



# ARTFUL TEASING

P E T W O R T H

## Artful Teasing Guide to the Benefits of Shea Butter

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## Artful Teasing Guide to Shea Butter

### Introduction

Shea butter is one of the most natural and one of the most genuinely effective of materials used in cosmetic products. Even though it has been used for a very long time, its benefits are still not as well known as they really deserve to be.



Shea nuts and some unripe shea fruit

### What is Shea Butter?

Shea butter is one of the few widely available cosmetic raw materials that comes directly from nature. It isn't cultivated - it is gathered from trees that grow wild. The shea tree grows wild across a large swathe of central Africa to the south of the Sahara desert.

The butter is extracted from nuts which are traditionally gathered by the women of the village. Production of the butter itself is a sophisticated process. The outer pulp needs to be removed and then the nut is shelled using a mortar and pestle. The shelled nuts are then roasted. The butter can now be extracted by grinding or pressing.



Shea trees growing wild in Ghana

## Artful Teasing Guide to Shea Butter

### Traditional Uses

Shea butter used to be a staple of the African domestic economy, and still is in many places. Its main use was for cooking but it had a wide range of other uses including conditioning drumskins. It was used as a skin moisturiser. Near the Equator the Sun's rays are intense and the skin needs all the help it can get to protect it.

### History of Shea Butter

The latin name for the shea tree is *Butyrospermum parkii* (this is the name to look out for on ingredient listings) and the first scientific description was given by the British explorer Mungo Park in 1795.



Mungo Park - First Western Description of Shea Butter

Its history of use in cosmetics goes back much further than that. It seems to have been in use in ancient Egypt. The first written description of the plant itself was by the Moroccan traveller and scholar Battuta (often spelt Batouta) in 1348.

People have been using shea butter on their skin since before the time of Cleopatra right up to the present day.

## Artful Teasing Guide to Shea Butter

### Composition of Shea Butter

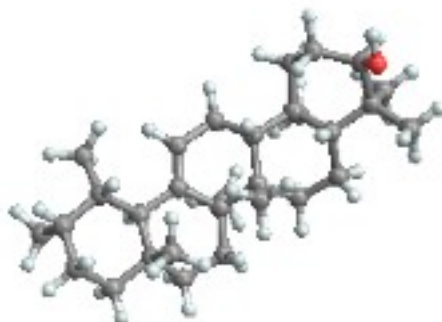
Most vegetable oils and butters have a similar basic chemistry. They are mainly composed of triglycerides. Pick up a bottle of a typical refined cooking oil, sunflower oil say, and what you are looking at is almost pure triglyceride. Triglycerides have many interesting properties one of which is that you can make soap out of them. The triglyceride fraction of a vegetable is sometimes referred to as the saponifiable fraction.

Triglycerides are pretty similar chemically most of the time regardless of their vegetable source. The character and personality of a particular vegetable oil tends to arise from the non-triglyceride elements usually present at a low level. These are referred to as the unsaponifiables because you can't make soap out of them. This rather negative designation doesn't really do justice to how interesting these trace compounds can be.

Shea butter is mainly triglycerides, just over 90%. But the unsaponifiables make up an unusually large proportion at nearly 10%. And there are some interesting components in that 10%.

Most of the unsaponifiables in shea butter are triterpenes. The terpenes are a charismatic bunch of molecules with some notable family members. Menthol, which gives your toothpaste its minty bite is one. Vanillin, the flavour in ice cream, is another. The main terpene in shea butter is the triterpene alpha- amyryl.

It has a particularly beautiful structure but if you aren't a chemist you'll probably have to take my word for it. Other triterpene components include beta-amyryl, lupeol, parkeol and butryospermol. More on these later.



Alpha-Amyryl - a beautiful triterpene

It also contains karitene, a high level of sterols and some anti-oxidant tocopherols.

This is a very rich complement of compounds which explain why shea butter is so unique.

## **Artful Teasing Guide to Shea Butter**

### **Shea Butter's Emollient Effect on Dry Skin**

One very effective way to treat dry skin - probably the most effective way for a daily skincare regime - is to simply apply a layer of some kind of oil or fat to the skin's surface to prevent moisture loss. Dermatologists and cosmetic scientists call these agents emollients. Mineral oil is the most widely used but vegetable based options like shea butter are very effective as well. The rich but highly absorbent skin feel of shea butter makes it very suitable as an emollient. This is probably the feature that makes the biggest contribution to making shea butter so popular.

The emollient effect of shea butter is not difficult to explain nor is it in any way controversial, but as it happens it has been demonstrated in some scientific studies. A trial of a cream containing 5% shea butter was shown to be beneficial in subjects suffering from eczema. In another study the degree of moisturisation of the skin was measured using conductivity measurements. An hour and a half after the application of neat shea butter the measured moisturisation was 31% higher. Even 8 hours after application the skin was still reading 20% higher than at the start of the experiment.

### **Anti-Irritant Effect**

There haven't yet been any direct studies on shea butter itself to assess whether it can combat irritants on the skin. Some work has been done on chemicals derived from shea butter showing that shea butter derivatives can reduce the redness of the skin induced by sodium lauryl sulphate. It is a shame that shea butter itself was not included in these experiments (the way the work was carried out would have made it difficult to do so) but the results are at least suggestive that shea butter might be a useful counter-irritant.

