

# STABILITY OF ENCAPSULATED ACTIVATED CHARCOAL BEADS /SPHERES FOR COSMETIC USES

## INTRODUCTION

Encapsulated Activated charcoal in Spray spheres® -SC beads consist of the ingredients like Lactose, Microcrystalline cellulose, Hydroxy methyl cellulose (HPMC), and activated charcoal. It acts as a neutral carrier as it does not interfere with the active constituent's effect on skin/hair.

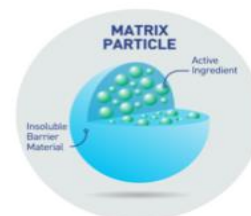


Activated charcoal is charcoal that has been treated with very high temperatures to change its internal structure and increase its ability to absorb dirt, oil and thus effectively cleanses the skin, unclogs pores, removes deeper impurities, and dead skin cells. The result is smooth, and even-toned skin. The mechanism behind is that the dirt, toxins, heavy metals, chemicals, and other poisons are attracted to the charcoal molecules and washed away. This article shows the stability of Encapsulated Activated charcoal in Spray spheres® -SC beads.

**Key Words:** Encapsulated Beads, Spheres, Cosmetic beads, Beads for special effects, Cosmetic beads for aesthetic effect

## TECHNOLOGY

Umang Pharmatech has used the Pharmaceutical's popular technology i.e. **Encapsulation Technology** to develop Sprayspheres with incorporation of desirable actives in cosmetic formulations to obtained better visual impact, deliver desirable actives ingredients and provide stable beads within the formulation.



**Dry Mixing of Ingredients :** To achieve a Homogenous Powder dispersion in URMG-250

**Wet Mixing :** To produce a sufficiently wet mass in URMG-250

**EXTRUSION :** To form rod shaped form of Uniform Diameter in UDRE 100

**Drying in UFBM 500** To achieve desired Final Moisture Content

**Screening :** To achieve desired narrow distribution

**SPHERONIZATION:** To round off these rods into spherical particles in USPH 500

## BENEFITS

- It is suitable for incorporation of both hydrophobic and hydrophilic cosmetic actives.
- It is biodegradable and nourishes skin & hair.
- It can be used in water-based personal care formulation to provide visual effects and delivery cosmetic actives.
- It disappears on gentle rubbing without leaving any residue on teeth, skin & hair upon application.
- It can be customized in customer's desirable color and active ingredients.



## APPLICATIONS:

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

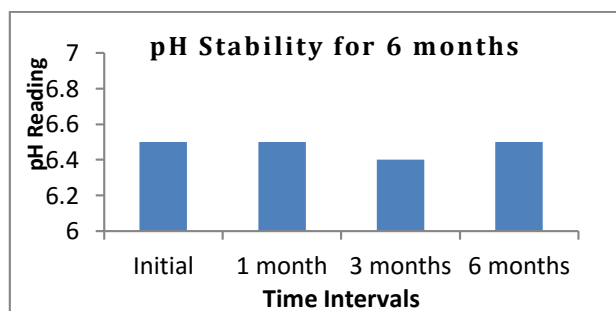


## STABILITY STUDIES:

- Due to the inert ingredients used for manufacturing, the spheres are very stable at temperatures up to 25°C.
- It can withstand the pH range of 5 to 8 except blue color.
- Encapsulated Activated charcoal in Spray spheres® -SC beads were prepared by using Umang's Extrusion-Spheronization technology and kept for stability studies at a temperature 25°C ± 2°C/ 60± 5 RH for 6 months and analyzed the changes occur during the testing period.

### ➤ pH Stability:

The sampling was done at fixed time intervals and analyzed in different pH solutions ranging from pH6 to 8 and checked on pH meter for their pH. Results mentioned in below graph.



### ➤ Leach Test -

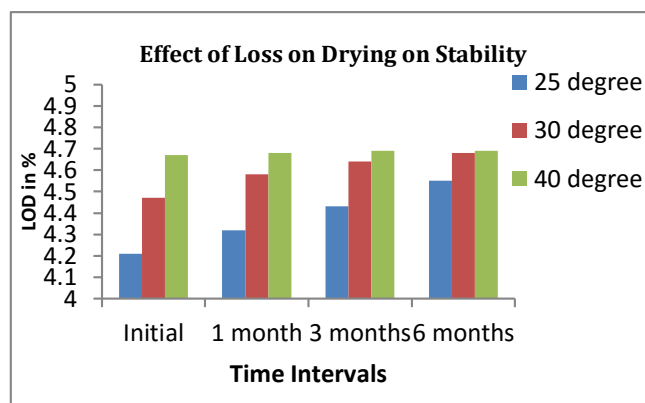
The sampling was done at fixed time intervals and then placed in three different pH solutions and checked visually for any color leaching. Results mentioned in below table.

TIME INTERVALS	VISUAL RESULTS
Initial	No change in color
After 1 month	No change in color
After 3 months	No change in color
After 6 months	No change in color

### ➤ Temperature Effect on LOD Stability:

The incubated Encapsulated Activated charcoal in Spray spheres® -SC beads were place in an air tight glass bottles at 25°C, 30°C and 40°C ± 2°C for 3 hours.

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.



## CONCLUSIONS:

The above studies show that Encapsulated Activated charcoal in Spray spheres® -SC beads do not change the appearance when analyzed for different pH, Leach test and Temperature as testing parameters and demonstrated the desirable retention throughout the stability studies. Thus, make it an ideal for use in cosmetic formulation.

## REFERENCES:

- ICH Harmonised Tripartite Guideline Stability Testing of New Drug Substances and Products Q1A(R2).
- Sweta Kulkarni\*, Deepika Bairagee, NeetuChoudhary; Formulation And Evaluation Of Activated Charcoal Peel Off Mask; International Journal Of Phytopharmacy Research; Vol 9; 2018.