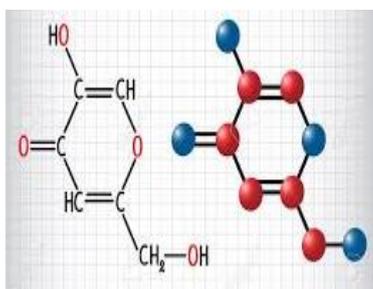


## FORMULATION OF ENCAPSULATED KOJIC ACID ACTIFILMS FOR BATHBOMB

**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. These actifilms magically disappear upon rubbing by delivering dry actives i.e they are visually dry but soften easily when it gets in contact with water, thus they have the amazing properties to soften in the formula making them more malleable and ready to disintegrate when pressure is applied. 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, water soluble films for decoration.

### **KOJIC ACID :**



Kojic acid is made from different types of fungi. Mostly it has been isolated from

the fungus *Aspergillus oryzae*. Because of its ability of Kojic acid to really penetrate the layers of your skin and stop the production of melanin, kojic acid is used as a skin lightening agent i.e usually sought out as a spot-fading treatment, anti aging treatment. Kojic acid also has antifungal properties, useful in treating fungal infections of the skin.

### **WHY ENCAPSULATED KOJIC ACID?**

Encapsulation Technology used in the development of cosmetic formulations that more stable, more effective and with improved sensory properties. Encapsulation has the ability to enhance the oxidative stability,

thermostability, shelf-life, and biological activity of Kojic acid. Thus Kojic Acid is encapsulated so as to effectively balance skin tones, and freckles caused by sun exposure, aging, and cutaneous hyperpigmentation.



### **INCI NAME:**

Kojic acid

### **KEY PROPERTIES OF ACTIFILMS:**

- Non GMO & Paraben free
- Easy to handle at the industrial scale
- Natural, Non toxic and Non irritant, and non-allergenic properties
- Gentle and effective on skin with rapid dispersion and excellent uniformity
- Provides visual effects and activates four senses you can see, smell, taste & touch it and disappears on rubbing the product.

## EFFECT OF ENCAPSULATED KOJIC ACID IN BATHBOMB



Bath bombs are single-use, spherical blends of smoothing, fragrant extracts and oils . The primary ingredients are sodium bicarbonate and citric acid, which interact with each other once dissolved in water to create that fizzing effect . Once this reaction occurs, the bath bomb dissolves and breaks apart, releasing all the good stuff inside: from delicious scents to delivering actives that gets dispersed into water to provide clear, soft, healthy and glowing skin. Encapsulated Kojic acid not only deodorize, clean and repair skin. Active Ingredient like Kojic acid when encapsulated in bathbomb along with fading of dark spots and blemishes of the skin and cleansing body it provides antibacterial benefits by decreasing the chances of bacterial skin infections . Encapsulated Kojic acid is a UV protector, suppressor of hyperpigmentation in human and restrainer of melanin formation and due to its tyrosinase inhibitory activity ,the decreased melanin production has a lightening effect on the skin.

### FORMULATION PROCEDURE:

**Step I:** Dry mixing of Xanthan Gum and Citric acid .

**Step II:** Dry mixing of sodium bicarbonate and sodium starch glycolate.

**Step III:** Dry mixing of mannitol, cross carmellose sodium lauryl sulphate.

**Step IV:** PVPK-30, colour ,purified water (solution preparation)

**Step V:** Addition of Step I , II , III is added to the mixture. Stirring under vaccum is resumed without further heating.

**Step VI:** Addition of Step IV into Step V followed by addition of fragrance .The fragrance added is mixed under vaccum at room temperature.

Encapsulated Kojic acid actifilms are added at the end of manufacturing at moderate temperature and at slow stirring.

**DOSAGE:** 0.2 % for visual effect and up to 10 % for colour or active delivery

**STORAGE:** Temperature between 5° C - 25°C

### Different Shapes/Colour of Actifilms



Mix colour  
Star shape



Silver colour Heart shape



Blue colour Heart

FORMULATION TIP	
BATHBOMB	
Ingredients	Qty (%)
Xanthan Gum	55.05
Citric acid	24
Sodium bicarbonate	30
PVPK30	2
Sodium Starch Glycolate	2
Mannitol	5
Cross carmellose	1
Fragrance :Rose	1
Color:Blue	1
Actifilms with Kojic acid	0.2
Purified water	Up to 100%