

## FORMULATION AND EVALUATION HERBAL PEEL OFF MASK

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Article Received on 13/03/2025

Article Revised on 02/04/2025

Article Accepted on 23/04/2025

## ABSTRACT

Skin care preparations are designed to exert local activity when applied over the skin and mucous membrane. These skin preparations include various forms like gels, lotions, ointments, creams, and peel-off masks. Peel-off masks are a unique dosage form that is gently applied to the facial skin surface and removed after a specified duration by peeling. This study focuses on formulating a Banana powder extract peel-off face mask. Banana powder is rich in potassium, vitamin B6, vitamin C, and various minerals that provide multiple skin benefits including moisturization, anti-aging properties, and skin brightening effects. The natural enzymes in banana help in gentle exfoliation while its antioxidant properties protect against free radical damage. The formulation incorporates sodium alginate, glycerin, gelatin, and citric acid as excipients. Various formulations were developed and evaluated for critical parameters including spreadability, pH, stability studies, and peeling time. The optimized formulation demonstrated parameters within acceptable standard ranges, indicating its potential as an effective cosmetic preparations.

**KEYWORDS:** Face Mask, Epidermis, Dermis, Hypodermis, Herbal Extract, Spreadability.

## INTRODUCTION

The term "herbal cosmetics" refers to beauty products that contain herbal elements and therefore exhibit desired physiological activity, such as healing, calming, appearance, boosting skin radiance, and conditioning qualities. These herbal cosmetics help rejuvenate, protect, and restore skin. Acne is one of the conditions that affect children the most, mainly those between the ages of 18 and 25. Teenagers who suffer from acne frequently feel self-conscious about their appearance and inferior. Herbal plants have along history of being used in medicine and cosmetic.

It is crucial to protect the skin since it is a highly delicate and protective covering of the body and is exposed to environmental contamination. In order to combat the issues linked with it, facial skin needs to be taken care of, and one way to do this is by utilizing face masks. A peel-off mask is applied to the face as a thin liquid film that is spread evenly using the fingers. After fully drying, the liquid film peels off the face as a thin plasticized film with no residue. It may deep clean pores, remove skin dirt, and tighten, rejuvenate, and heal facial skin. Peel-off can also slightly moisturize while enhancing the occlusive effect, which increases blood flow, activates skin cells, and removes.

Face packs can be used to treat, encourage, and prevent skin problems. An appealing powder for the face is called a face pack. A good herbal face pack should transport the vitamins and nutrients that the skin need to the subcutaneous tissues as well as provide the skin with the nutrition that it needs. Different herbal face packs are needed for different skin types. The use of Ayurvedic face packs.

**TYPE OF PEEL OFF FACE MASK<sup>[4]</sup>**

Masks, as we know them today, come as one of 4 categories.

**1. Peel off:** One continuous sheet was applied to the skin, left to dry for 30 minutes, and then peeled off. They are perfect for offering both a purifying and rejuvenating action and perception. When the polymeric network is removed, they efficiently remove the very top layer of old, dead skin cells to reveal younger-looking skin beneath.

**2. Sheet:** Sheet masks are the most versatile because they are effective serum formulations with actives added to achieve the product purpose, e.g.

- Whitening
- Anti-aging
- Anti-sebum

The sheet of the mask helps stabilize the formulation and give it the necessary structure, so little in the way of stabilizing and structuring ingredients are needed to achieve anything you wish based on the active selected.

**3. Leave-on:** These kinds of masks come in crème-gel or cream forms that are extremely moisturizing. They are applied to the skin, kept on for 15 to 30 minutes (or overnight), and then the remaining product is rubbed in. They are meant to deliver more moisture and emollience than regular creams, hence they have greater lipid and humectant content.

**4. Charcoal/clay:** With the addition of charcoal or clay, these types of masks serve as necessary cream cleansers. Additionally, this increases viscosity. Clay and charcoal are excellent food sources for microorganisms, but they should be purchased properly prepared. So proper preservation is crucial for this product.

