

Jojoba Aqua™ 120

Water-Soluble Jojoba Wax Ester



Jojoba Aqua™ 120

INCI : Jojoba Wax PEG-120 Esters

CAS #: 159518-81-7

EC #: NA

Water soluble jojoba esters

Naturally-derived co-surfactant

Softening, smoothing, conditioning effect

Emollient

In order to bring the skin care benefits of jojoba oil to new water-based formulations, Vantage™ has created Jojoba Aqua™ 120, a water soluble jojoba derivatives that bring emolliency and acts as a co-surfactant.

Jojoba Aqua™ 120 is a water-soluble emollient wax created using DW Jojoba Oil. It is a multifunctional ingredient that will provide emolliency to the skin and hair and act as a mild non-ionic surfactant or solubilizer for your formulation. Vantage™ DW Jojoba Oil is sourced from our own farms grown in the Sonoran Desert of North America and Monte Desert of Argentina and has the unique chemical composition like that of skin sebum.

This product was designed to bring the moisturization of our DW Jojoba Oil in a water-soluble form From Farms to Formulations™. It provides the skin and hair softening and conditioning properties associated with DW Jojoba Oil in an easy to use water-soluble form.

Jojoba Aqua™ 120 is easy to incorporate into a variety of surfactant based personal care products such as liquid soaps, shower gels, body washes and shampoos. It may be used in both hot process and cold process applications and does not have a negative impact on foam generation in rinse off applications. It is also a clarifying agent for all water or surfactant-based formulations and aids in fragrance oil solubilization in aqueous solutions.

Recommended applications



Skin Care



Hand Sanitizers



Hair Care



Shower Gels &
Body Washes

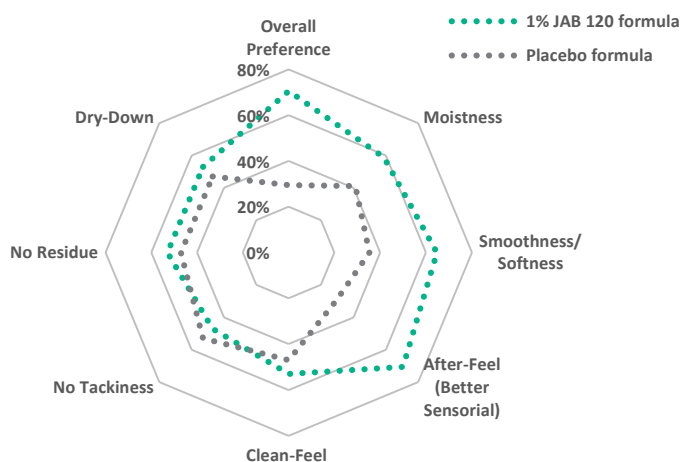


 Vantage

Impact on sensorial parameters in a hand sanitizer formulation

Jojoba Aqua™ 120 demonstrated good compatibility with alcohol without interfering with the transparency of the formula. And 71% of the panelists preferred the hand sanitizer with 1.0% Jojoba Aqua™ 120.

Hand Sanitizer - Consumer Preference studies



Method

- Two hand sanitizer formulas were prepared as shown in table. Formula characteristics were evaluated
- Blind Randomized study of 17 panelists was conducted.
- Panelists evaluated the 2 hand sanitizer formulas
- Each formulation was tested separately - hands washed between applications

Ingredients	Control	ja120
Water	24.92%	23.92%
Glycerin	1.0	1.0
Acrylates/C10-30 Alkyl Acrylate Crosspolymer	0.45	0.45
Alcohol denatured (70%)	73.0	73.0
Jojoba Aqua™ 120	-	1.0
Fragrance	0.5	0.5
Aminomethylpropanediol	0.13	0.13

Impact on foam and skin feel

Jojoba Aqua™ 120 improves foam creaminess and yields small closed bubbles in hand cleanser formulations. It was also found to impart skin softness.



Control
less foam with low density
big and open bubbles



Jojoba Aqua™ 120
dense and concentrated foam
small and closed bubbles



Water soluble silicone
less foam with low density
big and open bubbles

Method

- Hand wash formulas containing 2.0% Jojoba Aqua™ 120 or 2.0% water soluble Silicone or placebo were prepared as shown in table
- Dispense formula in watch glass using a foam pump
- Evaluate the quality of the foam
- Sensorial benefit studies on 14 panelists for foam creaminess, film residue and skin softness after washing hands using respective formulas

Impact on hair volume

0.5% Jojoba Aqua™ 120 when used in a shampoo, reduced hair frizz by 56% and hair volume by 36% compared to control.



