

## FORMULATION OF ENCAPSULATED BHRINGRAJ OIL BEADS FOR SHAMPOO



Encapsulation is the physical-chemical technique or process by which a active ingredient is protected and surrounded by a polymeric wall made up of Lactose ,Mannitol, Microcrystalline cellulose and Hydroxy propylmethylcellulose(HPMC)that isolates it from its environment.

Sprayspheres SC® beads are specially used for encapsulation that specifically deals with the incorporation of commercially available active material into protective system that can deliver the active to specific site.(e.g. conversion of liquid active agents or essential oils into beads/spheres )

Natural and biodegradable lactose and cellulose based colored beads/spheres infused with Bhringraj Oil via encapsulation Encapsulated Bhringraj Oil beads/spheres break down upon rubbing without leaving a residue.

Easily dispersed, delivering the active ingredient.

Improved stability in final products during processing (e.g. less evaporation of volatile active)

Creation of visible effects.

Encapsulation Technology deals with these Adjustable properties (actives, particle size, structure, oil etc)

Encapsulated Bhringraj Oil beads are available in a variety of colors.

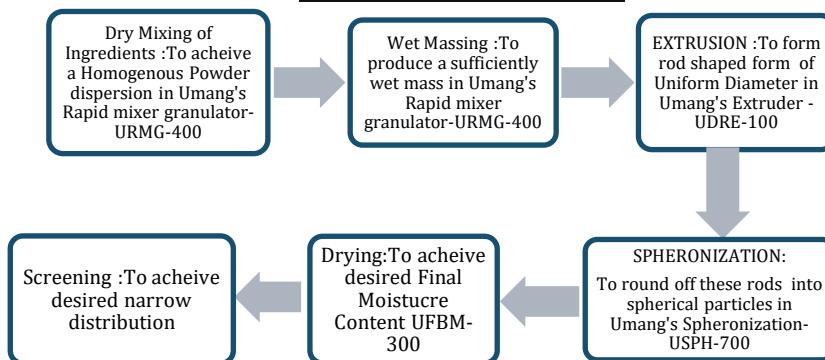
These Encapsulated Bhringraj Oil beads /spheres in Shampoo are natural conditioner and a cooling agent for hair.

Encapsulated Bhringraj oil beads/spheres not only gives shine to hair but also treats dandruff and dry scalp, promotes hair growth, prevents greying of hair. Bhringraj encapsulated in beads acts as a tonic, strengthens the hair and is one of the main ingredients in formulas for natural hair care.

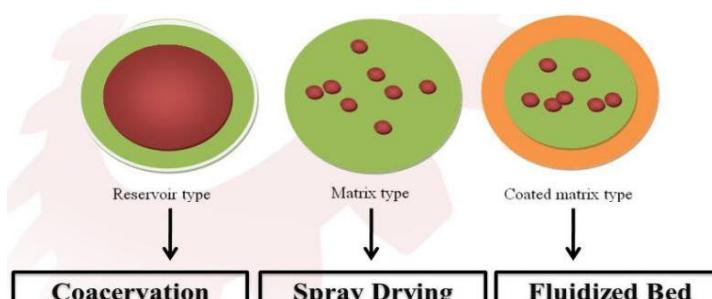
### Key Words:

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

### ENCAPSULATION PROCESS



UDRE-100 Umang Pharmatech Extruder



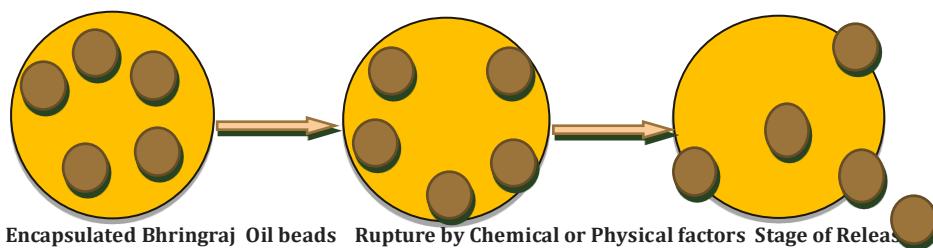
Coacervation

Spray Drying

Fluidized Bed

■ core ■ wall ■ coating

Types of Coating on Core



### **ENCAPSULATION MECHANISM**

#### **How Encapsulation Works**

- Molecules of active ingredients are coated in a polysaccharide shell—think of it as a shiny, slippery, protective coating.
- This encapsulated coating serves as a carrier system for the active ingredients in your haircare, i.e. the ingredients that are capable of transforming your structural growth of hair.
- Instead of activating all at once on the surface, encapsulated coatings protect your actives and release them slowly over time. This allows it to sink to deeper layers, where you can benefit most from active ingredient.
- When a personal care product like Shampoo, with encapsulated ingredients is applied to your hair, polysaccharide shell protects the entrapped active materials until delivered to targeted hair scalp and into hair shaft the coating starts to fade away, active ingredients are released little by little, delivering active ingredients in the process thus contributing to hair overall growth .

#### **Key Properties of Encapsulated beads**

- Free of micro plastics.
- Non GMO
- Perfect Spherical geometry
- Has non-toxic, non-comedogenic and non-allergenic properties
- Oxidatively stable .
- Gentle and Effective on scalp .
- Rapid dispersion with excellent uniformity.
- No change in Product pH.
- Encapsulation Stabilizes actives by protecting them from environmental factors, like UV light.
- Easily dispersed by finger to provide smooth and super feeling.
- Provide visual effects and delivery actives.
- Provide Systems that can incorporate Hydrophobic or Hydrophilic actives such as Fragrance, Colour, Vitamin and Herbal Extract etc.

#### **Formulation Procedure:**

**Step I :-** Take water 66 ml and in this add the xanthan gum ( methyl paraben & propyl paraben dissolve in ethanol till clear solution & this solution add in gel ) i.e. (A mixture)

**Step II :-** In another container take 18 ml water also add SLS & C.A.P.B heat at the temperature of about 75° C i.e (B mixture)

**Step III:-** Add (B mixture) in ( A mixture) very slowly & mix well ,at the end add Encapsulated Bhringraj oil beads.

#### **Formulation Tip**

Ingredients	Qty(%ww)
Xanthan Gum	2.2gm
SLS	4.82gm
Cocomido propyl betain (C.A.P.B)	4.82gm
Methyl Paraben	0.8 gm
Propyl Paraben	0.8 gm
Ethanol	2g m
Triethanolamine(TEA)	0.56 ml
Water	84 ml
Bhringraj Oil beads	2%

#### **INCI NAME:**

Microcrystalline cellulose, Hydroxy propylmethyl cellulose, Lactose, Eclipta Prostrata Extract.