

DIRECT INCORPORATE OF LEMON OIL VS ENCAPSULATED LEMON OIL FILMS FOR BATHBOMB AND SOAP FORMULATION

Actifilms™ AF is made up of Hydroxypropyl Methyl Cellulose which is a chemically modified cellulose polymer. HPMC is a water soluble synthetic polymer which was used as film former. It is a thin, flexible sheet of polymer in which an active ingredient has been incorporated. Films are rapidly disintegrate and also have greater stability and shelf life.

BENEFITS OF LEMON OIL:

- Lemon Oil has a astringent and antiseptic properties, It is use for the facial cleanser and help to treating the damage skin cell also reduce the excess oil of the skin.
- Lemon oil may help to remove the acne and hydrate the skin, it has a strong antioxidant property and anti-aging effect.
- Lemon oil act as a natural cleanser. It protect from body bacteria, fungi and harmful pathogens and nourishes the skin.

WHY ENCAPSULATED LEMON OIL ?

Encapsulation Technology used in the development of formulations that more stable, more effective and with improved sensory properties. Encapsulation protect the active ingredient from the unwanted effect. Lemon oil is a photosensitive and volatile compound it can oxidize when exposed to high temperature, oxygen. Encapsulation is best technology to minimize these all problems.

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.
- Available in different shapes & color
- Film have more flexibility and better physical properties.

MANUFACTURING PROCESS OF ACTIFILMS™ CONTAINING LEMON OIL :

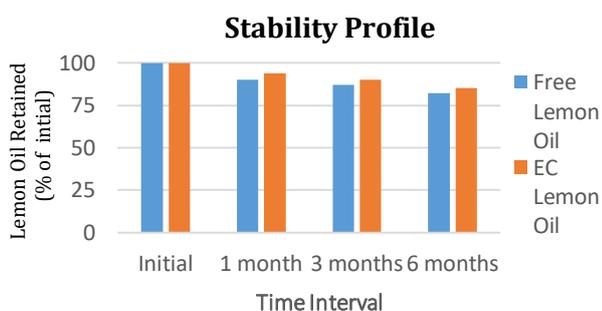
The Solution Casting method : It is ideally suited for a water-soluble polymer, "Water soluble" refers to a film which, when exposed to water, begins to dissolve or disintegrate to its smallest components. Film coating is the process whereby active material is surrounded by a thin layer of polymeric 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 Lemon oil and Actifilms™ containing Lemon 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 Lemon oil retain 87 % of the Lemon oil while the free Lemon Oil only retained 83 % .



TEMPERATURE EFFECT ON LOD STABILITY:

The Free Lemon Oil Actifilms™ containing Lemon 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 Lemon Oil are more stable and deliver desire amount of dose of Lemon Oil and make it an ideal for use in formulation.

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KEY WORDS:

Encapsulated films ,Films for special effects ,HPMC films, dissolving Films.