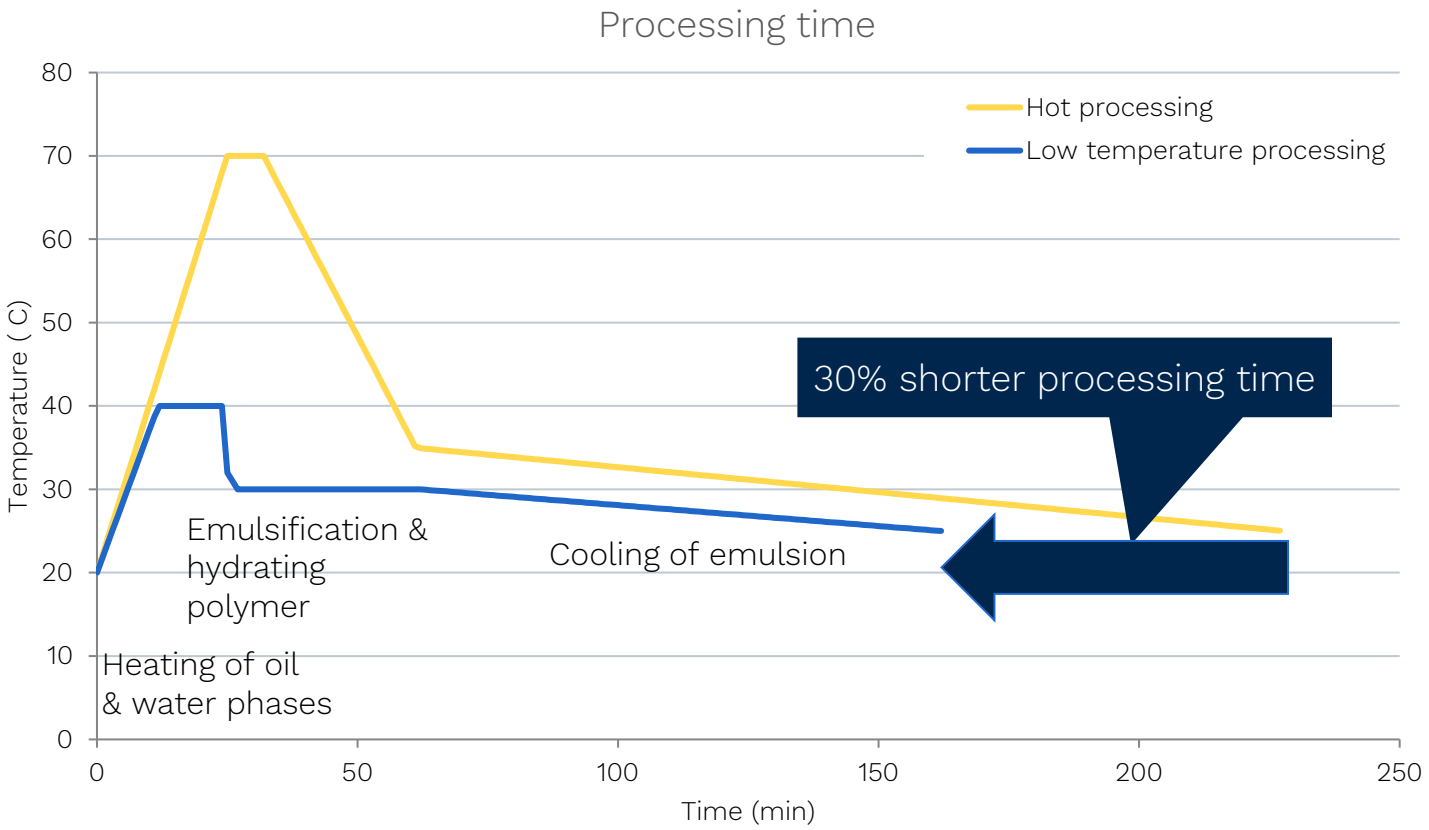
Which efficiencies does liquid shea enable?

