

Review on Cosmetic Science

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Abstract: *This review delves into the evolving role of pharmacists in the cosmetic science and pharmacy intersection. It highlights the integration of pharmaceutical principles in cosmetic development, regulatory considerations, and the expanding role of pharmacists in promoting skin health. As cosmetics and pharmaceuticals increasingly overlap, the article provides insights into the synergy between these fields for consumer well-being. The discussion explores cosmetics derived from synthetic materials, polysaccharide polymers, proteins, and organosilicon materials. Synthetic products have revolutionized the personal care industry, offering environmentally friendly solutions. Polysaccharide-based polymers, known for their healing properties, are non-toxic and easily accessible from nature. Organosilicon emerges as a popular and suitable candidate for cosmetic use. The review emphasizes the pivotal role of pharmacists in cosmetic development, formulation, dispensing, and counseling. It examines how pharmacists leverage their expertise to optimize formulations by integrating active pharmaceutical ingredients, tailoring products to address specific skin conditions. The intersection of pharmacy and cosmetics in over-the-counter (OTC) products is explored, emphasizing pharmacists as knowledgeable guides assisting consumers in selecting products aligned with their skincare needs. This dynamic interplay between cosmetic science and pharmacy holds profound implications for both beauty and healthcare sectors*

Keywords: Cosmetics

I. INTRODUCTION

Cosmetics are a combination of artificial or synthetic ingredients. Cosmetics have many uses. Products designed for personal care and skin care can be used to cleanse or protect the body or skin. Cosmetics designed to beautify or alter a person's face (makeup) may be used to hide flaws, enhance natural features (such as eyebrows and eyelashes), add color to a person's face, or alter the entire face to suit a different person. . A person, animal or thing. Cosmetics can also create body odor. [1]

Cosmetics were also used in ancient Rome, but many Roman texts indicate that this was frowned upon. In ancient Rome, some women were known to invent cosmetic products, including crystal formulas for skin whitening and eyeshadow powder for eyeliner.

The cosmetics industry describes the business that produces and distributes cosmetic products. These include makeup products like foundation and mascara, skin care products like moisturizers and cleansers, hair care products like shampoo, conditioner and conditioner, and bath products like shower gel and soap. While production in the 20th century was dominated by a handful of companies, the distribution and sale of cosmetic products has spread across many sectors.

According to the 2005 report of the largest cosmetic companies Gillette, Nivea and Chanel, the market size of the cosmetics industry in Europe and America is approximately 7 billion euros annually. The global cosmetics and fragrance industry is currently worth approximately \$170 billion (according to Eurostat - May 2007). Europe is the leading market, worth approximately €63 billion. [2]

Drugs and Cosmetics Act, 1940 and 1945

Drugs and Cosmetics Act, 1940 are laws implemented by the Government of India through the Drugs and Cosmetics Act Song, 1940. These regulations classify drugs according to a table and provide instructions for the storage, sale, display, and distribution of drugs in each table.

The main purpose of the Medicines and Cosmetics Law of 1940 and the Law of 1945 is to regulate the import, production, distribution and sale of medicines and cosmetics. The law provides that medicines and cosmetics may only

be manufactured, distributed and sold by qualified persons licensed for this purpose. Federal and state drug control authorities also have the authority to control these practices. The Act also provides for the constitution of two committees, the Drug Health Review Board (DTAB) and the Scientific Advisory Board of Ayurveda and Unani Medicine, to advise the Central and State Governments on matters arising from the implementation of this Act. problems. [3]

II. CLASSES OF COSMETIC PROHIBITED FROM IMPORT

The following drugs and cosmetics cannot be imported

1. Any medicine or cosmetic of substandard quality.
2. Any misbranded or addictive drugs or cosmetics.
3. Any cosmetics or medicines containing harmful substances.
4. Non-prescription drugs.
5. Any medicine or cosmetic that requires an import permit. [4]

III. OFFENCES AND PENALTIES

Offences and Penalties Relating to Import of Drugs:

Sr. No.	Offence	Penalties	
		First conviction	Subsequent conviction
1.	Import of adulterated or spurious drugs or cosmetics or any cosmetic containing any ingredient which may render it unsafe or harmful for the use under directions recommended.	Imprisonment upto 3 years and fine upto ₹ 5000.	Imprisonment upto 5 years or fine upto ₹ 10,000 or both.
2.	Import of drugs or cosmetics other than referred above the import of which is prohibited.	Imprisonment upto 06 months or fine upto ₹ 500 or both.	Imprisonment upto 1 year or fine upto ₹ 1000 or both.
3.	Import of drugs or cosmetics in contravention of any notification issued under section 10-A.	Imprisonment upto 3 years or fine upto ₹ 5000 or both.	

How to Get License

Import of Medicines in India

The Central Government (CDSCO) controls the import of these drugs into the country through the Central Drugs Control Organization (DCG and Drug Administration) India General Medicine.

- 1] The production, sale and distribution of drugs are generally controlled by state drug control agencies appointed by the state government.
- 2] Objectives of Indian Drug Regulatory System The national objective is to provide safe, effective and quality drugs, cosmetics and medical devices based on research, best practices and best practices.
- 3] Medicines are defined in Article 3 of the Medicines and Cosmetics Act 1940. The government has the authority to declare medicines, cosmetics or medical devices as medical products by notification in the Official Gazette.
- 4] With the above authority, the central government declared disposable hypodermic doses, single-use hypodermic doses, and orthopedic implants and catheters as medicines in 1989.

License to sell medicine

Shops and shops that distribute medicine must obtain this license. Pharmaceutical licenses are divided into three categories:

- i. Wholesale drug license
- ii. Retail Pharmaceutical License
- iii. Market Restricted License

IV. DATA AND SUPPLIER AUDIT PROCESS

Batch Production Records:

Whether the product is a classical formulation, a patented or registered drug product, the data of each batch must be protected.

- (i) Production information includes the names of raw materials and their products in the market, including taste, color, consistency etc. as required. It should ensure that it is tested at various stages of production, such as Under the Drugs and Cosmetics Act or drug testing.
- (ii) These tests may include in-house or laboratory tests performed by the manufacturer of raw or processed products and finished products.

Master Formula Record

The licensee shall maintain an MFR for each product regarding the entire production process, which will be prepared and approved by the personnel responsible for production and quality control. The owner's registration information must include:

- (a) The name of the owner or owners and, if applicable, the name, strength and quantity of the product.
- (b) Description of the final product container label and indication of the closure to be used.
- (c) Description of all packaging and materials and dimensions used in the process.
- (d) Production and control instructions and restrictions on important steps such as mixing, drying, blending, testing, and product sterilization, among others.
- (e) Theoretical efficiencies needed in the formulation of different production levels and allowable yield limits.
- (f) Detailed description of the precautions to be taken during the production and storage of drugs and semi-finished products.

Quality Control:

Manufacturers may establish their own quality control departments or tests may be performed by government-approved laboratories.

Distribution Records:

Distribution records (distribution record) should be maintained to collectively facilitate the timely and complete recovery process. The batch file should be kept until the batch expires. [8]

V. ICH SAFETY STUDIES GUIDES

1) Designing safety studies for cosmetics: Safety studies should include the following consideration

- Consider changes in the process.
- Consider the impact of packaging on the packaging and any impact the product may have on the packaging.

2) Estimating shelf life

There are some widely used studies published to support rapid methods for estimating shelf life.

- The variety and complexity of cosmetic products and packaging.
- Various product concept and safety analysis.
- Various types of changes that need to be controlled, including physical, chemical, microbiological, functional or aesthetic changes.

"Accelerated" conditions

Internationally accepted rapid testing conditions will be required to estimate the shelf life of the product

Scaling-up stability testing

In the early stages of product production, batch testing may be performed to: To begin to determine the stability of the product according to appropriate standards.