Treatment

- Placebo vs. Commercial Shampoo vs. Shampoo with 0.5% Jojoba Aqua™ 120

Trial Design

- 20 tresses from natural Caucasian hair (5 g /25cm each) were pre-cleaned using 10% SLES solution for 1 minute, rinsed with running water. Split into 4 groups
- Treatment: Wet the tress for 20s and remove excess water. Apply 1mL of shampoo and rub for 60s. Rinse for 30s and remove excess water

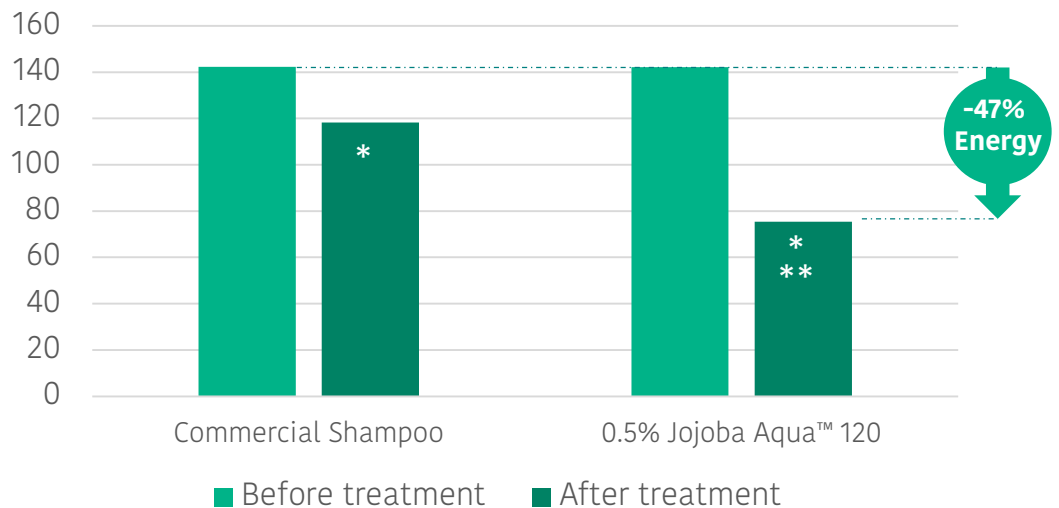
Results

- Hair Volume was determined as the percentage of black pixels in the area of the image

Impact on hair combability

Wet combability improvement

Jojoba Aqua™ 120 (0.5%) in a shampoo reduced the energy required for wet combing by 47% and 70% for dry combing.



- * Significantly different $p < 0.05$ when compared to initial value
- ** Significantly different $p < 0.05$ when compared to commercial Shampoo

Jojoba Aqua™ 120

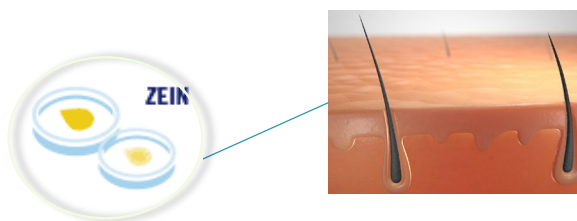
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Appearance	White to Off-White Flakes
Preservative	None
Recommended Use Level	0.5-5.0%
Shelf Life	2 years
Melting Point	55°C
HLB	18- Very mild co-surfactant
Regulatory Details	Listed on PCPC, IECSC, China IECIC 2015

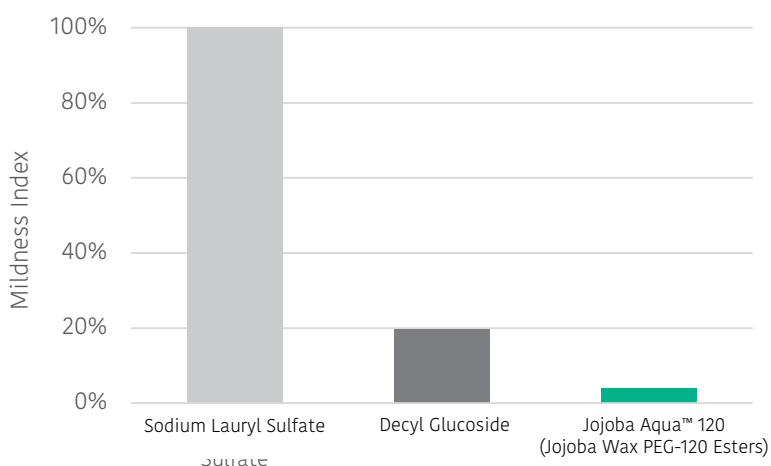
Mildness Evaluation by Zein Testing

Jojoba Aqua™ 120 is a mild surfactant and was found to be gentler than Alkyl polyglucosides.

The Zein test is a model for testing skin irritation. Zein protein is similar to keratin protein which is dominantly present in skin



Mildness by Zein Test



Method

- Evaluate the mildness of surfactant
- Surfactants were mixed to have 5% active matter
- The surfactant solutions are placed with 5 grams of Zein Protein and incubated for 4 hours.
- The solutions are then centrifuged and the supernatant aliquoted and its absorbance read
- Data was normalized to SLS value which was set to 100%

Formulation Guidelines

Heat the water phase to 55°C and add Jojoba Aqua™ 120. It will readily dissolve completely into the water phase. Once fully dissolved add other surfactants and ingredients.

Jojoba Aqua™ 120 can also be formulated through “cold processing”. Add Jojoba Aqua™ 120 to water at room temperature. Wait 5-10 minutes to allow for the ingredient to become fully hydrated. Mix until completely dissolved.