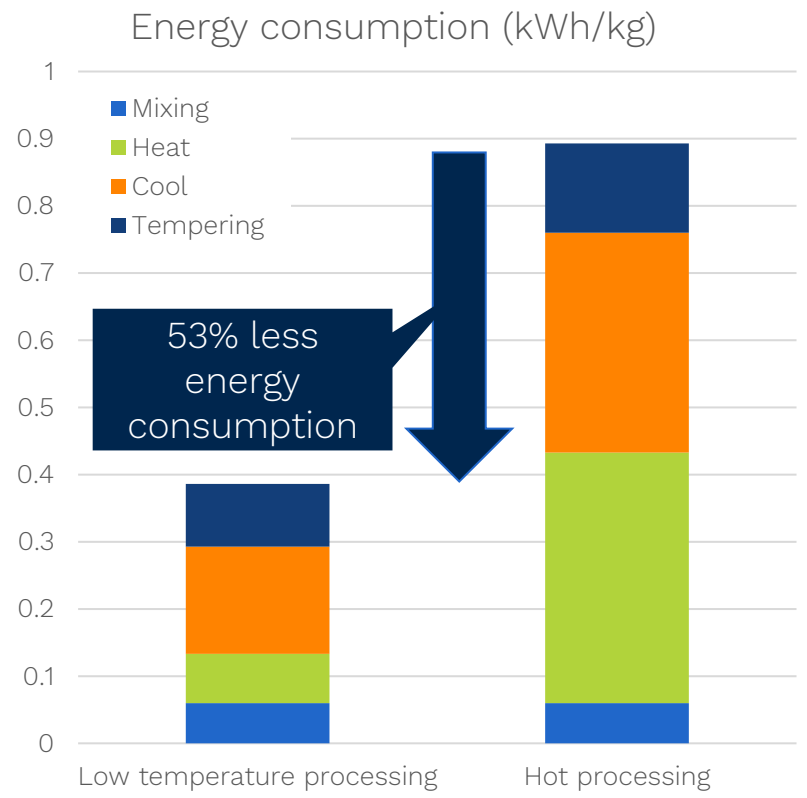
Time saving

Energy saving

Low temperature processing saves energy and time

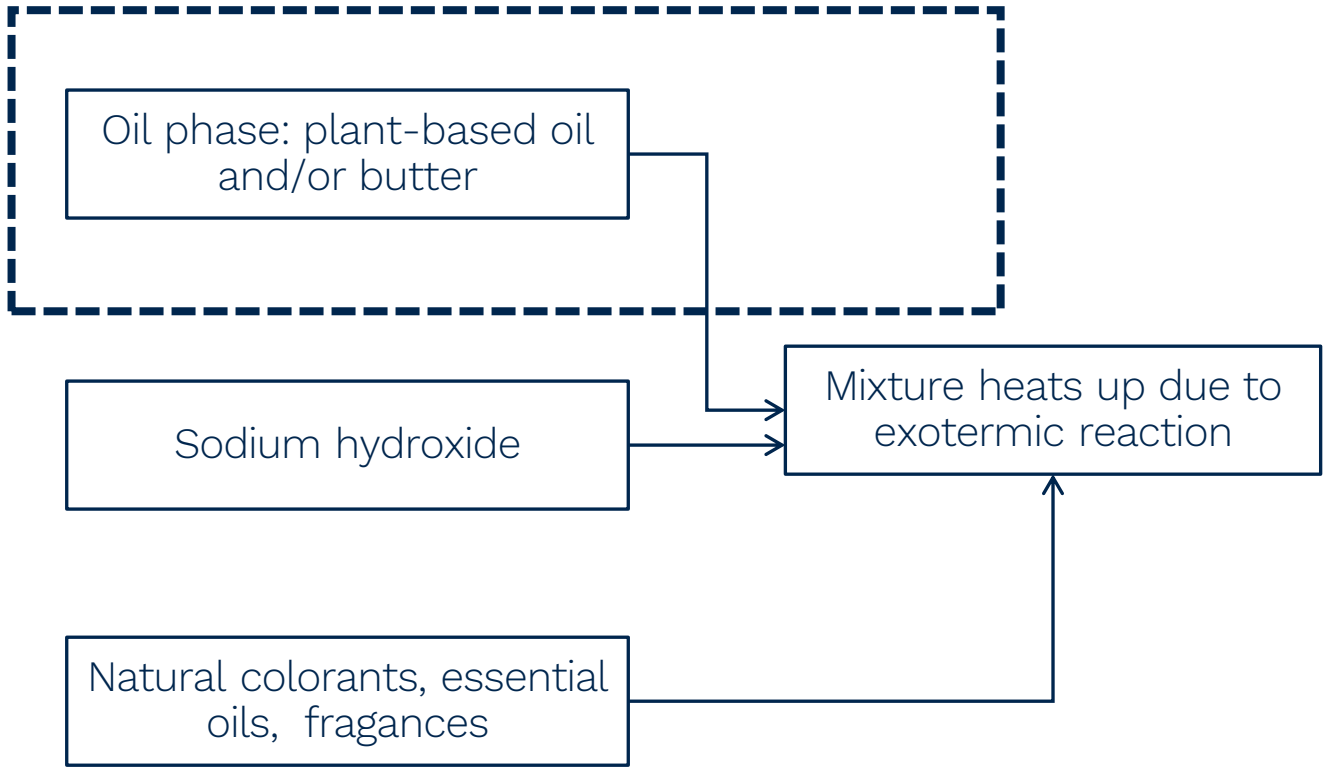
Lab trial comparing hot processing of solid shea vs low temperature processing using liquid shea.





Recipee: 77.4% water, 1.1% preservative, 3.0% glycerin, 4.5% canola oil, 4.5 isopropyl palmitate, 6.0% butyrospermum parkii butter, 2.8% trilaureth-4 phosphate, 0.7% Aristoflex AVC. pH 5,5
For information on this test, check our document: Time and energy saving liquid shea

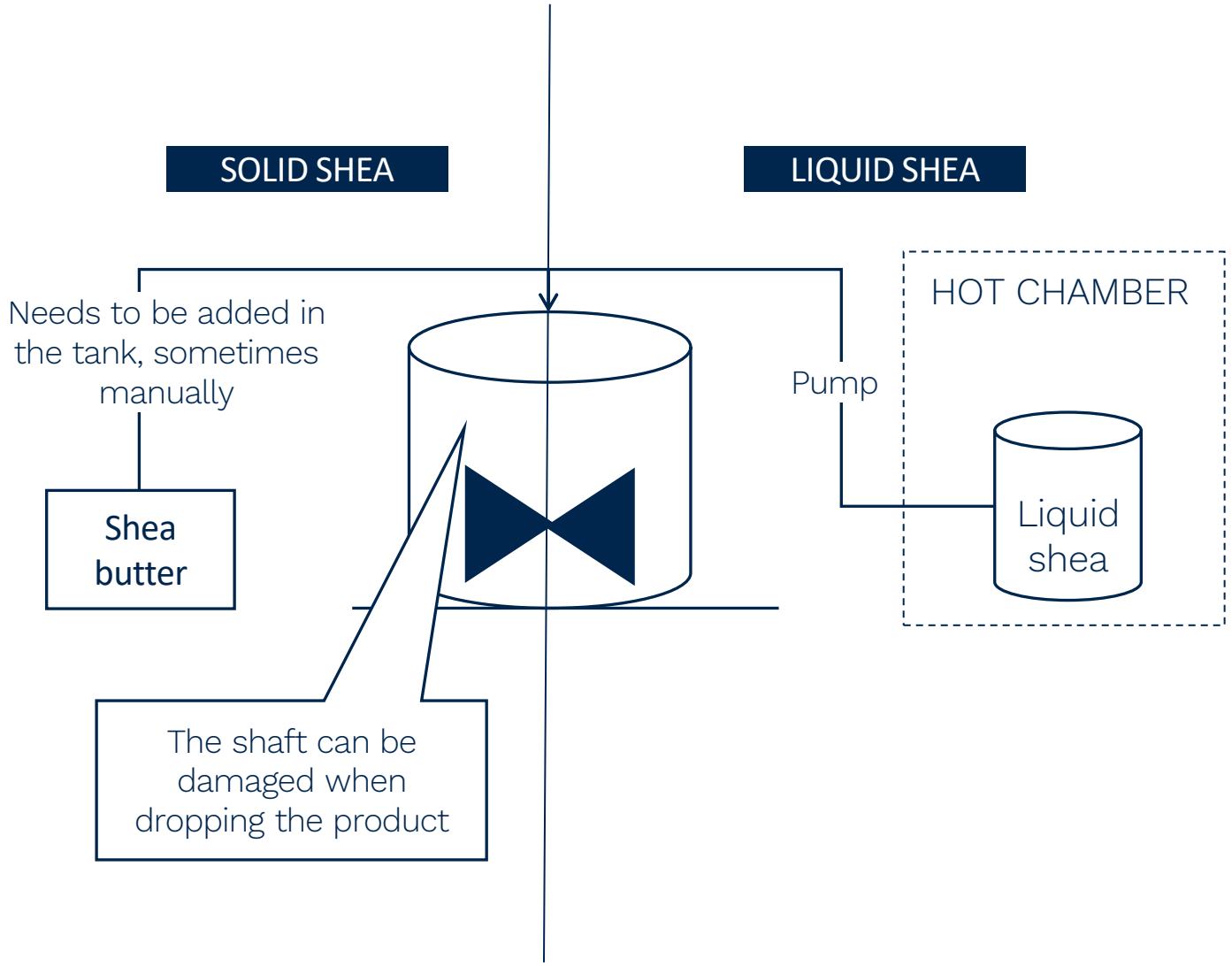
In soap production, a solid butter/oil can be the only ingredient that requires heating



Which efficiencies does liquid shea enable?

