



## FORMULATION AND EVALUATION OF MULTANI MITTI PEEL OFF MASK

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### ABSTRACT

Skin is a very sensitive and outer most layer of the human body which is exposed to environmental factors hence, it is very essential to protect the skin. There are various cosmetics available in market for skin care and have wide variety of cosmetics intended for facial application They can be a face mask, lotion, sun cream etc. Peel off mask is the type of dosage form which is gently applied onto the facial skin surface and is peeled off after few minutes of its application, but here we have a new concept of solid film peel off mask. It can be used as the remedy in treatment of facial skin related problems such as black hairs, dark-spots, dead skin and mainly used to open the closed pores due to

deposition of dust. Its main role is to Stimulate the metabolism due to its occlusive effect. Multani mitti is being added as an active ingredient in this formulation. The most important characteristic of an multani mitti is its cooling activity. Using it as an active ingredient in peel off solid film mask, it adds to its value by enhancing the role of peel off mask by absorbing dust particles and opening the clogged pores. Literature survey reveals many papers related to formulation of herbal peel off masks, but no any reported paper was found on solid film peel off mask. In this paper, we have formulated multani mitti solid film peel off mask and Evaluated it by using various tests methods. The formulation showed overwhelming results after its application on healthy female volunteers.

**KEYWORDS:** Multani mitti, Peel off solid film mask.

### 1. INTRODUCTION

Peel-off mask are high-quality powder masks which have been developed specifically for cosmetic treatment in the beauty salon. They are mixed with Ocean Mineral Activator and are immediately applied onto the face and neck, but also the neckline and e.g. hands, where they

form something skin to a second skin and impress with their intensive effect. While our mask is used by dipping twice in water and then applied on skin and it slowly hardens, moisture collects in the horny layer beneath the elastic mask film, which is impermeable to air and water.<sup>[1]</sup>

At the same time, the solid film peel-off masks' active substances and additional active substances, e.g. from ampoules, are able to penetrate particularly well into the skin and intensively supply the substances it requires within a short space of time. In Solid film peel-off mask film forming ingredients such as Polyvinyl alcohol (PVA) which forms a film on face after drying for few minutes. After removal, it provides clean, fresh and moisturized skin, removes dead skin layer and other debris deposited on the facial skin. The skin-cleansing and smoothening effect is revealed after just one application.<sup>[2]</sup>

Solid film peel off Mask gently stimulates the metabolism due to its occlusive effect. Waste products and accumulated tissue fluid are rapidly transported away. A significantly improved skin profile is rapidly achieved. The outer most layer of the body is skin which is open for contamination hence, it is essential to protect the skin.<sup>[3]</sup>

Solid film peel off mask can be used as the remedy in treatment of facial skin related problems such as black hairs, dark-spots, dead skin, white heads and mainly used to open the closed pores due to deposition of dust and then closing it. Its main role is to Stimulate the metabolism due to its occlusive effect heads.<sup>[4]</sup>

Most of the face peel off mask is prepared by polymers which can form thin layer on face. Peel off mask is available in gel form, paste form and as dry form, but here we formulate dry solid film peel off face mask. Solid film peel off mask can be used for cleansing and moisturizing the skin. Dead skin cells can be removed by dipping solid film in water for 2-3 times and apply on the face. Mask is to be kept as such for the time period of 15-20 minutes, the time may be varied according to the used ingredients. Some peel off mask required to be kept for 6-8 hours during night time for better result. It can be prepared with synthetic ingredients. Such as Multani Mitti and other ingredients like polyvinyl alcohol, polyethylene glycol, glycerine methanol, ascorbic acid and water. All the required physical test were successfully performed which gave positive desired results. Solid film peel off mask show a very efficient effect on to the skin. The most important characteristic of this peel off mask is its adsorption capacity. It removes a wide variety of particles or contaminants, which can be

either organic or inorganic contaminants. Using it as an active ingredient in peel off mask, it adds to its value by enhancing the role of solid film peel off mask by absorbing dust particles and opening the clogged pores.<sup>[5,6,7]</sup>

### Uses

The above prepared dry solid film is to be dipped in bowl of water for two to three times before use and then apply on the specified area of skin and let it to be dry.

The purpose of this study was to formulate the solid film peel off mask and its evaluation by using various herbal agents to make it easy to carry and economic.<sup>[9]</sup>

## 2. INGREDIENTS AND METHODOLOGY

### 2.1 Ingredients

Extract of cow urine, Polyvinyl Alcohol (PVA), Multani Mitti, Salicylic acid, Neem water, Aloe Vera, Carbopol, Turmeric, Ginger, Citric acid, Methyl paraben.

