

# Handbook on Cosmetics (Processes, Formulae with Testing Methods)

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Cosmetics products are created for application on the body for the purpose of cleansing, beautifying or altering appearance and enhancing attractive features. It is not similar like medicines in addition to it cannot be used to modify the physique function or performance. The cosmetic Industry has witnessed rapid growth over the last couple of decades. Now a day the range of cosmetic and beauty products has widened tremendously. The use of cosmetics has increased exponentially not only among in females but the male population also indulges in their use. A wide range of chemical and natural materials is used in the formulation of cosmetic and toiletry preparations. Cosmetics like creams, gels, face powder, eye makeup, shaving cream, and colognes are used on a daily basis by both women and men. The Indian cosmetic Industry has witnessed rapid growth over the last couple of decades. In that time the range of cosmetic and beauty products in India has widened tremendously. Beauty products manufacturers in India mostly cater to the great demand for cosmetics and toiletries that fall into the low or medium price categories as the greatest demand in India has always been for these economically priced products. Bearing a long glowing heritage of cosmetic and beauty, aesthetic makeup products is being used since olden days and nowadays it appear like a booming economy in India which would be the largest cosmetic consuming country in a next few decades. While the demand of beautifying substances are growing day by day, a large number of local as well as international manufacturers gradually extend their ranges and products in different provinces of India. Industry sources estimate a rapid growth rate of 20% per annum. Some of the fundamentals of the book are regulation of cosmetic products, the relationship of cosmetic products to drugs, preservation of cosmetics, factors affecting preservation, organisms found in cosmetics, antiperspirants and deodorants, cleansing creams and lotions, baby toiletries, face powder manufacturing process, aerosol cosmetics, shaving preparations: soaps, creams, oils, and lotions, advantages and disadvantages of natural dyes, packaging cosmetic preparations, etc.

The book covers formulae, manufacturing processes of various types of cosmetics like antiperspirants and deodorants, cleaning creams, lotions, emollient creams, baby toiletries, face powder, eye makeup and many more along with testing methods. This book will be great asset to new entrepreneurs, existing units, technocrats and technical institutions.

## 1. Regulation of Cosmetic Products

Historical Development

Self-regulation

Regulation in the United States

1. Federal Regulation of Cosmetics
2. Cosmetic Composition
3. Cosmetic Labeling
4. The Relationship of Cosmetic Products to Drugs
5. Regulation of Cosmetics by Other Federal Agencies
6. Cosmetics and the Consumer Product Safety Commission
7. Regulation of Cosmetics by the States
8. Conclusion

## 2. Sensitivity Testing

Diagnostic Sensitivity Testing

Technique of Diagnostic Patch Testing

The Interpretation of Patch Test Reactions

â€œUncoveredâ€• versus â€œCoveredâ€• Patch-Test Technique

Features of Patch Testing with Paraphenylenediamine

Uncovered Patch-Test Method for PPDA Sensitivity

Covered Patch-Test Technique for PPDA Sensitivity

Evaluation of Patch-Test Reactions to PPDA

Features of Patch Testing with Nail Polish

Patch Testing with Lipstick

Testing with Permanent Wave Solutions

Testing for Sensitivity to Perfumes

Testing for Lanolin Sensitivity

Diagnostic Photosensitivity Testing

Light Sources for Photosensitivity Testing

Testing Cosmetics for Photosensitization

Testing Antimicrobial Agents in Soaps and Cosmetics

Patch Test Table for Specific Ingredients in Cosmetics

Patch Tests with Unlisted Cosmetic Ingredients

Prophetic or Predictive Sensitivity Testing

Predictive Testing for Allergic Contact Sensitization

Predictive Testing for Photosensitizing Capacity

## 3. Quality Assurance

Quality Control

Raw Material Inspection

Inspection of the Finished Product

Inspection of Containers and Packaging Materials

In-Process Control

Finished Goods Control

Good Laboratory Practice (GLP)

Good Manufacturing Practice (GMP)