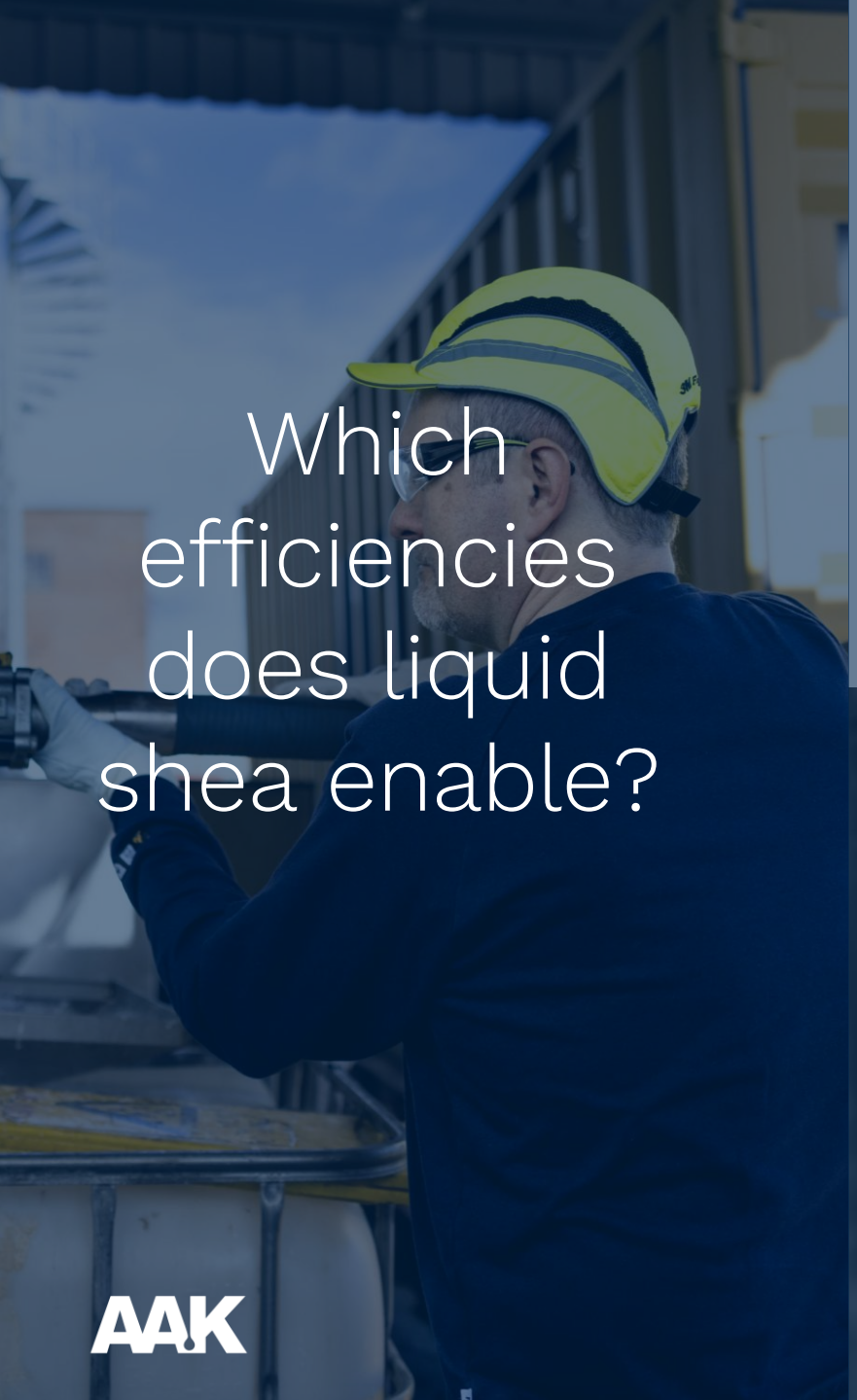
Ease of handling

Liquid shea can ease handling in production



Liquid shea can enable, under certain circumstances, easier handling:

- Solid butters can't be pumped, and need to be added into the tank, sometimes manually.
- When added, they can damage the shaft.
- Liquid butters can be directly pumped after heating them in a hot chamber.



Which efficiencies does liquid shea enable?

Equivalent end product

The mentioned efficiencies can be achieved while maintaining a similar sensory in formulation

- We have validated that you can achieve a oil-in-water emulsion with a concentration up to 6%of shea butter / liquid shea butter without perceiving a significant difference

2 out of 3
can't tell the difference

- Results are supported by our Sensory Evaluation Challenge where participants must identify the odd one out of three body lotions.
- The only difference between them is the shea ingredient used: a refined solid shea butter or LIPEX® SheaLiquid TR™

Recipe: 77.4% water, 1.1% preservative, 3.0% glycerin, 4.5% canola oil, 4.5 isopropyl palmitate, 6.0% butyrospermum parkii butter, 2.8% trilaureth-4 phosphate, 0.7% Aristoflex AVC. pH 5,5

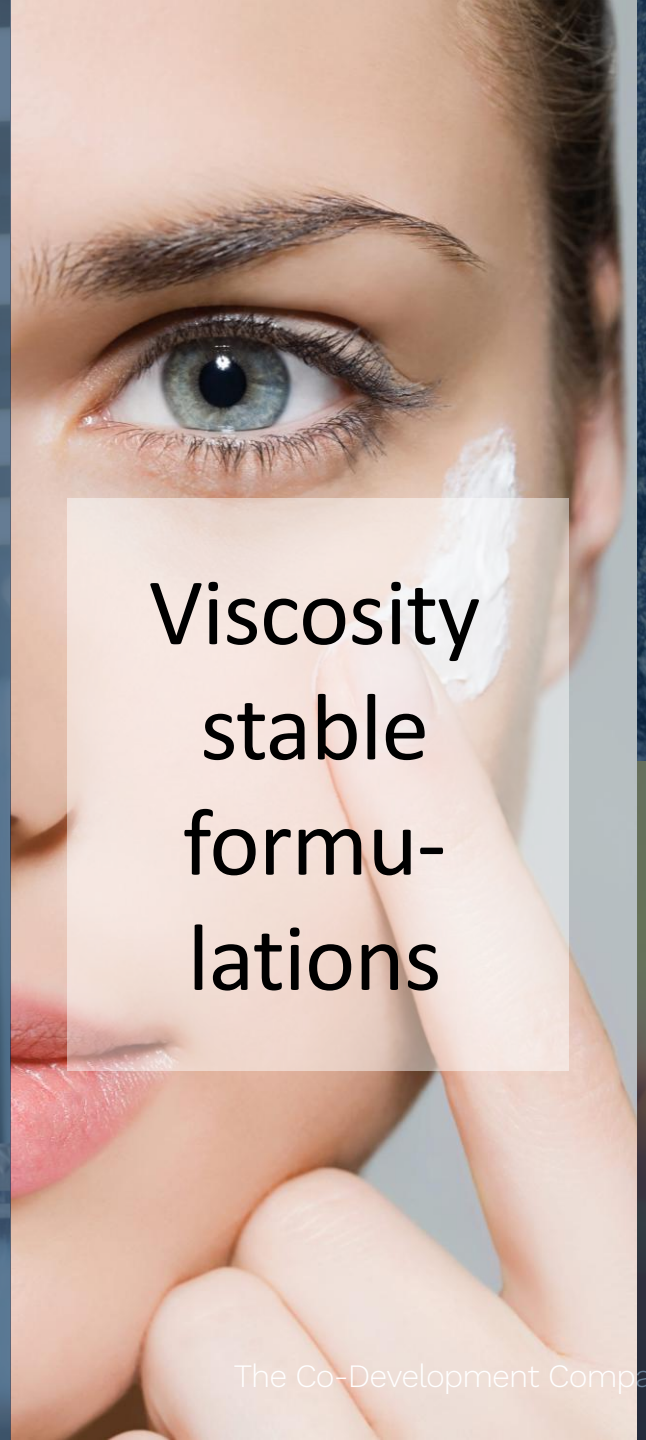
How does liquid shea make formulating worry free?

