

ABS Acai Sterols EFA



functional active botanical replacement of both petrolatum and lanolin barrier protection, intense moisturization, nourishing

BACKGROUND

Acai Palms (*Euterpe oleracea*) are native to the tropical Central and South American climates and grow from Belize to the south of Brazil and Peru in floodplains and swamps. Named after a Portuguese beverage that is made from the palm's fruit, Acai palms are capable of producing two crops of fruit per year. The small, deep purple fruit are similar in appearance to grapes, and they are considered to be rich in fatty acids such as oleic acid, palmitic acid and polyunsaturated linoleic acid.

SCIENCE

Fatty Acids consist of long hydrocarbon chains terminating in a carboxyl group that bonds to glycerol to form fat. Oleic acid is a monounsaturated omega-9 fatty acid found in olive and grape seed oils. Palmitic acid is the first fatty acid produced during lipogenesis, other fatty acids can be produced from palmitic acid. Essential Fatty Acids (EFAs) are fatty acids that cannot be synthesized by the body and therefore must be obtained via an outside source. Polyunsaturated linoleic acid is an Omega-6 EFA. Symptoms of Omega-6 deficiencies include dry hair, hair loss and poor wound healing.

BENEFITS

This super fruit ingredient can be used as a natural replacement for synthetic materials such as petrolatum and animal-derived materials, like lanolin. **ABS Acai Sterols EFA** is capable of increasing moisture levels on the skin while enhancing the skin's barrier function to protect against environmental stress responsible for extrinsic aging.

As we know, many of the oils extracted from acai are beneficial skin and hair care ingredients. The combined benefits, compliments of acai's essential fatty acid content and known nourishing properties, make **ABS Acai Sterols EFA** a one-two punch, perfectly designed by nature to quench our skin while providing protection.

EFFICACY

ABS Acai Sterols EFA are sterols derived from acai. The oil is fractionated and the sterols are removed. Sterols are useful for increasing barrier formation on the skin while also improving hydration.

Code Number: 10414

INCI Name: Euterpe Oleracea Sterols & Linoleic Acid & Oleic Acid & Linolenic Acid

INCI Status: Approved

REACH Status: Compliant

CAS Number: 68990-51-2 & 60-33-3 & 112-80-1 & 463-40-1

EINECS Number: 273-605-2 & 200-470-9 & 204-007-1 & 207-334-8

Origin: Botanical

Processing:

GMO Free
No Ethoxylation
No Irradiation
No Sulphonation

Additives:

Preservatives: None
Antioxidants: None
Other additives: None

Solvents Used: N/A

Appearance: White to Very Light Yellow Waxy Paste

Soluble/ Miscible: Oil Soluble

Ecological Information:

86.75% Biodegradability

Microbial Count: < 100CFU/g,
No Pathogens

Suggested Use Levels: 0.5 – 5.0%

Suggested Applications: Improved Barrier Function, Moisturization

Benefits of ABS Acai Sterols EFA:

- Functional Active
- Intense Moisturizing Benefits
- Perceivable Sensorial Attributes
- Improved Barrier Function
- Hair and Skin Care Applications
- Standardized for Essential Fatty Acids

ABS Acai Sterols EFA

Hydration Potential

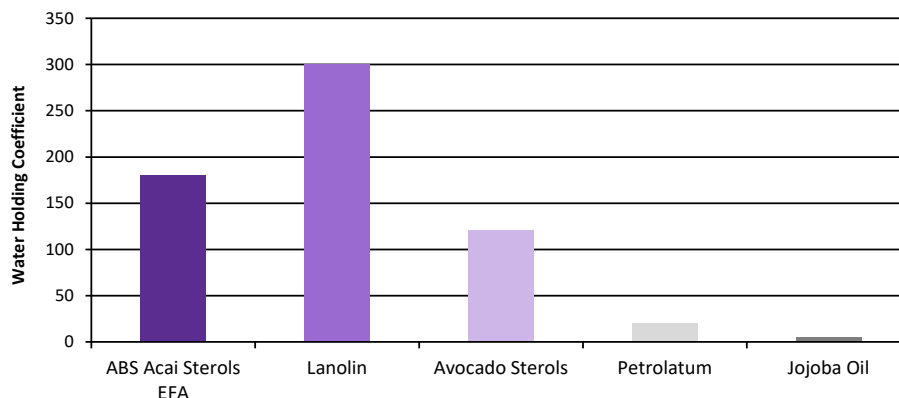


Figure 1. Increase in skin hydration when incorporating **ABS Acai Sterols EFA**.

The hydration potential of **ABS Acai Sterols EFA** was determined using the British Pharmacopoeia (BP) water absorption capacity method. The process involves dripping water into a sample in a mortar and mixing well at room temperature, until the terminal point is reached. The terminal point is defined as the point at which water can no longer be mixed into the emulsion. The Water Holding Capacity (%) = ((Amount of water contained/ Sample weight) x 100). The results indicate that **ABS Acai Sterols EFA** are capable of holding more than double their water weight, and may therefore be used to hold water on the surface of skin or hair.

To measure the barrier function of **ABS Acai Sterols EFA**, a mixture containing 50% **ABS Acai Sterols EFA** and 50% Mineral Oil 70 was applied to filter paper which was then placed on top of a measuring cup containing CaCl₂ solution. The containers were then stored at 25°C with a relative humidity of 95%. After 24 hours the weight of the moisture that permeated through the filter paper was measured as increased weight. The coefficient of permeability was shown as a percentage by comparing the weight increase with the control sample that did not have any oils applied to the filter paper. There is a reciprocal relationship between an increase in barrier function and the coefficient of permeability, and the lower the coefficient of permeability the higher the barrier function. The low coefficient of permeability obtained for **ABS Acai Sterols EFA** indicates that it may be useful for improving barrier formation.

