

DIRECT INCORPORATE OF LAVENDER OIL VS ENCAPSULATED LAVENDER OIL FOR COSMETIC FORMULATION



INTRODUCTION: Lavender Oil is an essential Oil extracted by steam distillation from the herb *Lavandula latifolia*. It is clear, colorless to pale yellow liquid and complex mixture of phytochemicals. It is used in aromatherapy. The main constituents of lavender oil are linalyl acetate (45.6%-60%), linalol (30.8%), camphor and terpinen-4-ol. Lavender oil has anti-fungal, antibacterial and antimicrobial activity so these can be used for the skin and scalp application.

BENEFITS OF LAVENDER OIL :

- Lavender Oil can prevent and heal the acne, dry skin and reduces the inflammation. It plays a role as an anti-pigmentation agent, to decrease the melanin formation alternatively lightening the skin.
- Lavender Oil is reducing dark circles and wrinkles of the lower eyelids and helps to reduce the brown spots on the face.
- Lavender Oil has antimicrobial activity so it can fight with dandruff and infection. It reduces the scalp inflammation.
- Lavender Oil heals the damaged cellular membrane. It supports the scalp and improves the growth of hair.

WHY ENCAPSULATED LAVENDER OIL ?



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

properties. Encapsulation protects the active ingredient from the unwanted reactions. Lavender oil is easily oxidized when exposed to oxygen. The oxidized fragrances can irritate on the skin. Therefore to overcome the problems, the encapsulation method is used to enhance the storage and stability of lavender oil.

UNIQUE FUNCTIONS:

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

MANUFACTURING PROCESS OF SPRAYSpheres® – SC BEADS CONTAINING LAVENDER OIL:

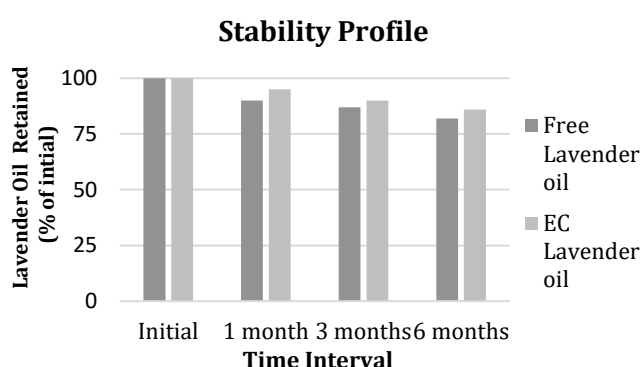
Lavender Oil, lactose, Micro-crystalline cellulose, HPMC and color were weighed accurately and dry mixing of all ingredients is done to achieve homogeneous powder dispersion. The obtained blend was granulated using purified water to form wet mass. Dry mixing and wet granulation are carried out using 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.

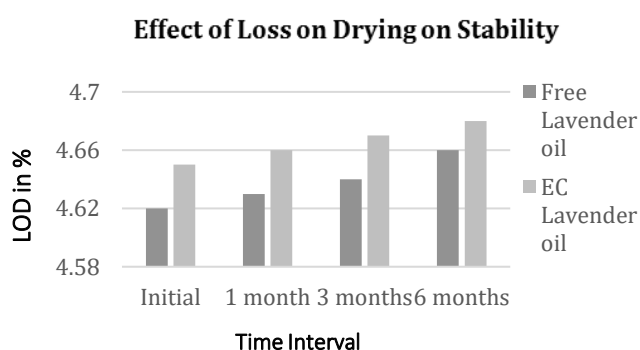
IMPROVED SHELF LIFE STUDY:

The Free Lavender oil and Sprayspheres®-SC beads containing Lavender 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 Sprayspheres®-SC beads containing Lavender oil retain 86 % of the Lavender oil while the free Lavender Oil only retained 82 %.



TEMPERATURE EFFECT ON LOD STABILITY:

The Free Lavender Oil and Sprayspheres®-SC beads containing Lavender 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.



APPLICATIONS:

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

CONCLUSION:

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

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KEY WORDS:

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