Viscosity stable formulations

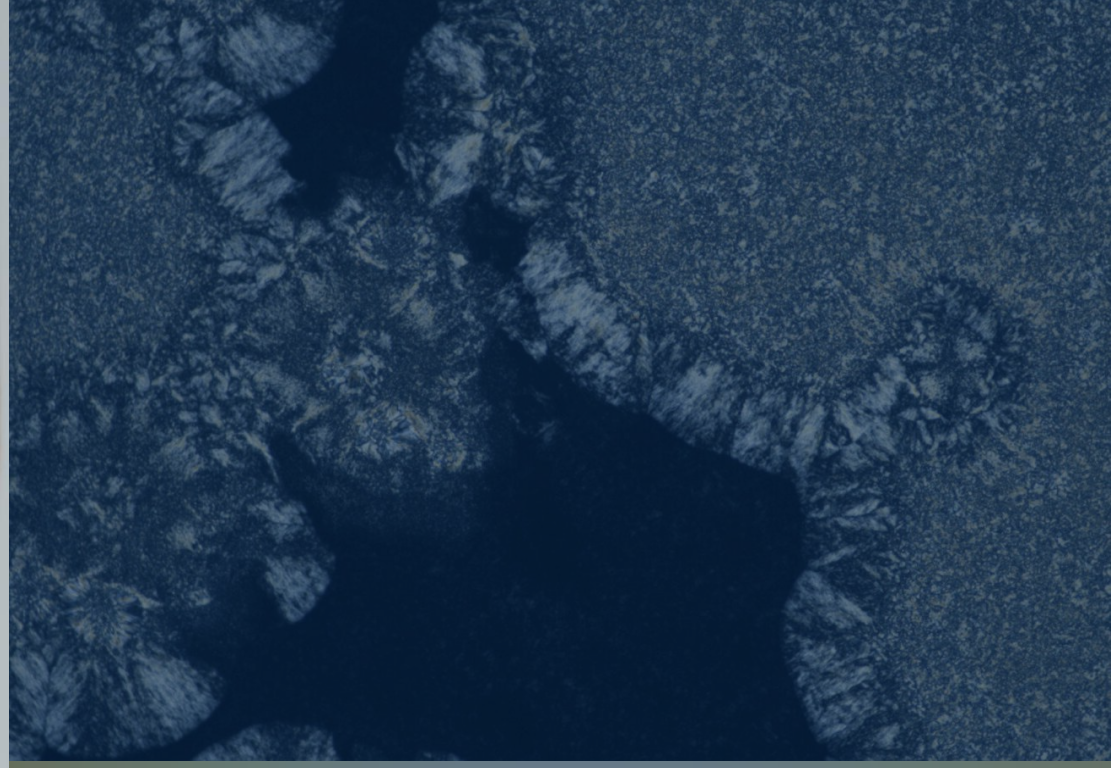
No crystalization issues

Avoid incompatibilities

How does liquid shea make formulating worry free?



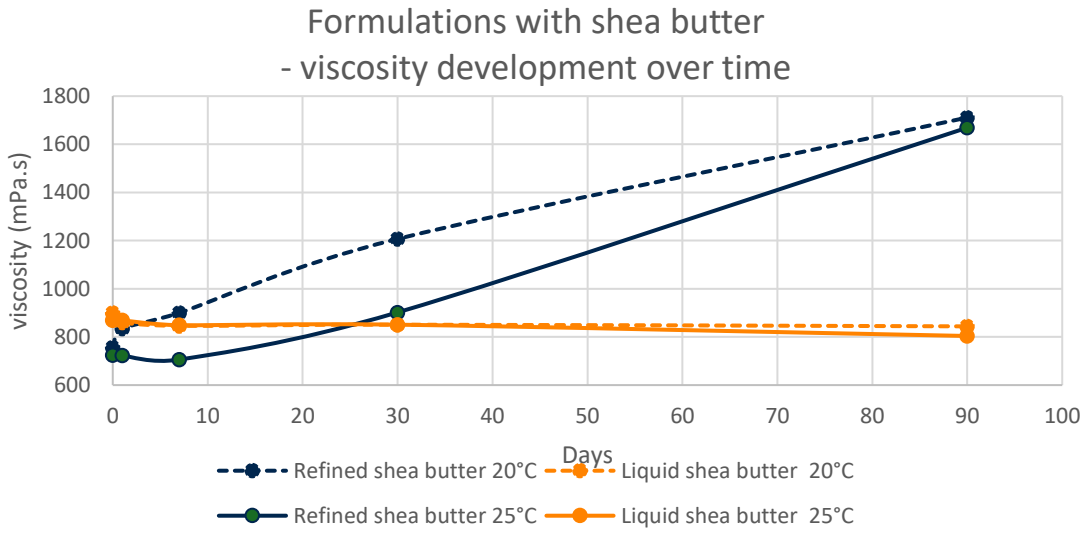
Viscosity stable formu-lations



Liquid shea enables the production of formulations with a stable viscosity over time

Considering viscosity in cosmetic formulations is key:

- **Consistent Quality:** A product that maintains its viscosity over time ensures that each use feels the same. This consistency is key to customer satisfaction and trust in the product.
- **Long Shelf Life:** Products that keep their viscosity are less likely to separate or degrade, making them last longer on store shelves and in consumers' homes.
- **Packaging Compatibility:** Consistent viscosity helps in choosing the right packaging. If a product changes thickness, it might not come out of its container properly.



Oil-in-water formulations with 14% different emollients used in the oil phase were stored at 20°C and 25°C for the period of 3 months. Viscosity & stability were observed at different times.

LIPEX® SheaLiquid TR™ showed constant viscosity in the formulation over time, while the viscosity of the formulation with refined shea butter increased continuously during the same period – but with a significantly different development at 20°C and 25°C, making it quite unpredictable.

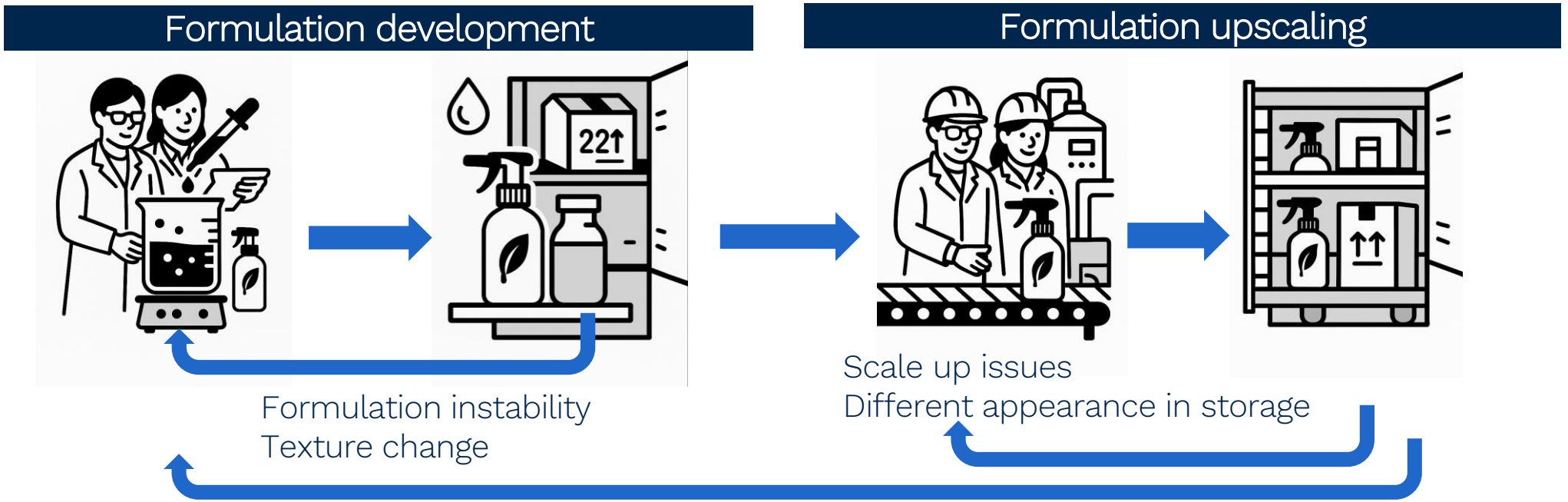
Impact of crystallization on viscosity and droplet size development

Viscosity control: Why it matters

Unpredictable viscosity leads to poor product experience and packaging issues

- **Consistent Quality:** Stable viscosity = same feel every time. Key for consumer satisfaction
- **Long Shelf Life:** Stable viscosity = less likelihood of separation or degradation.
- **Packaging Compatibility**: Ensures smooth dispensing

Formulations with stable viscosity over time ease up formulation and upscaling process