3) Packaging: Due to the interaction between products, packaging and the external environment, packaging can directly affect the stability of the finished product. Such effects may include:

- Interaction between product and container (e.g. adsorption of components in the container, corrosion, chemical reaction, migration);

4) Predicting functionality under stressful conditions

This section describes the method for predicting cosmetic resistance to stressful conditions such as temperature and light exposure.

VI. INFORMATION ABOUT SKIN PROBLEMS

- **Acne**, which blocks the hair follicles of the skin, causes oil, bacteria and dead skin to form in the pores.
- **Alopecia Areata**, where hair falls out in small pieces.
- **Atopic dermatitis (eczema)**, dry, itchy skin that becomes inflamed and cracked.
- **With psoriasis**, scaly skin will swell or become hot.
- **Raynaud's phenomenon**, a temporary loss of blood flow to the fingers and toes or other parts of the body, causing numbness or changes in the skin.
- **Rosacea**, flushing, skin and papules, mostly on the face.
- **Skin cancer**, abnormal skin growth.
- **Vitiligo**, areas of the skin that have lost pigment. [10]

Information about hair-related problems

1) Dandruff: Dandruff is scaly hair that sticks to the hair follicles and can be caused by malnutrition, infectious disease and even slow metabolism.

2) Hair loss: While it is discussed as a problem for men, hair loss/thinning hair also occurs in women. For most men, this is probably male pattern baldness. Hair loss in women is often caused by stress, medication, hormonal changes and even aging.

3) Dry hair: Washing your hair too much can cause your hair to dry out. While it's good to have clean and tidy hair, many people wash their hair once, sometimes twice, a day.

4) Hair ends: Over-combing your hair, over-perming, overheating and not taking good care of your hair will cause the ends to break.

5) Dull hair: There are many reasons for dull hair; chemical or thermoforming damage and environmental pollution. [11th]

Knowledge About Nail Related Problem

- Crumbling nails
- Pitting
- Blood under the nails
- The nail separates from the bed[12]

Knowledge About Oral Cavity Related Problems

1. Toothache
2. Stained Teeth
3. Cavities
4. Chipped Tooth
5. Impacted teeth

VII. CLEANSING AND CARE NEEDS FOR FACE,EYE LIDS,GUMS, DENTAL CAVITIES, HAIRS , LIPS , HANDS, FEET, NAIL, SCALP, NECK, BODY AND UNDER-ARM TO MAINTAIN HYGIENE

SKIN CARE PRODUCTS

1)FACE WASH:

It is facial care cosmetic used to cleanse the skin

- Helps to improve skin complexion
- Help to control excessive oil.
- Help to nourish the skin and make bright and radiant.

Examples:

- 1.Neem Tulsi Face Wash
- 2.Sandal Almond Face Wash

MOISTURIZER:

- It is cosmetic preparation used to prevent dryness in the skin.
- If not moisturized properly skin tends to look dull,dry
- Moisturising products are classified into:

1. Day preparation
- 2.Night preparation
- 3.Hand and body lotion
- 4.All purpose products
- 5.Barrier creams

LIP CARE PRODUCTS

1.LIP BALM:

- Lip balm is wax like substance you apply to moisturize and ease pain caused by dry lips
- Lip balm helps to protect lips from dry air ,wind and cold temperatures.
- Lip balm come in variety of different flavors and pleasant scents.

2.LIP GLOSS:

Lip gloss is product used primarily to give lips glossy lustre

3.LIP LINER:

- Lip liner usually comes in the same color as the lipsticks, e.g. Pink, Red, Brown

Ø Eyelid Treatment:

1. Eye shadow:

- Eye shadow is used to give a background color to the eyes.
- Many color tones are available.

2. Mascara:

- Mascara is a cosmetic that is often used to strengthen eyelashes.
- Different types of mascara:

1. Water-soluble mascara
2. Waterproof mascara

3. Eyeliner:

- Eyeliner is a cosmetic used to outline the eyes. Contour the eye area.

