

DIRECT INCORPORATE OF PEPPERMINT OIL VS ENCAPSULATED PEPPERMINT OIL FOR PERSONAL CARE FORMULATION



INTRODUCTION: Peppermint oil is a natural essential oil. Peppermint oil has a fresh, sharp, menthol smell, is clear to pale yellow in color and watery in viscosity. Peppermint oil has a high menthol content, causes cooling sensation. Menthol increases the sensitivity of cutaneous cold receptors. Menthol acts as a topical vasodilator which enhances the absorption into the skin and giving the analgesic effect. The peppermint oil is popular for flavoring agent; it has a strong antimicrobial, antioxidant and antibacterial properties.

BENEFITS OF PEPPERMINT OIL:

- Peppermint Oil use for cleansing for over-oily skin. It gives the cooling effect which reduces the inflammation due to acne. Peppermint oil helps to reduce the acne due to its antimicrobial and antibacterial activity.
- Peppermint oil use for hair growth, hair loss by stimulating hair follicles and strengthen hair roots. It has antiseptic and anti-inflammatory properties which can help with dandruff.
- Peppermint oil has an antibacterial activity which controls the growth of bacteria on the skin and hair.

WHY ENCAPSULATED PEPPERMINT OIL ?



Encapsulation Technology used in the development of cosmetic formulations that more stable, more effective and with improved sensory properties. Peppermint oil is a volatile compound and its sensory properties can be change due to volatilization, heating or chemical interaction, which will alter the quality of the product. Peppermint oil is essential oil which can be degrading during processing, storage and transformation. These all problems can minimize by the encapsulation of peppermint oil.

UNIQUE FUNCTIONS:

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

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

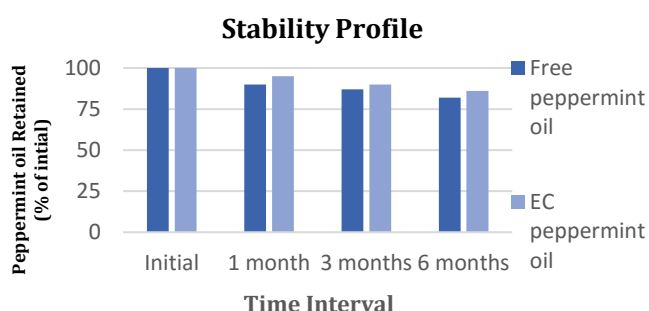
Peppermint Oil, lactose, micro-crystalline cellulose, HPMC and color were weighed accurately and dry mixing of all ingredients is done to achieve homogeneous powder dispersion, the obtained blend was granulated using purified water to form wet mass. Dry mixing and wet granulation are carried



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.

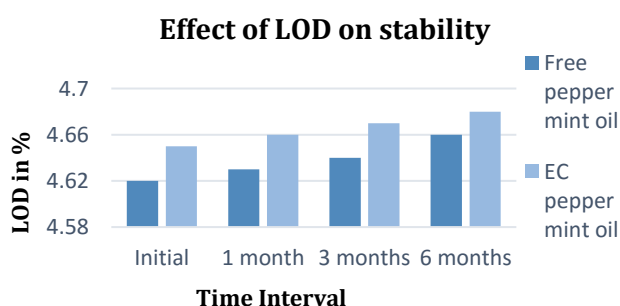
IMPROVED SHELF LIFE STUDY:

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



TEMPERATURE EFFECT ON LOD STABILITY:

The Free peppermint oil and Sprayspheres®- SC beads containing peppermint oil 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
- Hair Shampoo
- Body /Face Creams
- Body /Face Lotions
- Body/Face Gels

CONCLUSION:

The results obtained from this study show that using encapsulated peppermint oil i.e. Sprayspheres®-SC beads containing Peppermint Oil are more stable and deliver desire amount of dose of Peppermint oil for nourishes the skin as well as the hair.

REFERENCES:

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KEY WORDS:

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