Environmental Protection

Quality Promotion

Works Proposal System

Quality Teams

## 4. Raw Materials

Introduction

Basic Surfactants

Alkyl Ether Sulfates

Alkyl Sulfates

a-Olefin Sulfonates

Other Basic Surfactants  
Mild Anionic Surfactants  
Sulfosuccinates  
Cocoyl Isethionates  
Acyl Amides  
Alkyl Ether Carboxylates  
Magnesium Surfactants  
Alkyl Ether Carboxylates  
Magnesium Surfactants  
Alkyl Phosphates  
Amphoteric Surfactants  
Alkyl Betaines  
Alkylamido Betaines  
Acylamphoglycinates and Acylamphopropionates  
Amine Oxides  
Non-ionic Surfactants  
Ethoxylates Products  
Alkyl Polyglycosides  
Cationic Surfactants  
Monoalkyl Quaternaries  
Dialkyl Quaternaries  
Trialkyl Quaternaries  
Benzyl Quaternaries  
Ester Quaternaries  
Ethoxylated Quaternaries  
Shampoo and Bath Additives  
Thickeners  
Foam Stabilizers  
Pearlescent Agents  
Conditioning Agents  
Emollients  
Sequestering Agents  
Oil Components  
Mineral Oil  
Natural Oils  
Triglycerides  
Jojoba Oil  
Synthetic Oils  
Isopropyl Esters  
Ethylhexyl Esters  
Oleic Acid Esters  
Caprylic / Capric Acid Esters  
Isocetyl Stearate  
Octyldodecanal  
N-Butyl Stearate  
Diisopropyl Adipate  
Pentaerythritol Tetraisostearate  
Waxes  
Natural Waxes  
Synthetic Waxes  
Silicone Oils  
Cream Bases  
Fatty Alcohols

Polyol Esters  
Fatty Acids  
Oil-in-Water (O/W) Emulsifiers  
Water-in-oil (W/O) Emulsifiers

## 5. Preservation of Cosmetics

Factors Affecting Preservation

Organisms Found in Cosmetics

Molds

Yeasts

Bacteria

Factors Influencing the Growth of Microorganisms

Minerals

Growth Factors

Moisture Content

pH

Temperature

Oxygen

Other Ingredients

Factors Affecting the Action of Preservatives in Cosmetics

Concentration

Solubility Relationships

pH

Surface-Active Agents

The Interference of Nonionic Emulsifiers with Preservatives

Suitability of Substrate for Growth of Organisms

Amount of Inoculum

Synergism or Antagonism with Other Compounds

Evaluation of Preservatives for Cosmetics

Methods of Testing Antimicrobial Agents

Choice of Organism

Practical Tests

Preservatives

Organic Acids

Alcohols

Aldehydes

Essential Oils

Phenolic Compounds

Esters of p-Hydroxybenzoic Acid

o-Phenylphenol

Mercury Compounds

Surface-Active Agents

Miscellaneous Nitrogen Compounds

Polyols

Miscellaneous Antimicrobials

Mechanism of Preservative Action

Allergic Response to Preservatives and Antimicrobials

Photosensitization

Manufacturing

Prevention of Microbial Contamination

Deionizer Contamination

Filter Contamination

Raw Material Contamination

Sanitation  
Microbial Corrosion  
Emulsion Preservation  
Preservation of Shampoos  
Chelation  
Antioxidants  
Rancidity  
Mechanism of Action  
Classification of Antioxidants  
Considerations for Use of Antioxidants

## 6. Antiperspirants and Deodorants

Introduction  
Regulations  
Mechanism of Sweating  
Antiperspirant Active Properties  
Basic Aluminum Chloride  
Aluminum Zirconium Complexes  
Clinical Assessment  
Formulatory Considerations  
Performance  
Cost  
Esthetics  
Formulations  
Roll-on Products  
Stick Products  
Spray Products  
Deodorants  
Odor Control  
Clinical Assessment  
Formulations

