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Formulation And Evaluation Of Activated Charcoal Peel Off Mask

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ABSTRACT

This study focuses on the formulation and evaluation of an activated charcoal peel-off mask incorporating lemon peel extract. Activated charcoal is well known for its adsorptive properties, helping to remove dirt, toxins, and excess oil from the skin. Lemon peel, rich in vitamin C, antioxidants, and citric acid, provides additional benefits such as skin brightening, exfoliation, and antimicrobial activity. The mask is formulated using natural ingredients along with suitable polymers to ensure proper consistency, spreadability, drying time, and peelability. The prepared formulation is evaluated based on key parameters, including pH, viscosity, drying time, spreadability, and efficacy in cleansing and improving skin texture. The results indicate that the activated charcoal peel-off mask with lemon peel extract effectively removes impurities, controls oil secretion, reduces acne, and enhances skin radiance.

INTRODUCTION

In recent years, skincare products incorporating natural ingredients have gained significant attention due to their safety, efficacy, and minimal side effects. Among these, peel-off masks have become popular for their ability to cleanse the skin, remove impurities, and provide a refreshing glow. Activated charcoal is well known for its excellent adsorption properties, making it highly effective in removing dirt, excess oil, and toxins from the skin. Lemon peel, a rich source of antioxidants, vitamin C, and citric acid, offers additional benefits such as skin brightening, exfoliation, and antimicrobial activity. The combination of activated charcoal and lemon peel extract in a peel-off mask enhances skin purification, reduces acne, and promotes a smooth complexion. This study focuses on the formulation and evaluation of an activated charcoal peel-off mask incorporating lemon peel extract. The mask is designed to provide deep cleansing, oil control, and skin rejuvenation while ensuring ease of application and removal. The formulation process includes the selection of suitable polymers and excipients to achieve the desired consistency, spreadability, and drying time. The final product is evaluated for key parameters such as pH, viscosity, spreadability, drying time, peelability, and overall effectiveness in improving skin texture. By utilizing natural and effective ingredients, this peel-off mask aims to provide an affordable, safe, and efficient skincare solution for individuals seeking a natural alternative to conventional facial treatments.

BENEFITS

1. Deep Cleansing & Detoxification Activated charcoal absorbs dirt, toxins, and excess oil, making the skin cleaner and fresher. Removes impurities from clogged pores, reducing blackheads and acne.
2. Oil Control & Acne Prevention Charcoal helps regulate sebum (oil) production, preventing excessive greasiness. Lemon peel's antimicrobial properties help combat acne-causing bacteria.
3. Skin Brightening & Exfoliation Lemon peel extract is rich in vitamin C and citric acid, which help lighten dark spots and improve skin tone. Removes dead skin cells, leaving the skin smooth and refreshed.
4. Anti-Aging & Antioxidant Protection Lemon peel contains flavonoids and antioxidants that fight free radicals, reducing signs of aging. Helps maintain skin elasticity and reduces fine lines.
5. Easy Application & Painless Removal The peel-off mask is easy to apply and remove, unlike traditional face masks or scrubs. It provides instant skin rejuvenation with minimal effort.
6. Cost-Effective & Chemical-Free Made from natural, affordable ingredients, making it a budget-friendly skincare option.

COMPOSITION TABLE

Sr. No.	Ingredients	Quantity Taken
1	Polyvinyl Alcohol	2gm
2	Gelatin Powder	2gm
4	Methanol	15ml
5	Charcoal Powder	0.5gm
6	Glycerine	2ml
7	Distilled Water	15ml
8	Lemon Peel Powder	1gm
9	Jasmine Essence	1drop

FORMULATION METHOD

Preparation of lemon peel powder: Take lemon peel and grate it and air dry it.

Step 1- collect all ingredients and weigh it properly.

Step 2- Preparation of polyvinyl alcohol solution. In a beaker add distilled water and methanol and boil it on water bath, after boiling add polyvinyl alcohol in it and stir it continuously.

Step 3 - Addition of gelatine powder: After the formulation of a gel of a polyvinyl alcohol, then add gelatine powder in it and stir continuously and then allow it to cool down.

Step 4 - Addition of glycerine and activated charcoal. After cooling down the step three mixtures add glycerine and activated charcoal in it and stir well.

Step 5 - Addition of lemon peel powder: After adding the activated charcoal add the lemon peel powder and then stir it.

EVALUATION TEST

- 1) Colour: Black in colour.
- 2) Consistency: Smooth and light to spread.
- 3) Odour: pleasant which last long even after washing the face with water.
- 4) Thickness measurement: Thickness of the film was measured at different points using digimatic vernier caliper. The average of 3 readings was taken as 0.19mm.
- 5) Moisture Content: The moisture content of the films was determined using Sartorius moisture analyser.

6) pH: The pH value of topical peel off gel was determined by using digital pH meter. One gram of gel was dissolved in 100 ml distilled water and stored for two hours. The measurements of pH of the formulation were done in triplicate and average value was found to be 5.5.

7) Spreadability: Spreadability of the peel-off gel was found to be 1.9 ± 0.4 cm respectively.

8) Drying time: Drying time checked manually. It takes 10-15 min.

RESULT AND DISCUSSION

Sr. No.	Parameters	Observations
1	Colour	Black
2	Odour	Pleasant
3	pH	5.5
4	Drying time	10-15 min
5	Consistency	Smooth
6	Thickness measurement	0.19 mm
7	Spreadability	1.9 ± 0.4 cm

We have performed activated charcoal peel off mask by using lemon peel powder, polyvinyl alcohol, gelatine, methanol, glycerine. In this lemon peel powder is main ingredient which is rich in vitamin c and antioxidants properties. We have performed evaluation tests like pH, spreadability, drying time, consistency, and thickness.

CONCLUSION

The formulation and evaluation of an activated charcoal peel-off mask using lemon peel extract successfully demonstrated its effectiveness in deep cleansing, oil control, exfoliation, and skin brightening. The evaluation parameters, including pH, consistency, spreadability, drying time, confirmed the mask's ease of application and effectiveness in removing impurities.

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