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Review on Cosmetics Science Preparation and Evaluation of Shaving Cream

Mr. Ketan Popat Awale. Mr. Sohel Liyakat Momin. Mr. Akshay Pandit Dange.
Guide Name: **Mr. Pramod B. Chikkodi.**
Department of Pharmaceutics.
Nootan College of Pharmacy, Kavthe, Mahakal, India

Abstract: *Shaving Cream is a topical product designed to facilitate the process of shaving by providing a lubricating barrier between the razor and the skin. It aims to reduce friction during shaving, prevent nick and cuts, and promote a smooth glide for the razor. In addition to its primary function, shaving cream also serves to moisturize and protect the skin, minimizing irritation and razor burn. This paper reviews the formation aspects of shaving creams, encompassing various ingredients and preservatives. These components contribute to the cream's texture, stability, and effectiveness, allowing for customization based on user preferences.*

Keywords: Shaving Cream

I. INTRODUCTION

Advantages:

- Protect your Skin.
- To improved Glide.
- No Length limit.
- Short-lived results.
- May result in thinner hair regrowth.
- Cheaper cost.

Disadvantages:

- It may your skin.
- Risk of cuts and nicks.
- Skin Darkness and Irritation.
- Skin Allergic Reactions.

Ideal Characteristics of Shaving Creams.

- Choose a scent that you like.
- Different shaving cream are suitable for different skin types.
- Shaving Cream can remove natural oils form the skin.
- The Shaving Cream should be easy to apply with your hand.

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- It also apply with shaving brush. 6.Non-irritating.
- Easy to remove form skin.
- It should be stable in range of temperatures.
- It should not be corrosive to razor blades.
- It should be easy to rinse off.

Choosing the best Shaving Creams.

- Consider the Ingredients.
- Check for Allergies.
- Determine your Shaving Needs.
- Look for Value for Money.

Introduction of the Cosmetic Industry.

The Cosmetic industry is a diverse and dynamic sector that focuses on the development, manufacturing, and marketing of products intended to enhance or alter the appearance of the human body. This industry encompasses a wide range of products, including skincare, haircare, makeup, fragrances, and personal hygiene items. It plays a vital role in personal grooming, self-expression, and beauty culture, with consumers increasingly seeking innovative products that cater to their specific needs and preferences.

With the rise of e-commerce and social media, the cosmetic industry has experienced significant growth and transformation. Brands leverage digital platforms to engage directly with consumers, while trends in sustainability and clean beauty have prompted the development of products made with natural, eco-friendly ingredients. The global market for cosmetic continues to expand

However, the cosmetic industry also faces challenges, including regulatory compliance, safety concerns, and ethical considerations regarding animal testing and ingredient sourcing. As such, understanding the legal framework governing cosmetics is essential for stakeholders within the industry.

Overview of the Drug and Cosmetic Act (1940 and 1945)

The Drug and Cosmetic Act 1940, was enacted in India to regulate the import, manufacture, distribution, and sale of drugs and cosmetics with a focus on ensuring their safety, efficacy, and quality. The Act, along with its subsequent amendments, laid the groundwork for the governance in the country. The main objectives of the Act include:

Regulation of Drugs and Cosmetics: The Act provides a comprehensive definition of drug and cosmetic, distinguishing between the two categorise and establishing separate regulatory guidelines for each.

Quality Control: The Act mandates that all drug and cosmetics must meet specified quality standards to protect consumers from substandard products and ensure safety.

Licensing: It establishes a licensing framework for manufacturing and selling drugs and cosmetics, ensuring that only approved entities can operate in the market.

Approval Processes: The Act specifies the processes for the approval of proper labelling and packaging, ensuring that consumers have access to necessary information regarding product ingredients, usage, and safety.

Amendment of 1945

In 1945, an amendment to drug and Cosmetic Act was introduced to address specific concerns related to Cosmetics. This amendment emphasized:

Definition of Cosmetics: It provided a clear definition of cosmetics and distinguished them from drug to prevent any potential misuse of formulation that claim therapeutic effects.

Enhanced Regulation: The amendment added provision for the testing and regulating of cosmetics, ensure that products marketed as cosmetics do not contain harmful ingredients or pose a risk to consumers.

Prohibiting and Penalties: The Act also established penalties for the manufacture or sale of unsafe products, allowing for enforcement against violation to protect public health.

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History of Shaving Cream.

A rudimentary from of shaving cream was documented in Sumer around 3000 BC. This substance combined wood alkali and animal fat and was applied to a beard as a shaving preparation.

Until the early 20th century, bars or stick of hard shaving soap were used. Later, tubes containing compound of oils and soft soap were sold. In 1919 Frank Shields, a former MIT Professor developed the first shaving cream. The innovation product appeared on the American market under the name Barbasol and offered men an alternative to using a brush to work soap into lather. When it was first produced, Barbasol was filled and packaged entirely by hand in Indianapolis. The brand still exists and is currently available worldwide.