## REVIEW OF LITERATURE

**1. Pooja Birade, Yogini Shete et al (2024)** Peel-off masks have gained widespread popularity and preference due to their convenient application. The gel-based variant is particularly favored for its painless and moisturizing sensation during use. A peel-off mask is a type of application gently applied to the facial skin surface and peeled off after a few minutes, serving as a remedy for various facial skin issues such as wrinkles, aging, acne, and aiding in unclogging pores blocked by dust. The choice of a gel-based formulation enhances ease of use and ensures better drug release

**2. Suparman Supardi et al (2024)** Skin is a body component that is often picked because of its attractiveness. Acne is the most common skin problem that causes changes in the face, including swelling, redness, and pus, which causes pain. Basil leaves (*Ocimum sanctum*) are one of the beneficial herbal plants and have antibacterial qualities in the production of peel-off gel mask treatments. This study aims to advance the peel-off gel mask formula from basil leaf extract (*Ocimum sanctum* Linn) as a more natural and effective skin care alternative

**3. Mohammad Mehdi Nemati, Mehdi Abedi, Younes Ghasemi, Hajar Ashrafi, Mobin Haghdel et al (2024)** Peel-off masks are a good option for adding active ingredients into a plastic film that is made to be easily removed without leaving any residue. Plants include an enormous number of physiologically active chemicals that have a substantial impact on human skin.

**4. Shruti Khot\*, Shubhangi More and Pratibha Adnaik et al (2024)** When placed across the skin's mucous membrane, skin care products such as gel, lotion, ointment, cream, peel-off masks, etc. are intended to have a localised effect. A peel-off mask is a sort of dosage form that is applied softly to the surface of the face and removed after a few minutes. It is intended to

treat common skin issues and to tighten, moisturise, and remove tan lines from the skin.

**5. Shreya Lokhande, Shraddha Mankar, Achal Satpute, Monika Jadhao et al (2024)** When applied across the skin's mucous membrane, skin care products including gel, lotion, ointment, cream, peel-off masks, etc., are meant to have a localised effect. A peel-off mask is a type of dosage form that is gently placed to the face and taken off after a short while. It is said to tighten, moisturise, and eliminate tan lines from the skin in addition to treating common skin problems.

**6. Fadhilla Dwi Utari, Najmi Hilaliyati, Tika Afriani et al (2024)** Pegagan leaf (*Centella asiatica* (L) Urb.) is a plant that contains flavonoids, tannins, triterpenoids, and saponins that function as antibacterials. Pegagan leaf is combined with activated charcoal powder, which has the job of absorbing facial oil, so that it is formulated in the form of a peel off mask to produce a synergistic effect. This study aims to formulate, evaluate, and test the antibacterial effectiveness of the peel-off mask preparation of pegagan leaf extract at concentrations of 1.5%, 2%, and 2.5%.

**7. Hajar Ashrafi, Melika Havaie, Mohammad M Zarshenas et al (2024)** As the first link in the ecological chain, plants play an important role in human life. Their application as a group of ingredients in cosmetic products is one of the most important issues in the field of specialized skin and beauty management. Among these plants, the mastic plant and the preparation, gum, with the scientific name *Pistacia lentiscus* L., (*Anacardiaceae* family) are interesting for producing cosmetic products. In the present study, Mastic gum has been evaluated in terms of preparation for a Peel-off gel mask as well as assessment of physicochemical and phytochemical properties.

**8. Ms Pallavi B Jire, Ms Mayuri V Mali, Ms Mayuri V Khairnar, Ms Sulbha G Patil, Mrs Amruta N Patilet al (2023)** It is important to protect the skin because it is a highly delicate and protective covering of the body that is susceptible to environmental contamination. Applying different cosmetics made specifically for facial use, such as creams, lotion face masks, peel-off masks, can protect the facial skin. Peel-off masks are a sort of dosage form that are softly placed to the surface of the facial skin and removed after a short period of time.

**9. Priyanka Shukla, Shashank Tiwari, Sadhana Singh, Aman Yadav et al (2023)** Over the past few years, activated charcoal has been used as an active ingredient in cosmetic products. Due to its adsorbing properties, it is well being used in all kinds of beauty products from face masks to cleansers and also even soaps. Activated charcoal is used as an active ingredient in this formulation. Natural remedies are more acceptable in the belief that they are more safe with fewer side effects

than the synthetic formulations. Herbal formulations have growing demand in the world market.

**10. Arnetta Evania, Senda Kartika Rakainsa et al (2023)** Pomegranate peel (*Punica granatum L.*) is a part of the pomegranate fruit which is used as a traditional medicine for acne. This study aims to make peel-off masks of the ethanol extract of pomegranate peels and to determine the antibacterial activity of peel-off masks against acne-causing bacteria *Staphylococcus epidermidis* and *Staphylococcus aureus*.

**11. RI Pratiwi, W Amananti et al (2023)** Peel-off masks have been developed as a face care cosmetic preparation in liquid form. Guava fruit (*Psidium guajava*) contains flavonoids that are effective in removing acne and clearing blackheads. Lime (*Citrus aurantifolia*) contains flavonoids used as a skin rejuvenator. This study aims to identify the flavonoid compounds contained in guava (*Psidium guajava*) and lime (*Citrus aurantifolia*) and the best concentration as a peel-off mask preparation.