**Table 1: Ingredients used.**

Sr no.	Formulation Ingredients	Category	F1.	F2.	F3.
01.	Multani-Mitti +Turmeric	Active ingredient	20%	10%	10%
02.	Salicylic acid	Keratolytic Agent	2%	8%	8%
03.	Citric Acid	Preservative	5%	5%	5%
04.	Polyvinyl Alcohol(PVA)	Film Forming	10%	20%	10%
05.	Water	Solvent	61%	-	-
06.	Carbopol	Gel Formation	2%	2%	-
07.	Orange peel + Aloe gel	Moisturizer & Cleansing	-	15%	17%
08.	Gelatin	Film Base	-	5%	10%
09.	Cow urine Extract	Antiseptic & Psoriasis	-	35%	20%
10.	HPMC	Film forming	-	-	0.5%
11.	Neemwater extract		-	-	20%

### 2.2 Method

- Firstly, accurately weight the specified amount of filmforming agent.
- Then add small amount of water in it to make a semi-solid paste.
- Then properly stir the above paste and then add properly weighted salicylic acid & citric acid powder.
- Now, add specified amount of gelling agent to the above solution & add our active ingredient to the paste.
- Add quantity sufficient of water to the paste to obtain spreadable consistency.
- And then spread the solution on the backside of the petri-plate and dry it.

- After proper drying our film is ready to use.



**Figure 1: Figure of solid film mask and Figure of solid film mask in container.**

### **Evaluation parameter**

**Color, Odour, Consistency:** There was no film formed in formula F1. The color, odour, consistency were determined manually with Subjective evaluation.

**Folding Endurance:** The Manual measurement of the prepared solid films mask was done. Solid film peel off mask was applied on the surface of skin. After drying a portion of film (3x3 cm) was cut and is folded at the same place until it broke. The folding endurance is the value of the number of time the film can be folded without breaking.

**pH:** Digital pH meter is used to measuring the pH value of the film. Solution of one gram of film was used and measurement of pH of the formulation were taken thrice and average of value are calculated.

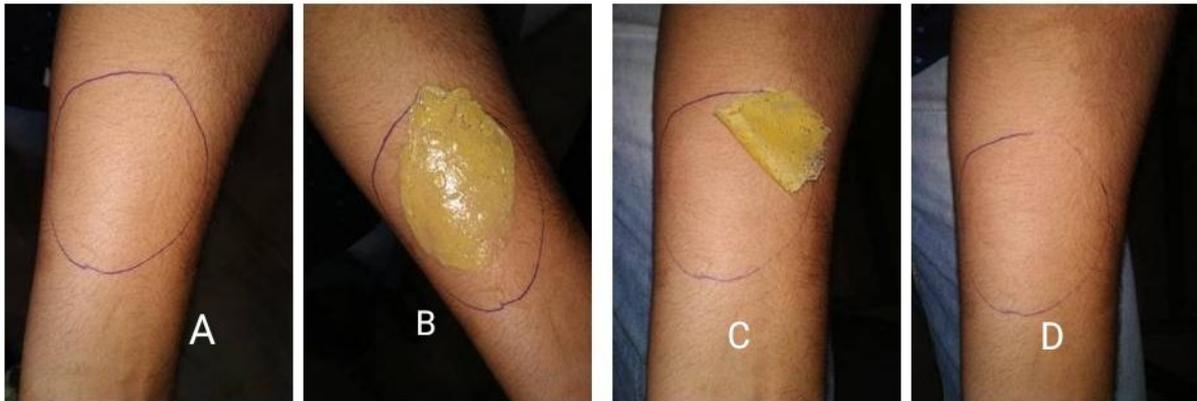
**Spreadability:** Spreadability of the solid film peel-off mask was found to be  $1.9 \pm 0.4$  cm respectively.

**Erythema and edema scoring method for skin reaction:** From the results observed there was No Edema and No Erythema observed on the skin surface and the score was found to be zero in both cases.