The first can of pressurized shaving cream was Rise shaving cream, introduced in 1949. By the following decade this format attained two-thirds of the American market. Chlorofluorocarbons (CFCs) were used as propellants until they were banned in the late 1990s for destroying the ozone layer. Gaseous hydrocarbons such as mixture of pentane, propane, butane and isobutane took their place.

In the 1970s, shaving gel was developed. In 1993, The Procter & Gamble Company patented a post-forming gel composition, which turns the gel into a foam gel into a form after application to the skin, combining properties of both foam and gels.

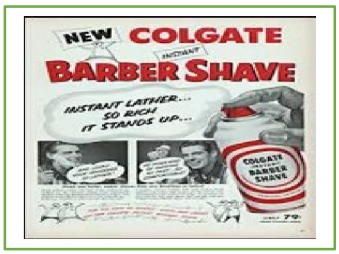

Fig2: History Shaving Cream

Raw Material Used in Shaving Cream.

Shaving creams are made from a variety of raw material, including:

- **Oil and fats:** Shaving cream often contain stearic acid and coconut oil or coconut oil fatty acids.
- **Glycerine or sorbitol:** This humectant give shaving cream its creamy consistency.
- **Electrolytes:** Potassium Chloride, boric acid, and sodium silicate are used to give shaving cream the right consistency.
- **Perfume and other additives:** Shaving creams typically contain 0.5-1.5% perfume. Menthols often added to give a cooling sensation.
- **Preservatives:** Parabens and formaldehyde releasing preservatives are commonly used.
- **Soap:** Shaving creams contain 20-30% soap, which is usually potassium or triethanolamine (TEA).
- **Emollients, emulsifiers, and foaming agents:** Shaving creams contain these ingredients

Equipment:

.

Fig3: Steam Jacketed Kettle.

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1.Steam Jacketed Kettle: Steam jacketed kettle are often used to rapidly and uniformly heat food and agriculture product to processing temperatures. A heat transfer mechanism is involved in this evaporation process, which transfer heat to the extract. A steam boiler generates heat and evaporates water from an evaporating pan containing aqueous extract. Whan the temperature rises, the escaping tendency of the solvent molecule increase with the increased vapour pressure, causing the solvent molecule to vaporize more easily.

It consist of a pot filed with evaporable solution, steam fed through the intake and condensate spouting out of the outlet, which heat the content. Mechanical stirring is required for large volumes, while manual stirring is required for smaller volumes. Evaporation being rapidly at the beginning.

Fig 4: Agitator

Agitator are equipment used to homogenize media inside a tank. They operate by rotating immersed impellers at a controlled speed, know as revolution per minute (RPM). The impeller's action induces flow and shear within the tank, facilitating the homogenization of single or multicomponent media. This ensure that the media flow uniformly and maintains a consistent pattern. Agitator are capable of handling liquid, gaseous, and solid media such as granules and powders. They are also effective with slurries, suspensions, and highly viscous liquids. However, choosing the right types, size, and design of agitator is critical, depending on the specific characteristic of media.

Fig5: Homogenizer.

A homogenizer is a type of mixing equipment used to create a uniform and consistent mixture. It work by breaking the components and evenly distributing them throughout the solution. Homogenizer were invented by Auguste Gaulin for homogenizing milk.

Homogenizer are used with high shear mixers, batch mixers, and paddle mixers and are installed downstream to create finer mixtures. However, some homogenizers cannot accept product with highly coarse components due to the risk of high energy consumption, decreased flow rate, heat generation, and increased material wear.

Upstream of the homogenizer, mixers condition and prepare material by premixing them.

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Fig 6 : Paste Filling and sealing Machine

A Paste filling and sealing machine is a piece of equipment that can automatically fill and seal tubes or bottles with paste products. These machines are important in manufacturing especially when handling sticky substances. They can be used in a variety of industries, including food, cosmetics, pharmaceuticals, and Chemical.

These machines, designed to fill containers with sticky substances such as sauces, creams, and adhesive, play a key role in ensuring efficiency, accuracy, and consistency in the production process. Let's explore the uses, advantages, and key considerations for choosing the right paste filling machine.

Fig 7: Storage Tank

Storage tanks are containers that hold liquid or compressed gases. The term can be used for reservoirs and for manufactured Containers. The usage of the world "tank" for reservoirs is uncommon in American English but is moderately common in British English In other

countries, the term tends to refer only to artificial container. In the U.S., storage tanks operate under no pressure, distinguishing them from pressure vessels.