**12. Rini Tri Hastuti, Regia Desty Rakhmayanti et al (2022)** Apple is a plant that has the potential of antioxidant activity. Apples contain antioxidants which are good for skin health. Green apples contain lots of vitamins, such as vitamins A, B, C, minerals, and fiber. Green apple containing phytochemical compounds in the form of catechins, epicatechins, ploridzin, quercetin, ellergic acid, and colorogenic acid. Peel-off gel mask is a skin care cosmetic preparation in gel form and after being applied to the skin for a certain time until it dries, this preparation will form a transparent, elastic film layer, so that it can be peeled off.

**13. Sneha Agrawal, Akshada Kadam, Shrutika Sonavale, Pratiksha Mulik et al (2022)** Skin care preparations are designed to exert local activity when applied over the skin mucous membrane, these skin preparations include gel, lotion, ointment, cream, peel off mask etc. Peel off mask is the type of dosage form which is gently applied onto the facial skin surface and is peeled off after a few minutes of its application. It is used as the remedy to treat facial skin related problems and tightening of skin, moisturizing and tan removal from the skin.

**14. Syamsuri Syakri, Isriany Ismail, Nurul Muamanah Amal, Nur Asma Masjidi, Karlina Amir Tahir et al (2021)** Yarrow extract (*Achillea millefolium*) is recognized to have powerful antioxidants that protect the skin from free radical damage, skin whitening, and anti-aging properties. the application of antioxidants on the skin can be packaged into a peel-off gel mask preparation for face skin care.

**15. Nidhi Asthana, Kaushik Pal, Alaa AA Aljabali, Murtaza M Tambuwala, Fernando Gomes de Souza, Kamlesh Pandey et al (2021)** An emerging herbal product

‘Aloe vera’ is most widely utilized for skin treatments due to its gel-components of the plant are known to heal the skin from a variety of minor ailments. The applicability of the evaluated formulations was influenced by the polyvinyl alcohol content due to their ability to alter the formulation viscosity. Their properties, relating mechanism and corresponding applications were deeply investigated.

**16. Irma Zarwinda, Fauziah Fauziah, Jumirna Jumirna, Azmalina Adriani et al (2021)** This research aims to formulate and assess the efficacy of the peel-off mask as an anti-acne of ethanol extract from bilimbi leaves (*Averrhoa bilimbi L.*). The method used was an experiment, evaluating the extract through the inhibition test of *Staphylococcus epidermidis* bacteria with the paper disk diffusion method. The peel-off mask formulation added the extract with a concentration of 7%(F1), 9%(F2), 11%(F3), and without using extract (F0).

**17. Sani Ega Priani, Restianti Mutiara, Dina Mulyanti et al (2020)** The bark of cinnamon (*Cinnamomum burmannii*) contains cinnamaldehyde and other active substances with potent antioxidant properties. Antioxidants are effective at preventing and reducing UV-induced skin damages and skin aging. This study was intended to formulate and characterize the antioxidant peel-off facial masks containing cinnamon bark extract and the combination of polyvinyl alcohol (PVA) and hydroxypropyl methylcellulose (HPMC) as gelling agents.

**18. Sweta V Kulkarni, Dr Arun K Gupta, Shubham Bhawsar et al (2019)** Skin is a very sensitive and protective layer of the human body which is exposed to environmental pollution hence, it is very essential to protect the skin. The facial skin can be protected by applying various cosmetics intended specially for facial application, It can be a cream, lotion face mask or peel off mask 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. It is used as the remedy to treat facial skin related problems such as wrinkles, ageing, acne 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.

**19. Patihul Husni, Ella Masliana Dewi et al (2019)** Mung bean (*Vigna radiata (L.) Wilczek*) is one of the plants that rich in antioxidant compound. Antioxidant is a compound that can inhibit the skin aging process because of photoaging. The aim of this study was to formulate peel-off gel mask containing mung bean (*Vigna Radiata (L.) Wilczek*) extract using polyvinyl alcohol (PVA) as a base of mask and Hydroxy Prophyl Methyl Cellulose (HPMC) as a viscosity increasing agent and to determine the antioxidant activity of the peel-off gel mask.

20. Ahmad Budiman Siregar, Rumondang Bulan, Yuniarti Yusak *et al* (2018) Antibacterial hmad Budiman Siregar, Rumondang Bulan, Yuniarti Yusak *et al* (2018) Antibacterial and antioxidant activities have been conducted using methanol extract of leave and stem bark of Artocarpus for its application as peel-off mask.