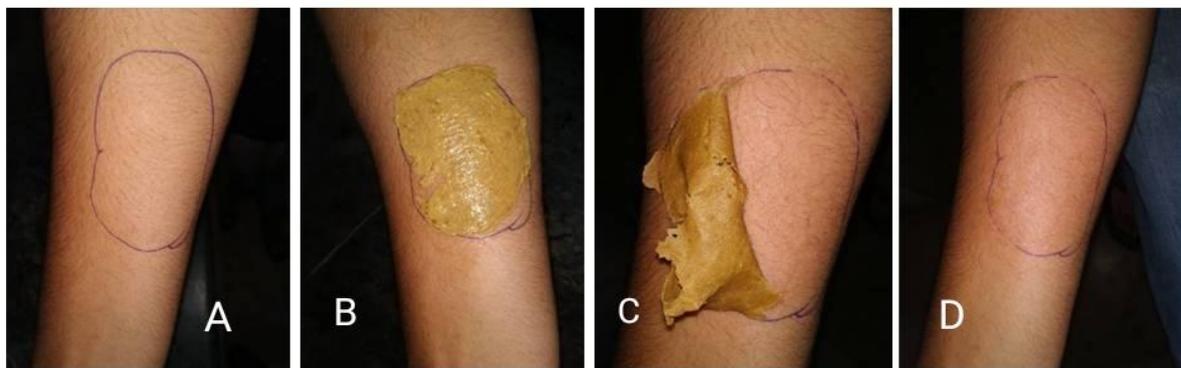
**Skin Irritation Study:** The formulated dry film peel off mask would be unsuitable for application on to the skin if it produces any skin irritation. It should not produce any skin

sensitization or irritation, after its application on the skin. Hence Draize modified scoring technique was used for its skin irritation study.

*Peel-Test:* The solid film peel-off mask was applied on the skin surface uniformly. The peel was allowed to dry. After 15-30 min the peel was removed from the skin surface. It was observed that the peel was removed easily without breaking.



**Figure 2:** Figure of hand before application (A), Figure of hand during application(B), Figure of hand after application(c), Figure of hand after removal of film(D).



**Figure 3:** of hand before application(A), Figure of hand during application (B), Figure of hand after application (c), Figure of hand after removal of film(D).

### 3. RESULT

**Table 2:** The prepared mask was evaluated and data was reported in table 2.

Test	F2	F3
Colour	Pale yellow to Brown	Pale yellow to Brown
Odour	Characterstics	Characterstics
Spreadibility	Smooth and light to spread	Smooth and light to spread
pH	6.5-7.5	6.5-7.5
Folding endurance	24	24

#### 4. CONCLUSION

The peel off mask showed a good spreadability. A good peel off property is shown by the formulation on human skin without causing skin edema or irritation. The study of this Multani Mitti solid film peel-off mask revealed that it is capable of removing the debris from skin-pores and increasing the cleanliness of the skin by removing dead skin cells from the surface. Within an hour of treatment the skin pores were also observed to be retaining the normal size; thus retaining the nutrients and moisture within the skin. The formulation was subjected to stability and thermodynamic stability studies. The formulations have good stability results and was found to be stable till 40°C. The erythema and skin irritation test were performed on healthy female volunteers. The erythema and edema score was found to be 0 and it was found to be non-irritant. The study of this Multani Mitti solid film peel-off mask revealed that it is capable of removing the debris from skin-pores and increasing the cleanliness of the skin by removing dead skin cells from the surface.

#### 5. REFERENCES

1. Priya A. Formulation and evaluation of Herbal exfoliate film containing cyphomandra betacea & phaseolus mungo. *Int Journal Pharm Biosci*, 2013; 4(3): 838–853.
2. McDougall GJ. The Physical Nature and Manufacture of Activated Carbon. *J.S. Afr. Inst. Min. Metall.*, 1991; 91(4): 109-120.
3. Velasco MVR, et al. Short-Term Clinical Of Peel-Off Facial Mask Moisturizers; *International Journal Of Cosmetic Science*, 2014; 36: 355-360.
4. Baby AR, Zague V, Maciel CPM, et al. Development of Cosmetic Mask Formulations. *Rev. Bras. Cienc. Farm*, 2004; 40: 159-161.
5. Temt Laboratories, Purifying Detox Mask-Peel Off Shaker Mask, 1-2.
6. Robert P. The Abs of Activated Carbon, Activated Carbon Properties Determine Filtration Performance, 15-16.
7. Halwagi E and Ponce O. Optimisation and Development of the peel-Off Gel Formulation For The Decontamination of Radiological Contaminants From Skin, 164-184.
8. Bickmore H. *A Comprehensive Manual*. Thomson publishers, 1995; 10-11.
9. Indian Standard. Face Masks Specification. 2<sup>nd</sup> Revision IS, 2004; 55204: 1-4.