

DIRECT INCORPORATION OF JOJOBA OIL VS ENCAPSULATED JOJOBA OIL ACTIFILMS FOR BATHBOMB AND SOAP FORMULATION



Actifilm™: Actifilms are films made up of Hydroxypropylmethyl cellulose which is a chemically modified cellulose polymer. The dissolving film delivery vehicle is just a thin flexible sheet of polymer in which an active ingredient has been incorporated. Dissolving Films rapidly disintegrate to provide greater stability and shelf life. Umang Pharmatech manufactures **Actifilm™ i.e AF** exclusively available in shapes and varieties of colors available for personal care applications.

KEYWORDS: Encapsulated films, fast dissolving films, films for special effects, HPMC films, dissolving films for bathbomb and soap, water soluble films for decoration.

BENEFITS OF JOJOBA OIL:

- Jojoba oil act as a natural moisturizer that hydrates skin. It also contains vitamin E and B and is packed with antioxidants, and anti-inflammatory properties. Essential minerals like zinc and chromium that provide nourishment and moisture to the skin.
- It is shelf-stable. Unlike other oils, Jojoba oil does not turn rancid or oxidize over time. Jojoba oil has a high amount of iodine, which fights bacterial growth that can lead to breakouts, which makes it ideal for personal care applications.
- Jojoba oil contains antifungal as well as antimicrobial properties that kill bacteria, caused by *Salmonella*, an *E. coli* infection, and *Candida*.

WHY ENCAPSULATED JOJOBA OIL ?

Encapsulation Technology used in the development of cosmetic formulations that more stable, more effective and with improved sensory properties. The main aim of encapsulation is to protect the active material from undesirable reactions. Encapsulated jojoba when used on skin of helps relieve dryness, flaking, itching, and related symptoms. Jojoba oil has a high amount of iodine, which fights bacterial growth that can lead to breakouts. Thus Jojoba oil is encapsulated as it is extremely beneficial due to its healing properties.

UNIQUE FUNCTIONS:

- Easy to handle at the industrial scale.
- Disappear on gentle rubbing without leaving any residue on skin use upon application.
- Non toxic and Non irritant, soluble in water. Available in natural flavors.
- Film have more flexibility and better physical properties.



**UMANG PHARMATECH
UCFC-600 FILM
CASTING MACHINE**

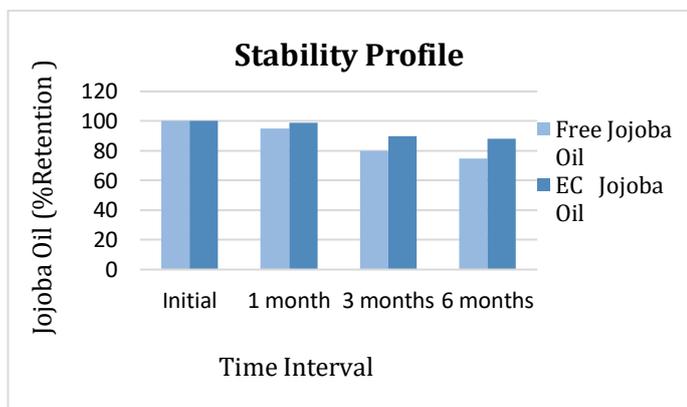
MANUFACTURING PROCESS OF ACTIFILMS™ CONTAINING JOJOBA OIL :

The Solution Casting Method : It is ideally suited for a water-soluble polymer, "Water soluble" refers to a film which, when exposed to water, begins to dissolve or disintegrate to its smallest components. . Film coating is the process whereby active material is surrounded by a thin layer of polymeric material. Film coating method generally involves the steps of continuously pumping a feed of polymer solution with primary

component i.e. HPMC . Both HPMC and colour weighed accurately and mixing of all ingredients to achieve homogeneous primary solution and further combining with secondary component to polymer solution. Secondary components such as active functional or decorative ingredients are finally deposited into the primary solution onto the casting surface for film formation using Umang Pharmatech's UCFC-600 (Solution tank ,Film Casting). The resulting solution is cast as a film and allowed to dry, which are then cut into pieces of the desired size and shape.

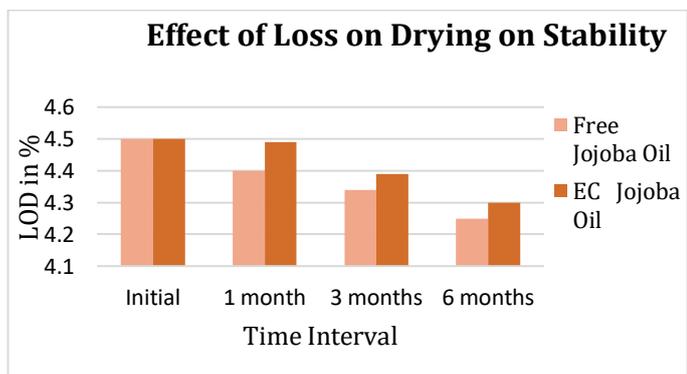
IMPROVED SHELF LIFE STUDY:

The Free Jojoba oil and Actifilms™ containing Jojoba oil were kept in an air tight glass bottle and place in Stability Chambers at temperatures of 30°C ± 2°C for 180 days, HPLC analysis show that the Actifilms™ containing Jojoba oil retain 88 % of the Jojoba oil while the free Jojoba oil only retained 75 % .



TEMPERATURE EFFECT ON LOD STABILITY:

The Free Jojoba oil and Actifilms™ containing Jojoba oil were place in an air tight glass bottles at 30°C ± 2°C for 180 days in a stability chamber. The sampling and analysis was done at fixed time intervals for their LOD ,to check the moisture loss in the samples. Results mentioned in below graph.



CONCLUSION:

The results obtained from this study show that using Encapsulated Jojoba Oil are more stable and deliver desire amount of dose of Jojoba Oil make it an ideal for use in formulation.

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