## 2. RATIONAL OF THE STUDY:- NEED OF WORK

The need for this study arises from the demand for natural, effective, and safe skincare products that leverage the benefits of fruit-based ingredients. The current skincare market sees a rising trend towards organic and plant-derived formulations, as consumers seek alternatives to chemical-laden products that may cause irritation or adverse reactions. Banana Peel powder extract, rich in vitamins and minerals, offers several beneficial properties, including hydration, antioxidant protection, and anti-aging effects, making it an ideal choice for skincare applications.

Despite the availability of peel-off masks, there are limited studies focusing on banana-based formulations, particularly for products that provide both exfoliation and moisturization. The inclusion of sodium alginate, glycerin, gelatin, and citric acid in the formulation addresses essential factors like stability, spreadability, and ease of application and removal. Evaluating parameters such as pH, stability, peeling time, and spreadability is critical to ensure product quality and safety, as well as consumer satisfaction.

This study, therefore, aims to bridge the gap by developing a novel peel-off mask that harnesses banana peel powder's skin-benefiting properties. Through careful optimization and evaluation of the formulation, this research seeks to contribute to the field of natural cosmetics by offering a product with promising efficacy and potential

## OBJECTIVE

1. To study the formulate and evaluate a banana peel powder- based peel off mask that utilizes the natural bioactive compounds present in banana peels for effective skincare benefits.
2. To rehydrating the skin.
3. To evaluate the physiocochemical properties of the mask, including, pH, viscosity and peeling.

## PLAN OF WORK

Selection of herbal drug :

Authentication test of drug :

Experimental design:

Material and methods:

Formulation tables:

Methods of preparation:

Evaluation test:

Result and discussion:

Conclusion:

Reference:

Selection of pure drug

## Authentication test for glycerin

### 1. Acrolein Test

Procedure: Heat glycerin with potassium bisulfate ( $\text{KHSO}_4$ ) in a test tube. Observation: A pungent smell of acrolein is observed if glycerin is present.

Principle: When heated with potassium bisulfate, glycerin undergoes dehydration to form acrolein ( $\text{CH}_2=\text{CHCHO}$ ), which has a strong, unpleasant odour

### 2. Solubility Test

Procedure: Mix glycerin with water.

Observation: Glycerin dissolves completely, indicating its solubility in water. Principle: Glycerin is miscible in water due to its hydrophilic hydroxyl groups

## 2 identification test

### 1. Fehling's Test

Procedure: Heat glycerin with Fehling's solution (a mix of copper sulfate, sodium potassium tartrate, and sodium hydroxide).

Observation: A red precipitate of cuprous oxide ( $\text{Cu}_2\text{O}$ ) forms, confirming the presence of a reducing alcohol.

Principle: Glycerin reduces copper (II) ions to copper (I) oxide under alkaline conditions.

### 2. Oxidation Test

Procedure: Add a few drops of potassium permanganate ( $\text{KMnO}_4$ ) to a glycerin solution in acidic conditions.

Observation: The pink color of  $\text{KMnO}_4$  fades, showing glycerin's reducing property. Principle: Glycerin acts as a reducing agent, reducing permanganate ions to manganese ions

## Authentication Tests for Sodium Alginate

### 1. Solubility Test

Procedure: Add a small amount of sodium alginate to water and stir. Observation: Sodium alginate dissolves to form a viscous, gel-like solution.

Principle: Sodium alginate is hydrophilic and forms a colloidal solution in water due to its polysaccharide structure.

Procedure: Add a few drops of calcium chloride solution to a sodium alginate solution. Observation: A firm, insoluble gel or precipitate forms.

Principle: Sodium alginate reacts with calcium ions to form calcium alginate, which is insoluble and forms a gel.

## Identification Tests for Sodium Alginate

### 1. Ethanol Precipitation Test

Procedure: Add ethanol to a sodium alginate solution and stir.

Observation: Sodium alginate precipitates out as fibrous or stringy material.

Principle: Sodium alginate is insoluble in ethanol, causing it to precipitate when ethanol is added.

### 2. pH Test

Procedure: Dissolve sodium alginate in distilled water and measure the pH using a pH meter or indicator paper.



Observation: The pH is typically between 6 and 8.

Principle: Sodium alginate has mildly acidic to neutral properties due to its carboxylate groups.

#### Authentication Tests for Citric Acid

##### 1. Solubility Test

Procedure: Dissolve a small amount of citric acid in water.

Observation: Citric acid dissolves completely in water, forming a clear solution. Principle: Citric acid is highly soluble in water due to its polar carboxylic acid groups.

##### 2. Acidity Test

Procedure: Add litmus paper to the citric acid solution. Observation: The blue litmus paper turns red.