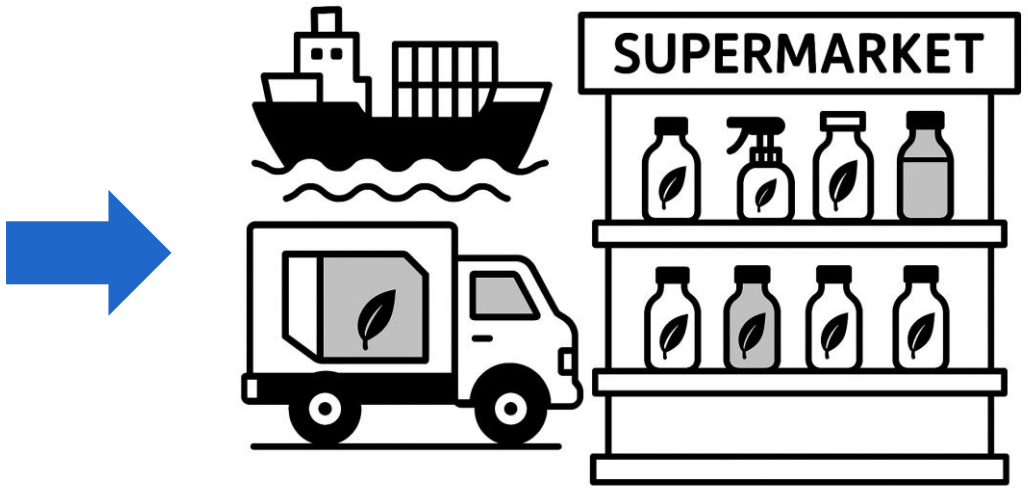


- A formulation with evolving viscosity might, after storage, no longer have the desired feel or consistency & cause packaging incompatibility.
- Products that keep their viscosity are also less likely to separate or degrade.

- During scale up, crystallization is often more complex that in the lab – phenomenon related to it (like viscosity changes) will be accentuated.
- Warehouse storage might involve different temperatures that those tested in stability, so temperature sensitive formulations will suffer.
- Formulations where viscosity develops over a long period of time, and depends highly on temperature, will require to be stored in control temperature storage over the time needed to reach a stable state

If a formulation hasn't reached a stable viscosity when leaving the manufacturers facilities, it risks disappointing consumers

Transportation & storage in retail space



- Once the cosmetic product leaves the cosmetic manufacturer's facilities – it can be subject to changing temperatures during transportation & storage in the shop

Consumer handling & storage

- After purchase, consumers will subject cosmetic products to changing temperatures depending on the moment and the use of the product.

- If the formulation has not reached a stable crystal form when leaving the cosmetic manufacturers facilities, and its viscosity evolves unpredictably with temperature – cosmetic manufacturers risk that when consumers use it, it no longer has the desired appearance or texture.

Impact of crystallization on viscosity and droplet size development

BACKGROUND

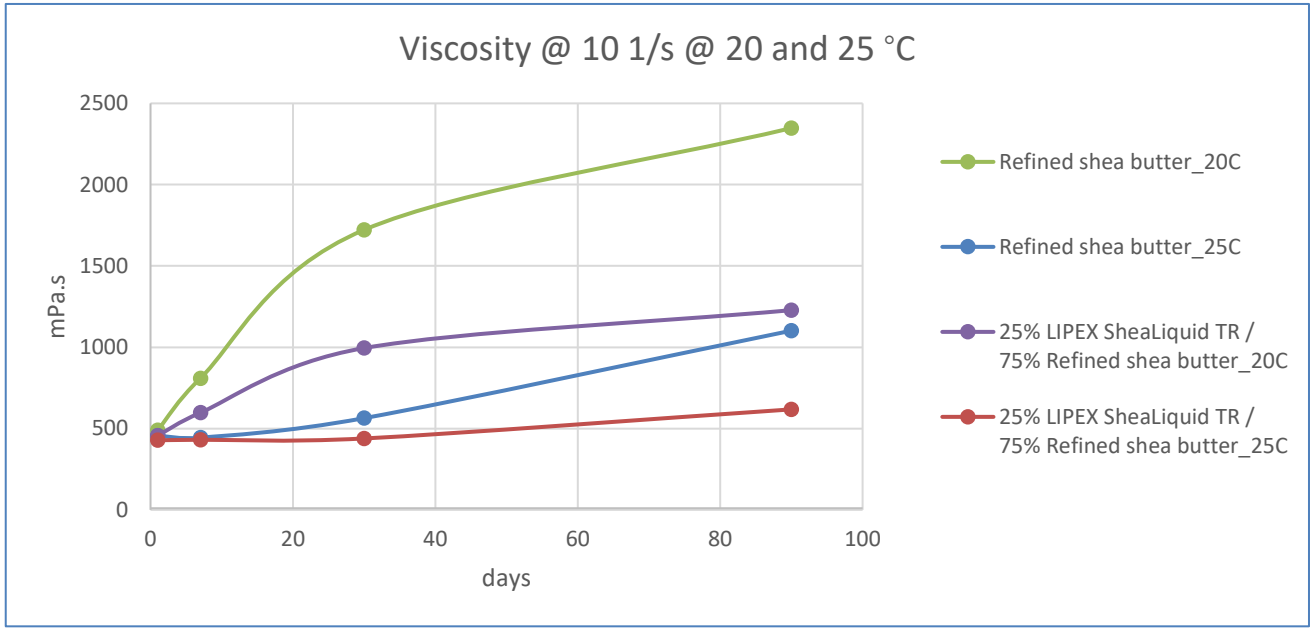
- Liquid shea, differently than refined shea butter, does not crystallize at room temperature. Changes in formulation linked to an evolving crystallization (like viscosity development) will not happen with liquid shea.

WHAT HAVE WE DONE?

- We have conducted a comparison study to examine the development of viscosity over time of O/W emulsions with standard refined shea butter and liquid shea.
- Formulations: Oil-in-water formulations with 14% of oil phase containing refined shea butter, liquid shea or a mix of both.
- Storage temperature: 20 & 25°C
- Measurements: viscosity, droplet size and XRD (polymorphic form) at time zero, 1 day, 1 week, 1 month and 3 months

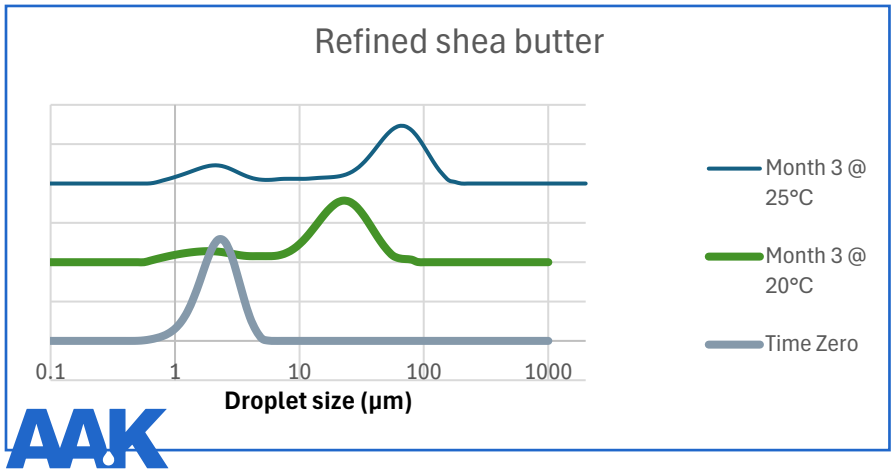
Read more about the test and results in this article: AAK Nov 2025 PCM (low res).pdf