Coefficient of Permeability

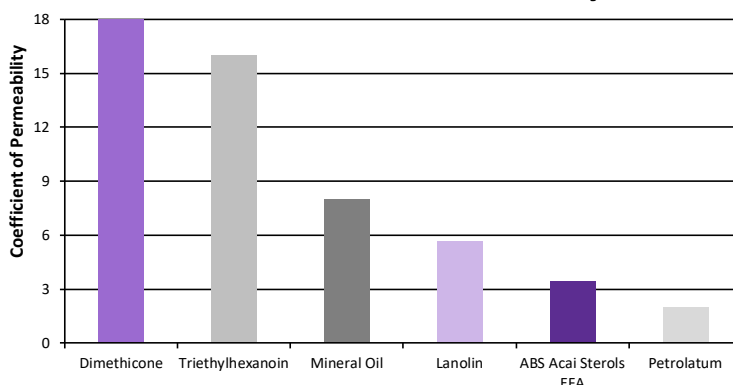


Figure 2. Barrier function of **ABS Acai Sterols EFA** compared to other raw material ingredients.

A half head study was conducted to determine the comparison of a control shampoo vs. 2.0% **ABS Acai Sterols EFA** in the control shampoo. Additionally, a comparison between the control conditioner and 2.0% **ABS Acai Sterols EFA** in the control conditioner were reported. Each volunteer's hair was photographed prior to the treatment and again after the shampoo and conditioner had been applied and the hair was styled. The images of the half head study were used in conjunction with a sensory assessment subjectively rating the parameters - cleansing, smoothing, dry and wet combability, anti-frizz, overall feel, shine and hydration. This assessment was conducted both before and after treatment. Based on the results obtained, **ABS Acai Sterols EFA** is capable of enhancing the smoothing, anti-frizz, overall feel, shine and hydration, making it an ideal ingredient for use in products intended for thick or unruly hair types.

ABS Acai Sterols EFA

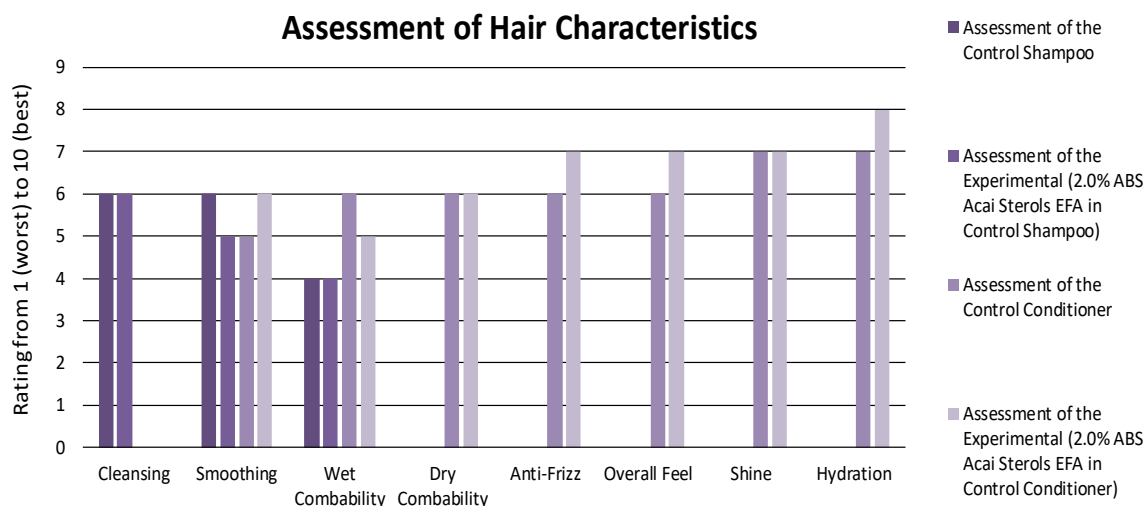


Figure 3. Rating of hair characteristics following sensory assessment



Figure 4. Full head Baseline, Untreated Hair

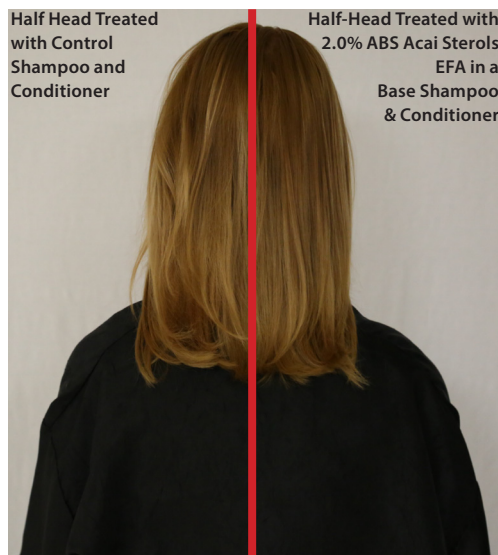


Figure 5. Half Head Treated

The results of the assessment indicate that when incorporated into a shampoo, 2.0% **ABS Acai Sterols EFA** did show improvement in the parameters tested. However, when used in a conditioner **ABS Acai Sterols EFA** is capable of improving smoothing, anti-frizz, overall feel, shine and hydration more than the control conditioner. Additionally, the subjects reported a significant increase in hydration and overall feel of the hair.