Principle: Citric acid is a weak organic acid that shows acidic behavior in solution.

#### Identification Tests for Citric Acid

##### 1. Melting Point Test

Procedure: Heat a small sample of citric acid and measure its melting point. Observation: Citric acid melts at approximately 153°C.

Principle: The melting point is a characteristic property of pure citric acid.

##### 2. pH Test

Procedure: Measure the pH of a citric acid solution.

Observation: The pH of a 1% citric acid solution is approximately 2-3. Principle: Citric acid, being a weak acid, lowers the pH of aqueous solutions.

#### Authentication Tests for Rose Water

##### 1. Organoleptic Test

Rose water should have a distinct, natural rose fragrance and a clear, colorless appearance. Any off-smells or discoloration may indicate impurities or artificial additives.

##### 2. Solubility Test

Mix rose water with an equal amount of distilled water.

It should dissolve completely without producing turbidity or oil separation, indicating purity.

#### Identification Tests for Rose Water

##### 1. Volatile Oil Test

Distill rose water and examine for traces of rose essential oil.

Genuine rose water will produce a thin layer of volatile oil on the surface after distillation.

##### 2. pH Test

Measure the pH of rose water using a pH meter or indicator paper. Authentic rose water typically has a mildly acidic pH between 4.0 and 5.5.

#### DRUG PROFILE

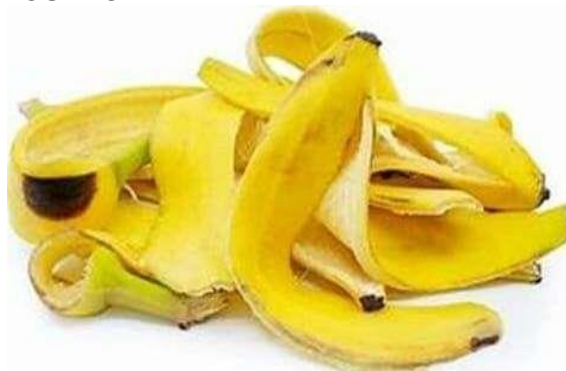


Fig no. 1 Banana Peel.

- **Name:** Banana Peel
- **Synonym:** Banana Husk
- **Family :** Musaceae
- **Parts To be used:** Outer Skin
- **Geographic Sources:** Tropical regions of Southeast Asia, India, and northern Australia. The fruit evolved from the natural hybrids and species of *Musa acuminata* and *Musa balbisiana*, which were originally found in the rainforests of Southeast Asia.
- **Medicinal Uses:** Acne treatment, Anti Aging Properties, Anti Oxidant



Fig No. 1.2: Rose Water.

- **Name:** Rose water
- **Synonym:** Rose Hydrosol, Rose floral Water
- **Family:** Rosaceae
- **Parts To be used:** Rose Petals
- **Geographic Sources:** Asia Most rose species are native to Asia.  
North America: A smaller number of rose species are native to North America. Europe and northwest Africa: A few rose species are native to Europe and northwest Africa
- **Medicinal Uses:** Acne treatment, Toner, eye Car.



Fig no. 1.3 Alovera.

- **Name:** Aloevera
- **Synonym:** Aloe Barbadensis
- **Family:** Asphodelaceae
- **Parts To be used:** Alovera Gel
- **Geographic Sources:** Aloe vera is native to the Arabian Peninsula, Madagascar, and Africa. It's believed to have originated in the Hajar Mountains of the Arabian Peninsula, in the eastern United Arab Emirates and northeastern Oman.
- **Medicinal use;** reduce acne, Anti Ageing



Fig no. 1.4 Gelatin.

**Gelatin powder**

**Synonym:-** Hydrolyzed collagen, Gelatine (British English spelling), Collagen, hydrolysate, Hydrolysate gel

**Molecular formula:-** C<sub>13</sub>H<sub>20</sub>N<sub>2</sub>O<sub>4</sub>

**Molecular weight:-** It typically ranges between 15,000 to 400,000 Da

**Chemical name:-** Gelatin is chemically referred to as collagen-derived protein or simply partially hydrolyzed collagen.

**Properties**

1. Physical Appearance: Yellow to light amber, odorless, tasteless powder or granules.
2. Solubility: Soluble in hot water; insoluble in cold water but swells.
3. Gel Formation: Forms a gel when dissolved in hot water and cooled.

**Uses**

1. Pharmaceutical Industry  
Used in the manufacturing of capsules and tablets. Acts as

a stabilizer in vaccines and biologics.

**2. Cosmetic Industry**

Found in shampoos, face masks, and creams for its thickening properties,



Fig No: 1.5 Sodium Alginate.