Tanks can be used to hold material as diverse as milk, water. Waste, petroleum, chemicals, and other hazardous materials, all while meeting industry standards and regulations. Storage tanks are available in many shapes: vertical and horizontal cylindrical; open top and closed top; flat bottom, cone bottom, slope bottom and dish bottom.

Preparation of Shaving Cream.

Procedure for the preparation of a shaving cream, characterized by the steps

Add steric acid, coconut oil, lanolin and water to the mixing equipment;

heat this mixture to a temperature of 80 to 85 C

Once the mixture melted and homogeneous, stirring is started and an aqueous solution of potassium.

Apparatus:

1. Beaker.
2. weighing balance.
3. water bath.

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4. Glass rod.
5.Thermometer
6.Heater.
7.Measuring cylinder.
8.Container.
Ingredients and Amount :

Ingredients	Amount
1.Stearic acid.	25%
2.Cocount oil.	10%
3.Plam. oil.	6%
4.Pot.Hydroxide.	6.8%
5.Sod. Hydroxide.	1.6%
6.Glycerin.	13%
7.Perfume.	q.s
8.Preservative.	q.s
10.Water to make.	100%

Formula Antiseptic after shaving lotion:
Hyamine… 0.27%
Alcohol 42%
Menthol 0.004%
g
Perfume q.s

Formulation Table.
The ingredients and their role.

Ingredients	Weight	Role
1.Stearic Acid.	14g	Emulsifier.
2.Oleic Acid.	4g	Surfactant.
3.KOH solution.	(2g KOH & 12 ml H2O)	Base.
4.Sorbitol.	1g	Emollient.
5.Lauramine.	6g	Thickener.
6.Propylene glycol.	4g	Humectants.
7.Sodium Chloride.	2g	Thickener.
8.Hot water.	5ml	Aqua's phase.
9.SLS	4g	Foaming agent.
10.Glycerin	1g	Humectants.

Preparation of Method:
In main tank, add 14g of stearic acid, 10 gm coconut oil and 4g oleic acid and (KOH 3G, H2O 10ml.) then heated to 80°C. When this was melted and homogenized, stirring was provoked.
In separate vessel 4g SLS, 1g NaCl and 5ml hot water had been weigh and melted and was added with tank.
4g of propylene Glycol, 1g Glycerine, 1g Sorbital and 6g Lauramide was added was added with continuous Starring

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2nd Method.

14g of stearic acid, 10ml coconut oil, and 15g anhydrous lanolin and some water were taken and heated to 80°C. When this mixture was melted and homogenized, stirring was caused and 60g of potassium hydroxide were slowly added at a concentration of 30-40° Be mixed. Raising evenly for 60 min. enough time to complete the saponification reaction.

Still with stirring and at the temperature set forth above, 60g of

glycerol and the water needed to complete 1000 g of cream were added. It was cooled to 40°c and still with stirring, 40g of sodium alkyl sulfonate and perfume were added.

Test were carried out with panellists of sensitive skin and the result obtained show that this cream dose not dry out the skin, does not feel shrunken, produced good foam and leaves the skin well-conditioned to shave, although the cream was somewhat firm.

Evaluations Test of Shaving Cream:

Physical Appearance Assessment: Asses the colour, consistency, and texture of the shaving cream. It should be Uniform without any separation or lumps.

Viscosity Testing: Viscosity Measurement ; using a viscometer, asses the viscosity of the shaving cream. This help determine how thick the cream is and its ease of application.

PH Testing: ph. Measurement ; by using Ph testing strips or a Ph meter, measure the Ph level of the shaving cream. Ideally, the Ph should be close to skin- neutral (around 5.5) to minimize irritation.

Skin Irritation Testing:

Patch Testing : Conduct patch test on a small area of skin to evaluate any potential irritation or allergic reaction. Look for redness, itching, or other signal of discomfort.

Moisturization Assessment:

Post- shave Skin Condition: After shaving , assess the skin's condition. The cream should provide hydration and not leave the skin feeling dry or tight

Stability Testing : conduct stability tests over time to ensure that the cream maintain its properties, texture, and scent under various storage condition.

Result: Shaving cream creates a thin layer of protection between the blade and the skin, ensuring less friction and minimization the risk of redness, razor, burn, and irritation and

fewer nick and cuts.

Test of shaving

Test	Prepared sample	Std. Reference.
Absorption Rate	30	16
Ph	5.68	6.2

II. CONCLUSION

- The conclusion of shaving cream is to soften the hair by providing lubrication.
- Different types of shaving cream including aerosol shaving cream, lather less shaving cream and lather Shaving cream or lathering Shaving cream.
- Shaving cream help to keep moisture in the beard hair during the shave, leaving them soften and easier to cut. When less force is needed to cut each hair, your shave can more comfortable.

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