### **Protecting the Skin from UV Light Damage**

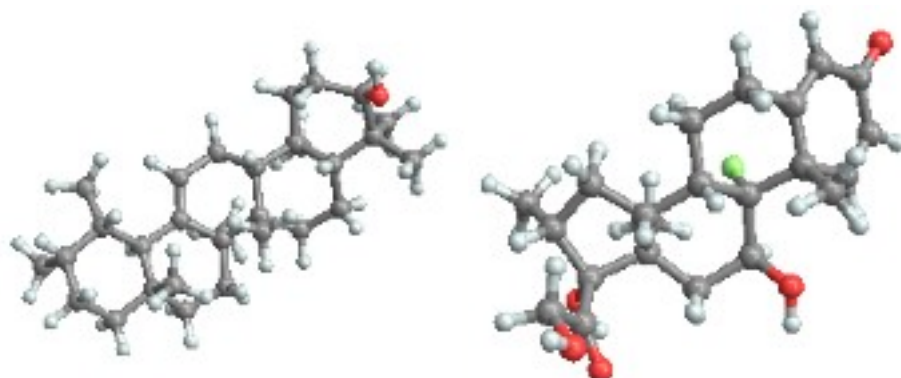
One major component of the shea butter unsaponifiables are cinnamic acid esters. These are known to have strong UV absorbing properties. In fact one of the main synthetic sunscreen agents is a member of this class of compounds. Look out for octyl methoxycinnamate on the ingredient list next time you have a bottle of sunscreen in your hand.

The UV absorbing powers of the cinnamates in shea butter are not as great as the synthetic ones, but nonetheless the effect is measurable. Neat shea butter has a sun protection factor (SPF) of 2. Most people would not consider that a very high SPF in itself, but it should allow you to stay out in the Sun twice as long as you would otherwise have been able to without suffering any ill effects. And it is worth remembering that for centuries before the synthetic chemists got onto the job of devising the most effective sunscreens, people living under the intense sunlight of Africa were routinely applying shea butter to help protect their skin from its effects.

## Artful Teasing Guide to Shea Butter

### Anti-Inflammatory Effects - Calming Redness and Itching

Some of the individual components of shea butter's unsaponifiables have been studied for their anti-inflammatory effects. One group have monitored the effect of alpha-amyrin on the inflammatory mediators in the skin. They found that it was comparable to the widely used mid-potency steroid dexamethasone. Comparing the structures of the two molecules does show that they do have some pretty strong similarities.



The alpha-amyrin is the one on the left if you can't tell the difference.

Even more intriguingly some sterols comparable to those found in shea butter have been observed reducing damage to cells in arthritis. One plausible proposal is that might suppress the breakdown of collagen. If this is the case - and the evidence is tantalising - it would not be too much of a leap to suggest that breakdown of collagen could be suppressed in the skin as well.

Lupeol is being investigated for potential anti-cancer properties.

### Anti-oxidant Tocopherols

Many vegetable oils contain tocopherols, also known as vitamin E which protect the oil itself from oxidation and have a similar beneficial effect in the skin. Shea butter is rich in tocopherols. They amount to 1% of the total quantity making it one of the most anti-oxidant rich of the vegetable oils available.

### Clinical Studies showing how Shea Butter Works

It is unusual for studies to be carried out into the effects of natural products. Trials are expensive and there isn't much financial incentive to carry out work on products that are freely available to anyone. But luckily a couple of investigations have been carried out showing shea butter to have rapid and significant effects on skin smoothness and wrinkle reduction.

## Artful Teasing Guide to Shea Butter

### Different Grades of Shea Butter

There are a number of different grades of shea butter - mainly varying in melting point for technical reasons to do with the different applications. From the point of view of the end user there isn't any difference in what the shea butter can do for your skin.

But there is one thing that is done to shea butter that does make a difference. This is hydrogenation. The hydrogenation process subjects oils to reactive hydrogen gas under high pressure in the presence of a palladium catalyst. This modifies the chemistry significantly. It makes the oil more stable and easier to handle. In the case of shea butter the hydrogenation process increases the shelf life and overcomes some processing problems - notably its tendency to produce harmless but unsightly crystals when it is melted and re-cooled.

The problem is that the hydrogenation process will also break down a lot of the unsaponifiables that give shea butter so many of its unique benefits. It also produces new chemicals that are not natural in origin. It is possible that the shape of these molecules would not be so easily incorporated into the skin's own oil content in the way that naturally occurring ones do.

There is no requirement to state on the pack whether the shea butter a particular company is using is hydrogenated or not, but all the big companies typically use hydrogenated shea butter. If they don't state which kind they use the chances are it is hydrogenated.

### Conclusion

Shea butter has a wide range of benefits to the skin that are still being uncovered. It is a natural product that can moisturise, protect and heal the skin.

### Artful Teasing Shea Butter Products

Artful Teasing have sponsored this e-book. They have a wide range of products based on ethically produced organic and non-hydrogenated shea butter.



Love your face with  
organic shea butter and  
olive oil to moisturise and protect.

[Artful Teasing Face Products](#)

## Artful Teasing Guide to Shea Butter

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More about the medieval arab traveller Battuta here

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A lot more detail about the different grades of shea butter can be found here:

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