**Synonym :-** Algin, Sodium polymannuronate, E401 (as a food additive code)

**Molecular formula :-** NaC<sub>6</sub>H<sub>7</sub>O<sub>6</sub>

**Molecular weight :-** The average molecular weight of sodium alginate is 216.121 grams per mole (g/mol).

**Chemical name :-** Sodium alginate, Sodium salt of alginic acid

**Properties**

1. Physical Appearance: White to pale yellowish powder or granules.
2. Solubility: Soluble in water, forming a viscous solution; insoluble in organic solvents like alcohol.
3. Viscosity: Forms gels in the presence of calcium ions (cross-linking property).

**Used as a tablet binder and disintegrant**

Used in wound dressings due to its gel-forming ability.

**2. Cosmetic Industry**

Used in creams, lotions, and face masks for its gel-forming and moisture-retention property.

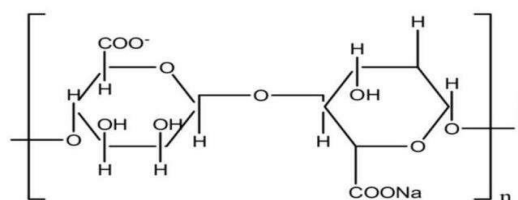
**Structure**

Fig no 1.6: Citric acid.

**Synonym** :-2-Hydroxy-1,2,3-propane-tricarboxylic acid E330 (as a food additive code)

Citronensäure (German name) **Molecular formula**:- C<sub>6</sub>H<sub>8</sub>O<sub>7</sub> **Molecular weight** :-192.12 g/mol

**Chemical name** :- 2-Hydroxypropane-1,2,3-tricarboxylic acid.

#### Properties

1. Physical Appearance: White, crystalline powder or colorless crystals.
2. Solubility: Highly soluble in water; slightly soluble in ethanol.
3. Melting Point: 153 °C (decomposes upon further heating).
4. Taste: Strongly acidic and sour taste.
5. pH: Citric acid solutions have a pH range of 2–3, depending on concentration.
6. Odor: Odorless

#### USES

Pharmaceutical Industry:

Used as a pH adjuster in syrups and medicines.

Included in effervescent tablets to create a fizzing effect.

Chelates metal ions in formulations to improve stability.

Cosmetic Industry:

Used in skin-care products as an exfoliant (alpha-hydroxy acid). Adjusts pH in shampoos, lotions, and creams.

#### Structure

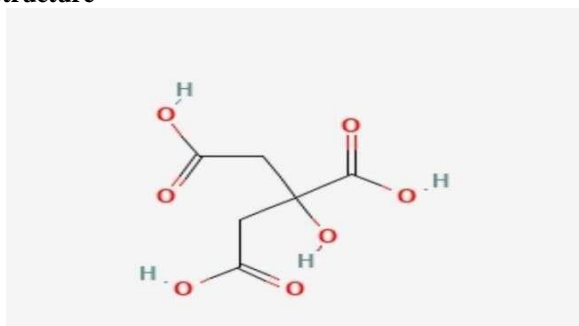


Fig no:1.7 Glycerin.

**Synonym** :-Glycerol, Propane-1,2,3-triol, 1,2,3-Propanetriol, E422 (as a food additive code)

**Molecular formula** :-C<sub>3</sub>H<sub>8</sub>O<sub>3</sub> **Molecular weight** :- 92.09 g/mol **Chemical name** :-Propane-1,2,3-triol

**Properties :-1. Physical Appearance:**Clear, colorless, viscous liquid with a sweet taste.

**2. Odor:**Odorless.

**3. Solubility:** Miscible with water, alcohol, and most polar solvents; insoluble in oils.

**4. Boiling Point:**290 °C.

**5. Melting Point:**18.2 °C.

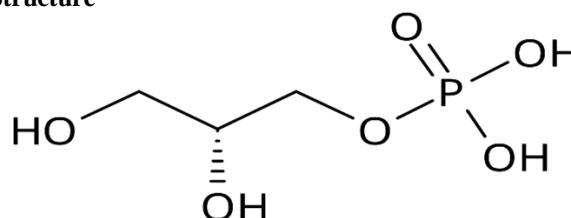
**6. Density:**Approximately 1.26 g/cm<sup>3</sup>.

**7. Hygroscopic:**Absorbs moisture from the air.

#### Uses

Cosmetic Industry:A key ingredient in moisturizers, creams, and lotions for its hydrating properties.

#### Structure



### 3. MATERIALS AND METHODS

#### 1.1 List of materials

Table 6.1: List of materials.