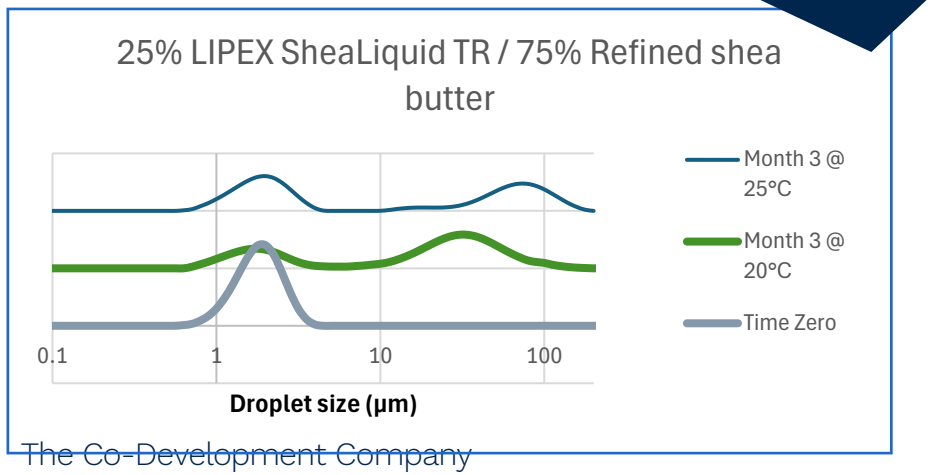
With refined shea butter, droplet size distribution and viscosity develop over time – with high dependance on temperature



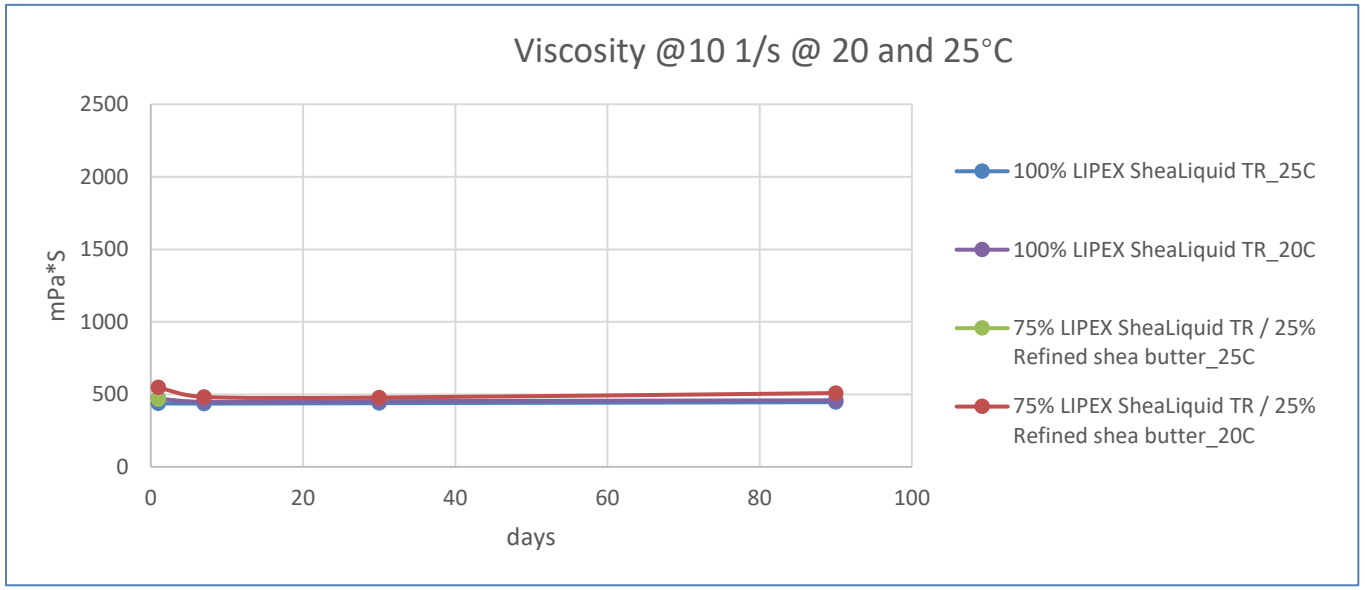
- The formulations show droplet size distribution and viscosity development over the three months. The change is highly dependent on temperature.
- To ensure consistent appearance, very controlled temperature storage will be needed after production, until a stable state is reached.
- None of the samples has reached stable β form after 3 months

Crystallization correlates with increased droplet size and agregates

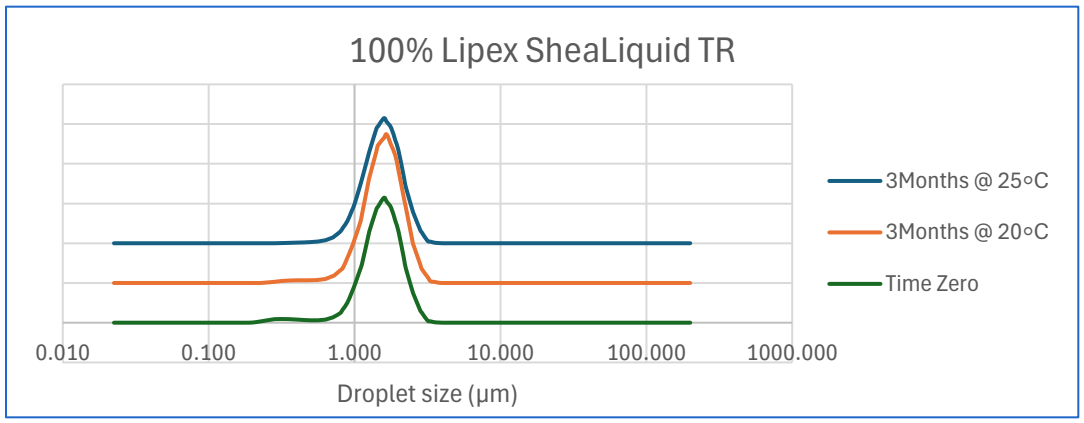


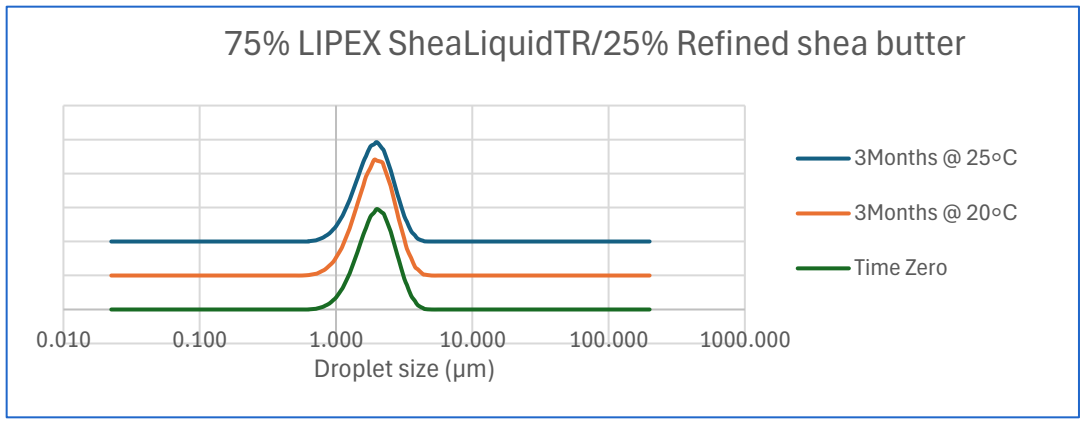


With liquid shea butter, droplet size distribution and viscosity stay constant with time – regardless of temperature



- The formulations show no signs of droplet size distribution and viscosity development over the three months.
- This indicates a lower need for controlled storage conditions and shorter storage in the warehouse needed, as well as less risk of undesired consistency at end consumer.
- The above also indicates a lower likelihood of separation or degradation due to changes in formulation





The formulation with refined shea butter is significantly more sensitive to post-processing parameters

O/W Emulsions after one year of storage depending on whether the oil phase is 100% refined shea butter or 100% liquid shea (*)

This indicates:

- A reduced risk of instabilities and consistency issues during development and production
- A lower need for controlled storage conditions after production
- A reduced risk of consumers dissatisfaction due to undesired consistency

(*) Both samples are stored at 20°C after 3 months of storage

Causes of Bloom in Shea Butter

Polymorphism

- **Standard refined shea butter** is primarily comprised of **symmetrical triglycerides**
- Symmetrical triglycerides are **slow** to nucleate new crystals, which can lead to fewer but **larger crystals**.
- They also reach the **stable crystal form at a slower rate**. Which makes standard refined shea butter highly sensitive to temperature fluctuations – where unstable crystals will **melt and recrystallize** in bigger, stable, crystals leading to the formation of bloom

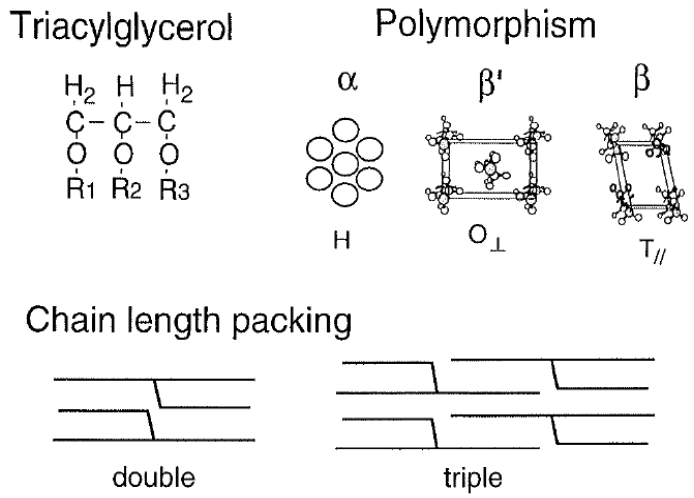


Fig. 1. Molecular properties of fat polymorphism.

Incompatibilities

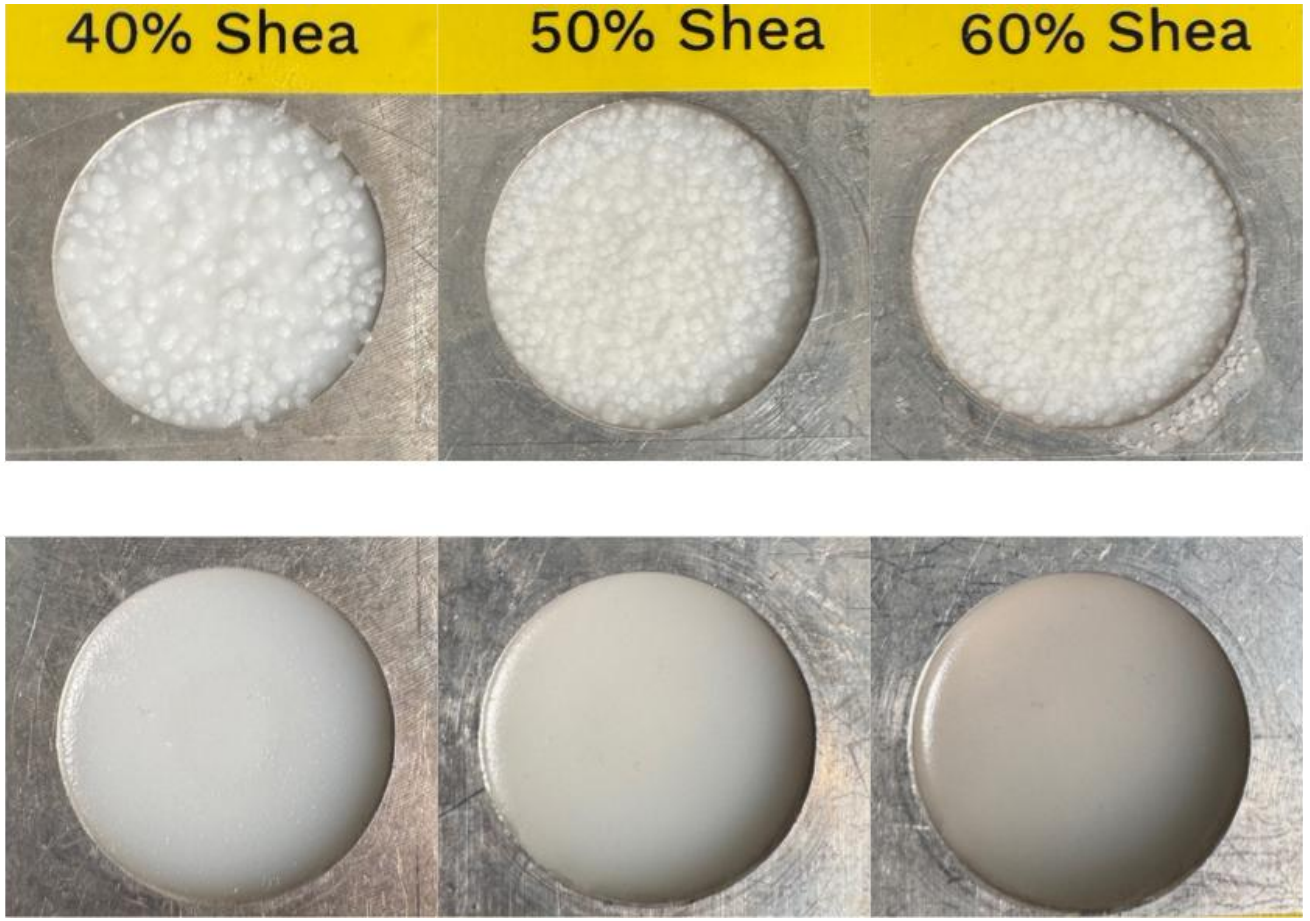
- Triglycerides that are too dissimilar (different fatty acid chain lengths!) **do not mix well** in the solid state.
- Large chains don't want to **integrate** in the short chain crystal structure and vice versa
- **Shea butter**, is primarily composed of **long chains (C16/C18).** Formulating with short chains can lead to incompatibilities, especially when one of the fractions is not the dominant.

Short Chain (C12/C14)

Coconut oil
Palm kernel oil
Hydrogenated coconut oil
Murumuru butter
Babassu oil

Liquid Shea can be Combined with Hydrogenated Coconut Oil without Incompatibility Issues!

- Blends of **hydrogenated coconut butter** and **shea butter (standard or Lipex 205)** were prepared at different ratios.
- Samples were exposed to **alternating temperatures** of 20°C and 30°C (12h cycles) for 4 weeks.
- **Lipex 205** blends showed **no incompatibilities** at any ratio.
- **Refined shea butter** resulted in **bloom** at 40%-70/80% concentrations
- Additional photos can be found at the end of the presentation

