DIRECT INCORPORATE OF KOJIC ACID VS ENCAPSULATED KOJIC ACID 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. Actifilms rapidly disintegrate and also have greater stability and shelf life.

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 KOJIC ACID:

- Kojic acid works by blocking tyrosine from forming, which then prevents melanin production. Decreased melanin production may have a lightening effect on the skin.
- Kojic acid inhibits the production of melanin, a pigment that is also responsible for saving your skin from sunburn and other side effects of harsh sun rays.

WHY ENCAPSULATED KOJIC ACID ?

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. Encapsulation is best technology to minimize these all problems.So kojic acid is encapsulated to improvise the overall the dermis of skin.

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.

MANUFACTURING PROCESS OF ACTIFILMS™ CONTAINING KOJIC ACID :

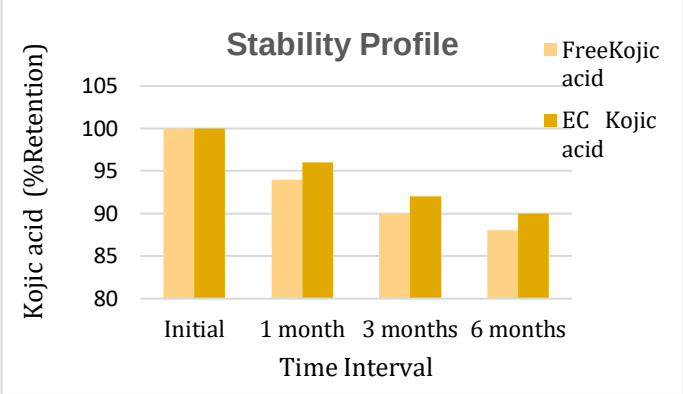
The Solution Casting Method : It is ideally suited for a water-soluble polymer, “Water soluble” refers to a film which, when exposed to water, begins to dissolve or disintegrate to its smallest components. . Film coating is the process whereby active material is surrounded by a thin layer of polymeric 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

UMANG PHARMATECH UCFC-600 FILM CASTING MACHINE

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.

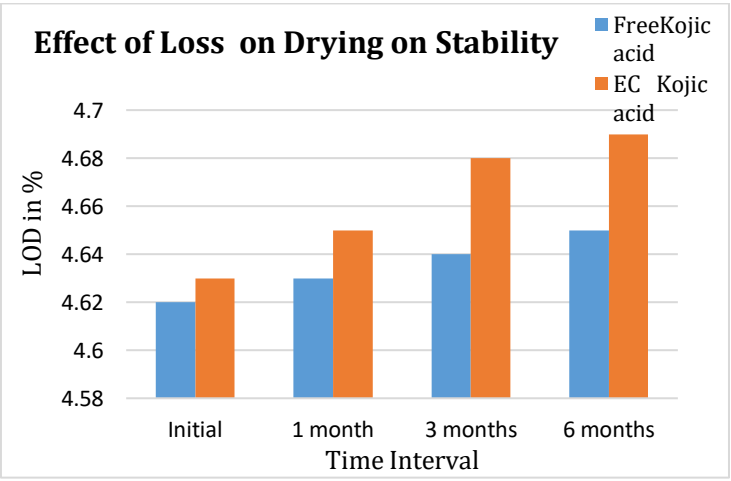
IMPROVED SHELF LIFE STUDY:

The Free Kojic acid and Actifilms™ containing Kojic acid 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 Kojic acid retain 90 % of the Kojic acid while the free Kojic acid only retained 88% .



TEMPERATURE EFFECT ON LOD STABILITY:

The Free Kojic acid and Actifilms™ containing Kojic acid were place in a air tight glass bottles at 30˚C ± 2˚C for 180 days in 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 Kojic acid i.e. Actifilms™ containing Kojic acid are more stable and deliver desire amount of dose of Kojic acid for skin nourishment .

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