Ingredients	Principal	Quality Taken
Sodium Alginate	Film Forming Agent	10gm
Gelatin	Thickening Agent	14gm
Citric Acid	Preservative	1ml
Banana Peel Powder	Active Ingredient	14gm
Aloe Vera	Active Ingredient	3ml
Rose Water	Perfume	5ml
Glycerin	Moisturizer	10ml
Water	Solvent	As requirment

#### 1.1.1 Glassware's and instruments: Beaker, Heating Mantle, Weighing Balance.



**Formulation no 1.****Table: 6.2.**

Ingredients	Principal	Quality Taken
SODIUM ALGINATE	Film Forming Agent	10gm
GELATIN	Thickning Agent	10gm
CITRIC ACID	Preservative	1ml
BANANA PEEL POWDER	Active Ingredient	14gm
ALOE VERA	Active Ingredient	4ml
ROSE WATER	Perfume	2ml
GLYCERIN	Moisturizer	8ml
WATER	Solvent	10ml

**Formulation no 2.****Table: 6.3.**

Ingredients	Principal	Quality Taken
SODIUM ALGINATE	Film Forming Agent	12gm
GELATIN	Thickning Agent	8gm
CITRIC ACID	Preservative	2ml
BANANA PEEL POWDER	Active Ingredient	14gm
ALOE VERA	Active Ingredient	1ml
ROSE WATER	Perfume	2ml
GLYCERIN	Moisturizer	8ml
WATER	Solvent	10ml

**Formulation 3.****Table: 6.4.**

Ingredients	Principal	Quality Taken
SODIUM ALGINATE	Film Forming Agent	10gm
GELATIN	Thickning Agent	14gm
CITRIC ACID	Preservative	1ml
BANANA PEEL POWDER	Active Ingredient	14gm
ALOE VERA	Active Ingredient	3ml
ROSE WATER	Perfume	5ml
GLYCERIN	Moisturizer	10ml
WATER	Solvent	As required

**Fig no. 1.8 Insoluble in water,****Fig no. 1.9 Banana peel powder.**



## 5.2 METHODS

1. All ingredients were prepared and weighed.
2. At 80 °C, rose water was used to create sodium alginate and the same water was used to create gelatin.
3. Gelatin was mixed with sodium alginate before being added.
4. Add hot distilled water and dissolved citric acid to the mixture.
5. Then, in a beaker glass while swirling, all of the ingredients are combined with glycerin and herbal banana peel powder.
6. Additionally, distilled water was added until the volume was 100% w/w of total volume



Fig no.2 Heating Metal/

### Evaluation Test

#### 1) Organoleptic Properties

We have done the visual inspection of product and observed that it was

- Colour- pale Brown. The visually colour was checked.
- Odour- Odour was found by smelling the product.
- State- semi-solid
- pH- The ph value of this herbal peel off mask was determined by using pH paper and pH value of this Banana peel off mask was found to be 5. mm

#### 2) SPREADIBILITY TEST

Placed 1 gm formulation on a butter paper and on the formulation puwatch glass. After that 5gm weight was placed on watch glass for 2 minute to compress the sample to uniform thickness and its diameter was measured

#### 3) IRRITANCY TEST

The irritation test was done by applying a formulation on hand's back skin and leave it for 15 minutes to check irritation reaction such as swelling, itching and redness effect on the Skin.

PEEL OFF TEST- The formulation film of 4x4mm was spread on backside of the hands skin. Leave it for 15-20 minutes to dry properly. After 15-20 minutes, peel off the

dry film from the skin surface. Easy removal of peel without any complication was observed.

#### 4) AFTER FEELING

After the utilization of fixed measure of peel off face mask emollience, thickness, and measure of build-up left was checked.

5) **REMOVAL TEST-** The peel off face mask was applied on the skin was handily taken out by peeling.

6) **SEBUM REDUCTION-** wash the face with a mild cleanser and let it rest for 15 to 30 minuttess in a normal temperature environment this allows the skin natural sebum levels to stabilize.

7) **SEBUMETER STRIP-** :press the sebumeter strip lightly on the skin (forehead, nose or cheeks) for about 30 seconds.

8) **PORE CLEANSING TEST-** A through pore cleaning process involves gentle cleansing twice daily, regular exfoliation, steam facial, or professional extraction to remove debris and prevent clogged pores.



Fig. no. 2.1 Spredeability.

