

DIRECT INCORPORATE OF VITAMIN E VS ENCAPSULATED VITAMIN E FOR PERSONAL CARE FORMULATION

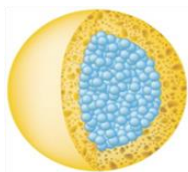


INTRODUCTION: Vitamin E is commonly found in vegetation. Vitamin E or α Tocopherol is widely used as a strong lipid soluble antioxidant protecting cell membranes from reactive oxygen specie. It is a major ingredient in various cosmetic products. Vitamin E protects the skin from various injurious effects owing to solar radiation. Vitamin E prevents the skin aging and improves the dry skin condition. Vitamin E supports the hair growth and boosts the elasticity and shine.

BENEFITS OF VITAMIN E:

- Vitamin E (α Tocopherol) easily absorb into the skin. It reduced the skin damage cause by UV radiation. It helps to reduce the brown spots on the face.
- Vitamin E (α Tocopherol) effective in reducing dark circles and wrinkles of the lower eyelids.
- Vitamin E (α Tocopherol) which is antioxidant protects the cell from oxidative stress and it heals the damage cellular membrane. It supports the scalp and improves the growth of hair.
- Vitamin E (α Tocopherol) use for high pigmentation, minimize the production of melanin and lighten skin.

WHY ENCAPSULATED α TOCOPHEROL ?



Encapsulation
Technology used in the development of cosmetic formulations that more

stable, more effective and with improved sensory properties. Vitamin E (α Tocopherol) is reactive in nature. It is very unstable compound. Vitamin E (α Tocopherol) rapidly degrades from oxygen, moisture, temperature, and light, which results in decreased stability, storage condition and desired release. Therefore to overcome the all the problems encapsulation method is used to enhance to storage and stability Vitamin E (α Tocopherol).

UNIQUE FUNCTIONS:

- Sprayspheres®-SC beads containing α Tocopherol are stable so easily applied into formulation.
- Sprayspheres®-SC beads containing α Tocopherol disappears on gentle rubbing release and without leaving any residue on skin and hair upon application.
- Sprayspheres®-SC beads containing α Tocopherol hard and solid in bulk (easy to process and delivery).
- Sprayspheres®-SC beads containing α Tocopherol are hard and dry but soften in contact with at least 20% of water.

MANUFACTURING PROCESS OF SPRAYSFERES® - SC BEADS CONTAINING α TOCOPHEROL:

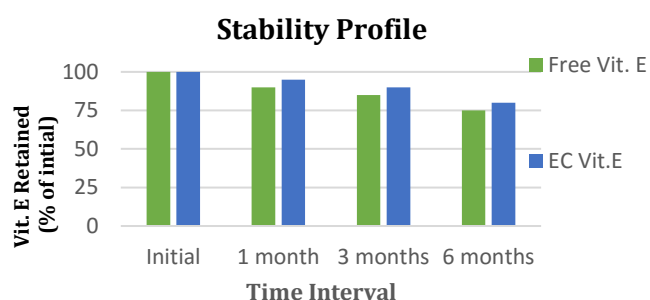
Vitamin E (α Tocopherol), lactose, micro-crystalline cellulose, HPMC and color were weighed accurately and dry mixing of all ingredients is done to



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.

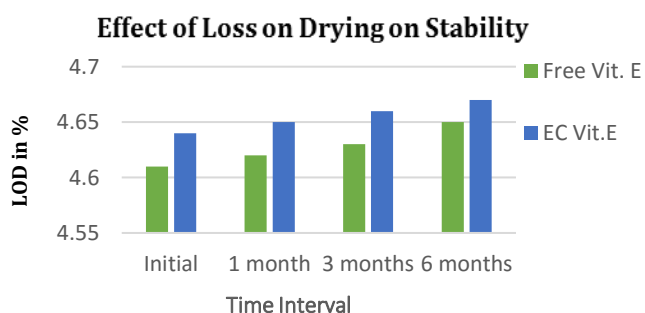
IMPROVED SHELF LIFE STUDY:

The Free Vitamin E (α Tocopherol) and Sprayspheres®-SC beads containing α Tocopherol were kept in an air tight glass bottle and place in Stability Chambers at temperatures of $30^{\circ}\text{C} \pm 2^{\circ}\text{C}$ for 180 days, HPLC analysis show that the Sprayspheres®-SC beads containing α Tocopherol retain 80% of the α Tocopherol while the free Vitamin E (α Tocopherol) only retained 75 %.



TEMPERATURE EFFECT ON LOD STABILITY:

The Free Vitamin E (α Tocopherol) and Sprayspheres®-SC beads containing α Tocopherol were place in an air tight glass bottles at $30^{\circ}\text{C} \pm 2^{\circ}\text{C}$ 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:

- Hair Serum, Shampoo
- Body /Face Creams
- Body /Face Lotions
- Body /Face Gels
- Body Emulsions

CONCLUSION:

The results obtained from this study show that using encapsulated Vitamin E (α Tocopherol) i.e Sprayspheres®-SC beads containing α Tocopherol are more stable and deliver desire amount of dose of Vitamin E (α Tocopherol) for skin nourishment and hair growth.

REFERENCES:

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KEY WORDS:

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