

## DIRECT INCORPORATE OF GREEN TEA EXTRACT VS ENCAPSULATED GREEN TEA EXTRACT FOR COSMETIC FORMULATION

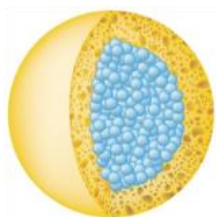


**INTRODUCTION:** Tea is the most widely consumed drink in the world. Green Tea contain major constituents are polyphenols which plays the role of antioxidant. The major Polyphenol are flavonoid that are catechins, epicatechin, epigallocatechin and epicatechin gallate. The phytochemicals present in Green Tea maintain human health. Green Tea have antioxidant and astringent activity hence it is used in the cosmetology.

### BENEFITS OF GREEN TEA EXTRACT:

- Green Tea Extract is high source of antioxidant activity so it may prevent the acne and skin infection. It reduce the oil on the skin.
- Green Tea Extract may help improve skin elasticity and slow down skin ageing also protect the skin from UV rays.
- Green Tea Extract reduce irritation, redness, and swelling due presence of catechins.
- Green Tea Extract obtained full of vitamin which make the soft and nourished skin. It also help to reduce the dark circles.

### WHY ENCAPSULATED GREEN TEA EXTRACT ?



Encapsulation Technology used in the development of cosmetic formulations that more stable, more effective and with improved sensory

properties. Encapsulation protect the active ingredient from the unwanted reactions. Green Tea extract contain polyphenols which are sensitive to light and heat so it degrade rapidly also Green Tea Extract are astringent and very bitter in taste. All these problems can minimize by encapsulating the Green Tea Extract.

### UNIQUE FUNCTIONS:

- Sprayspheres®- SC beads containing Green Tea Extract are stable so easily applied into formulation.
- Sprayspheres®- SC beads containing Green Tea Extract When rubbed onto the skin they break easily and releasing the active contents.
- Sprayspheres®- SC beads containing Green Tea Extract hard and solid in bulk (easy to process and delivery).
- Sprayspheres®- SC beads containing Green Tea Extract are hard and dry but soften in contact with at least 20% of water.

### MANUFACTURING PROCESS OF SPRAYSFERES® – SC BEADS CONTAINING GREEN TEA EXTRACT:

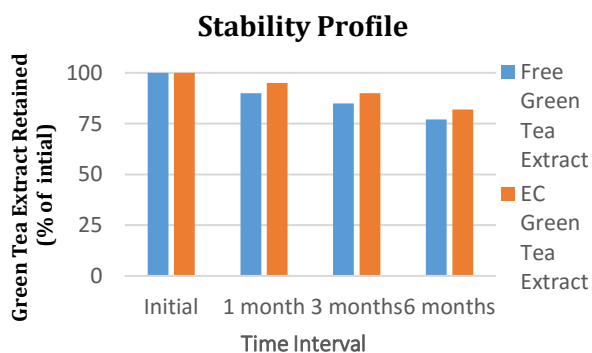
Green Tea Extract, lactose ,Microcrystalline cellulose, HPMC and color were weighed accurately and Dry mixing of all ingredients is done to achieve homogeneous powder dispersion, The obtained blend was granulated using purified water to form wet mass. Dry mixing and wet granulation are carried out using Umang Rapid Mixer granulator (URMG-10). This wet mass was then extruded through Umang Single screw Extruder (USSE- 60) which produces rod shaped particles of uniform diameter from the wet mass. Extrudes were



then spheronized using Umang Spheronizer (USPH-150). After spheronization process, the obtained beads were kept for drying.

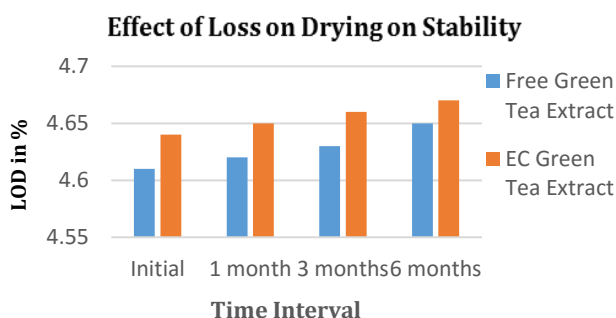
### IMPROVED SHELF LIFE STUDY:

The Free Green Tea Extract and Sprayspheres®-SC beads containing Green Tea Extract 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 Sprayspheres®-SC beads containing Green Tea Extract retain 82 % of the Green Tea Extract while the free Green Tea Extract only retained 77 % .



### TEMPERATURE EFFECT ON LOD STABILITY:

The Free Green Tea Extract and Sprayspheres®-SC beads containing Green Tea Extract 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.



### APPLICATIONS:

- Body /Face Creams
- Body /Face Lotions
- Body /Face Gels
- Body Emulsions

### CONCLUSION:

The results obtained from this study show that using encapsulated Green Tea Extract i.e. Sprayspheres®-SC beads containing Green Tea Extract are more stable and deliver desire amount of dose of Green Tea Extract for skin nourishment .

### REFERENCES:

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### KEY WORDS:

Encapsulated Beads, Spheres, Cosmetic beads, Beads for special effects, Cosmetic beads for aesthetic effect.