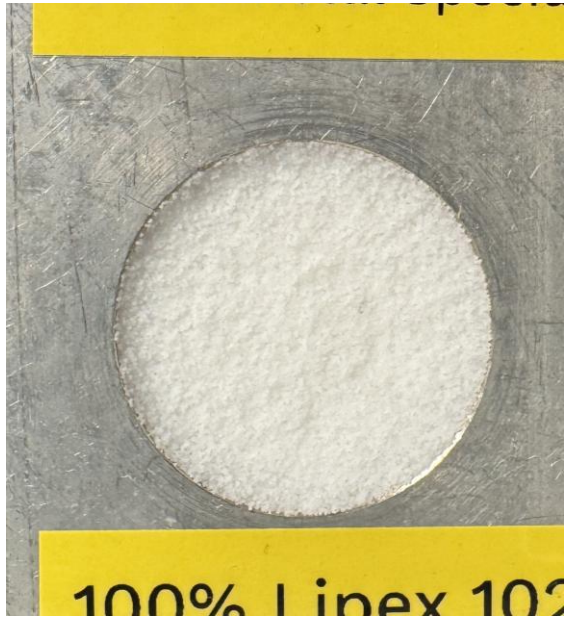


Other formulations available in the library with liquid shea

Formulations part of the formulation library 2025/2026

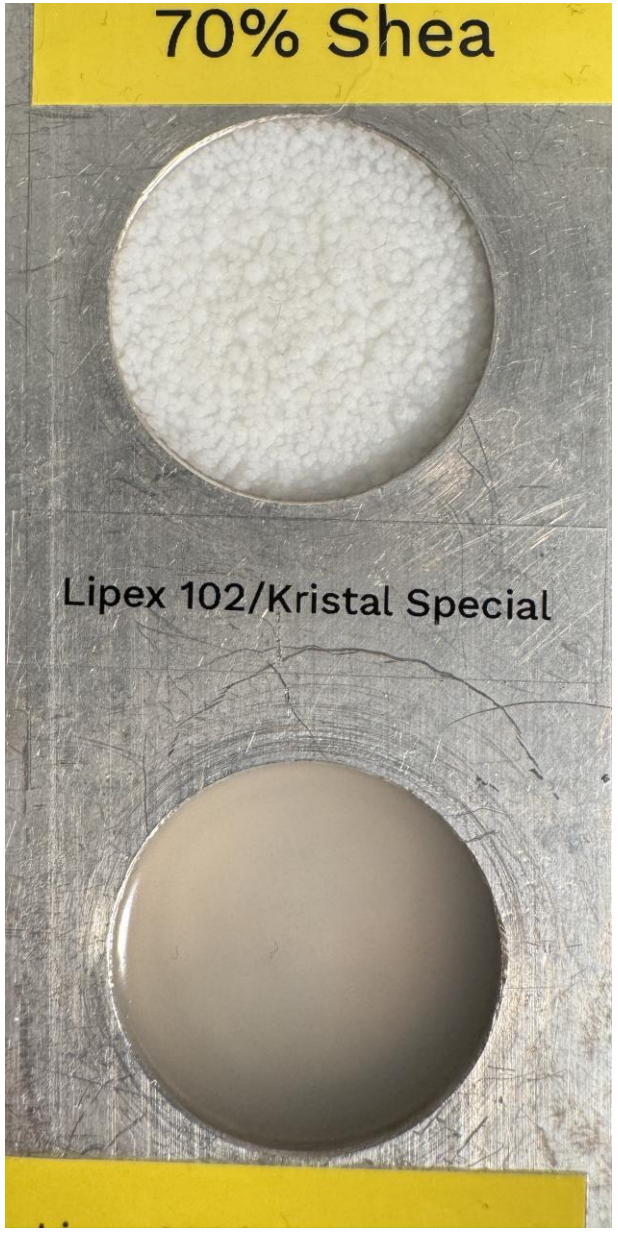
- Mallow Whip Curl Mousse (LIPEX® SheaLiquid TR™)
- Sleek and Wet Glam Gelée (LIPEX® SheaClear™)
- Future Perfect Eye Gel Cream (LIPEX® SheaLiquid TR™)

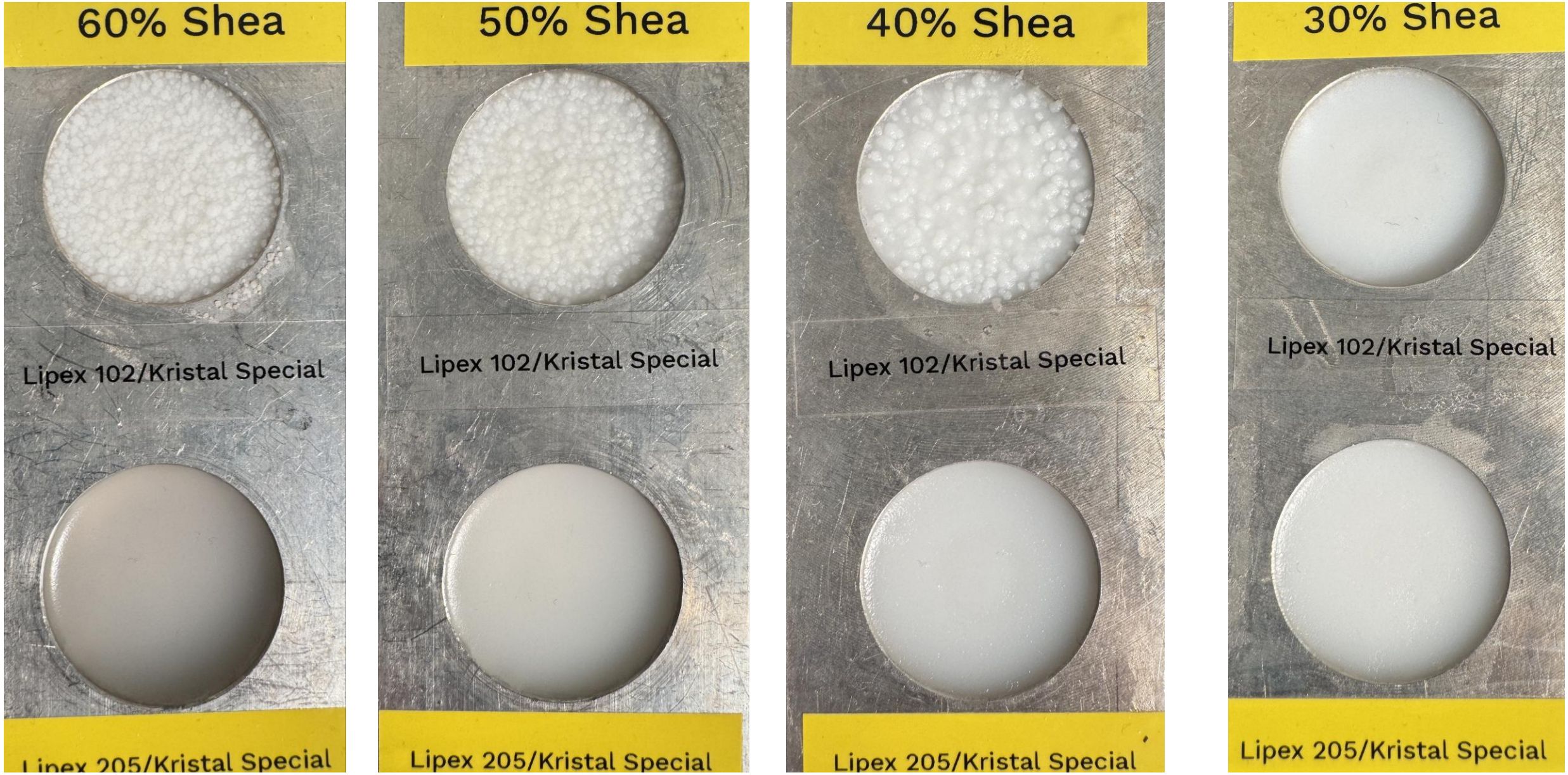
Extra Shea Pictures


100% Lipex 102


90% Shea
lipex 102/kristal specia


80% Shea
Lipex 102/Kristal Special
Lipex 205/Kristal Special


70% Shea
Lipex 102/Kristal Special


60% Shea
Lipex 102/Kristal Special
Lipex 205/Kristal Special
50% Shea
Lipex 102/Kristal Special
Lipex 205/Kristal Special
40% Shea
Lipex 102/Kristal Special
Lipex 205/Kristal Special
30% Shea
Lipex 102/Kristal Special
Lipex 205/Kristal Special


20% Shea
Lipex 102/Kristal Special


10% Shea
Lipex 102/Kristal Special
Lipex 205/Kristal Special


100% Kristal Special


Thank you!