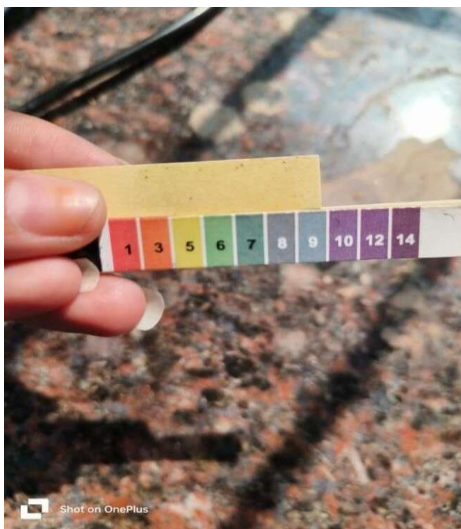


Fig no.2.2 PH Test



Fig No.2.3 Peel Off.

## RESULT AND DISCUSSION

The product has a pH of 5.0, which is mildly acidic and compatible with the skin's natural pH. Upon application, it provides a cool and soothing sensation, indicating it could be ideal for refreshing or calming purposes.

Its spreadability is good, ensuring it applies evenly and smoothly over the skin. The consistency is smooth and thick, giving it a luxurious feel and better adherence to the surface. Additionally, the product is stable, showing no signs of separation or texture changes, ensuring durability and reliability over time. Overall, it appears to be a high-quality formulation suitable for topical use.

## OBSERVATION TABLE

Table 7.1.

Sr.No	Parameters	Observation
1	PH determination	5mm
2	After feeling	Cool
3	Spreadability	Good
4	Consistency	Smooth and thick
5	Stability	Stable

## 7.2 Identification Test

Table 7.2: Identification test of Banana peel powder.

Sr.No	Parameters	Observation
1	Colour	Pale Brown
2	Odour	Pleasant
3	State	Semi solid
4	PH	5mm

## ACKNOWLEDGEMENT

At the finishing stage of this thesis work, when I retrospect, the finest part of my academic career spent in Rajesh Bhaiyya Tope College of B pharmacy, Chhatrapati Sambhaji Nagar, a sense of obligation drives me to leave a note on appreciation and gratitude to one and all matter in attaining this goal of life. With profound gratitude and thankfulness I wish to acknowledge my research guide **Ms. Ashwini Pundkar**, Assistant Professor, for her expertise and inspiring guidance throughout the period of my work. I am indebted to her for enlightening me on the finer skills of dealings with formulation problems. It would have been impossible to achieve this goal without the support and encouragement from My biggest supporter **Mrs. Manorama Pardesi**. I consider myself fortunate to be associated with her who gave a decisive turn and significant boost to my career. It gives me an immense pleasure and pride to express my deep sense of gratitude and respect to **Ms. Prachi Murkute** as a Head of the Department for providing the infrastructure and necessary facilities. I am grateful to thanks to **Dr. Santosh Payghan** Principle of Rajesh Bhaiyya Tope College, Chhatrapati Sambhajanagar for his/her constant encouragement. I am also thankful to all faculty member of Institute of Pharmacy Rajesh Bhaiyya Tope College, Chhatrapati Sambhajanagar as well all lab assistants and my beloved friends for their support and helpful discussions during this period. This thesis would not have seen the light of the day without the moral support, love and affection from my parents **Shri. Mahendra Purnapatre** and **Smt. Shital Purnapatre** who might have dreamt that I reach all my success. Their blessings and care always gave me new enthusiasm to do something more with perfection.

## CONCLUSION

In conclusion, herbal peel masks, such as those made from banana peels, represent a natural and effective approach to skincare. These masks harness the beneficial properties of herbal ingredients, offering numerous advantages, including.

**Natural Ingredients:** Herbal peel masks are typically composed of organic, plant-based ingredients that are gentle on the skin, making them suitable for various skin types, including sensitive skin.

**Nutrient-Rich:** Ingredients like banana peels are packed with vitamins, antioxidants, and minerals that help nourish, hydrate, and rejuvenate the skin.

**Exfoliation:** Herbal peel masks provide gentle

exfoliation, removing dead skin cells and promoting a smoother, brighter complexion without the harsh effects of synthetic chemicals.

**Targeted Benefits:** Different herbs can address specific skin concerns, such as acne, dryness, or signs of aging, allowing for customized skincare solutions.

**Eco-Friendly:** By utilizing byproducts like banana peels, herbal peel masks promote sustainability and reduce waste, making them an environmentally friendly choice.

**Holistic Wellness:** The use of natural ingredients aligns with holistic wellness principles, focusing on the overall health of the skin and the body.

Overall, herbal peel masks not only contribute to healthier skin but also support a more sustainable and natural approach to beauty. Incorporating these masks into a skincare routine can enhance skin health while minimizing the reliance on chemical-laden products.

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