•Type:

1. Liquid eyeliner
2. Gel eyeliner
3. Eyeliner

Hand care:

1. Hand moisturizer:

- In winter, bad weather can affect the moisturization of the hands, so the hands are moisturized. is especially important.

2. Hand Sanitizer:

- Hand sanitizer or hand sanitizer is a waterless hand sanitizer.
- Hand antiseptics containing at least 60 to 95% alcohol are effective disinfectants.

Foot Care:

- Washing
- Drying
- Moisturizing
- Removing rough skin
- Wear socks
- Wear good shoes
- Use anti-fungal medication

Scalp care:

- Protect your scalp from the sun.
- Shampoo regularly
- Special care
- Nourish
- Stay hydrated

Scalp Care Preparation

1. Shampoo
2. Hair oil

VIII. HANDS ON INSTRUMENTS

BROOKFIELD VISCOMETER

Brookfield Viscometer can pass Viscosity is measured using the viscometer technique. A viscometer (also known as a viscometer) can measure viscosity by varying the sample material. They use a spindle on a shaft designed to be submerged or submerged in liquid and then rotated.



Rotation causes the fluid to exert a drag force, measured by the torque applied to the viscosity of the fluid. They are not designed to measure much flow, but a rheometer can be used. [14]

Drying

Drying is a method of converting liquid or slurry into dry powder by rapidly drying it with hot oil. This is the preferred method for drying more heat-sensitive materials, such as food and medicine, or materials that may require a similar amount of heat. Air is the heat used to dry the environment;

However, nitrogen is used if the liquid is an aromatic solvent such as ethanol or if the product is sensitive to oxygen. [16]

FREEZE DRYER

Freeze dryer can keep the moisture in the product under control. Path. This is important for the preservation of sunken artifacts such as those from the marine environment. Drying can be done by simply freezing the product at a low temperature that allows it to sublimate naturally, or it can be dried by more demanding methods such as vacuum freeze drying, drying occurs in vacuum. It is a mechanical device.



TABLET PUNCHING MACHINE

The tablet press can be used to make tablets from a variety of materials,



including pharmaceuticals, food, cleaning products, product granules and cosmetics. To produce tablets, granular powder material needs to be metered into the space created by two punches and dies, and the punches must be pressed together with great force to fuse the materials. [17].

HOMOGENIZER

Many different models for damage have been developed using various physical methods. Mortars and pestles have been used for thousands of years and are standard equipment even in modern laboratories. Many solutions today rely on mixers, bead mills, ultrasonic processing (also known as sonication), rotor-stator machines, high pressure, and many other physical applications. [18]

IX. CONCLUSION

The world of Cosmetic Science is a dynamic and ever-evolving landscape that seamlessly blends scientific innovation, consumer preferences, and ethical considerations. The industry's commitment to research and development is evident in the continuous exploration of novel ingredients, formulation techniques, and the integration of cutting-edge technologies such as nanotechnology and biotechnology. The emphasis on safety and regulatory compliance underscores the responsibility of cosmetic scientists to ensure the well-being of consumers. As the cosmetic industry navigates a rapidly changing market, it adapts to emerging trends like the clean beauty movement, sustainable practices, and a growing demand for personalized products. The shift towards inclusivity and diversity reflects a positive transformation, mirroring the changing societal values. Challenges persist, ranging from addressing safety concerns and allergies to overcoming regulatory hurdles. The industry faces the ongoing task of educating consumers, dispelling myths, and fostering a deeper understanding of the science behind cosmetic products. Looking forward, the future of

Cosmetic Science appears promising with the integration of artificial intelligence, augmented reality, and personalized approaches to cater to individual needs. The emphasis on sustainability, both in ingredients and packaging, highlights a conscientious effort to reduce the environmental impact. In essence, Cosmetic Science encapsulates a harmonious blend of science, artistry, and conscientiousness, shaping an industry that not only enhances beauty but also embraces innovation, diversity, and sustainability.

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