## 7. Cleansing Creams And Lotions

Properties Sought  
History  
Types of Cleansing Cream  
Beeswax-Borax Emulsion Type  
Basic Materials  
Liquefying Cleansing Creams  
Miscellaneous Emulsion Types  
Sorbitan Fatty Acid Ester Emulsions  
Acid-Containing Cleansing Creams  
Detergent Cleansing Creams  
Antibacterial Cleansing Preparations  
Cleansing Lotions  
Cleansing Preparations for Oily Skin  
Consideration of Safety  
Equipment and Manufacturing

## 8. Emollient Creams And Lotions

Theoretical Aspects of Emollience  
Emollient Materials  
Emollient Evaluation

Emulsion Types  
Penetration  
Formulations  
Emollient Creams  
Raw Materials  
Glyceryl Monostearate (from "Triple-Pressed" Stearic Acid)  
Polyethylene Glycol Fatty Acid Esters  
Stearic Acid  
Beeswax  
Fatty Alcohols  
Lanolin  
Hydrocarbon Waxes  
Manufacturing Procedure  
Emollient Lotions  
Specialized Creams and Lotions  
Eye Creams  
All-Purpose Creams  
Therapeutic Creams

## 9. Baby Toiletries

Epidermal Physiology  
Skin Care of the Newborn  
Baby Oils  
Baby Lotions  
Cationic Lotions  
Care of the Diaper Area  
Diaper Rash  
Cationic Ointments  
Baby Oils  
Baby Lotions  
Baby Creams  
Soap  
Baby Powders  
Diaper Laundering  
Disposable Diapers  
Infantile Eczema  
Care of the Hair and Scalp  
Formulation  
Raw Materials  
Baby Oils  
Baby Lotions  
Baby Creams  
Baby Powders  
Literature

## 10. Face Powders

Loose Face Powder  
Raw Materials  
Formulations  
Compact Face Powder  
Raw Materials, Binding Agents, and Preservatives  
Binding Agents  
Compression Methods

Face Powder Manufacturing Process  
Base Powder Preparation  
Color Extenders  
Combination: Base Powder and Color Extenders  
Mills  
Pressing Machines and Pressure Considerations  
Packaging  
Quality Control and Laboratory Practices  
Shade Control and Lighting  
Dispersion of Color  
Pay off  
Pressure Testing  
Breakage Test

## 11. Eye Makeup

Raw Materials  
Pigments  
Basic Ingredients  
Petrolatum  
Lanolin  
Ceresin  
Carnauba  
Beeswax  
Stearic Acid  
Isopropyl Myristate  
Propylene Glycol  
Gum Tragacanth  
Methyl Cellulose  
Preservatives  
Pearlessences  
Perfuming  
Formulation and Manufacture  
Eyeshadow  
Mascara  
Eyebrow Pencils  
Eye Liners  
False Eyelashes  
Eye Cover Products  
Eye Makeup Removers  
Eye Creams and Eye Sticks  
Analysis  
General Remarks

## 12. Aerosol Cosmetics

Definitions  
Historical Background  
Principle and Mechanism  
The Package and its Components  
Container  
Metals  
Industry Specifications for Fabricated Aerosol Cans  
Glass  
Plastics

- Valves
- Valve Specialties
- Actuator Cover Cap
- Powder or Paint Valves
- Foam Valves
- Spray Anyway Valves
- Metering Valves
- Special Applicators
- Codispensing Valves
- Propellants
- Concentrate
- Production
- Cold Filling
- Pressure Filling
- Under-the-Cup Filling
- Formulation
- Hair Products
- Hair Sprays
- Hairsets and Conditioners
- Hairdressing
- Color Rinse and Sprays
- Wave Lotions
- Shampoos
- Skin Products
- Deodorants and Antiperspirants
- Fragrances
- Sunscreen
- Shaving Cream
- Shaving Accessories
- Feminine Deodorant Spray
- Nail Preparations
- Powders
- Face Creams and Lotions
- Oral Products

### 13. Shaving Preparations: Soaps, Creams, Oils, and Lotions

- Shaving Soaps, Sticks and Powders
- Shaving Soaps
- Shaving Sticks
- Shaving Powders
- Lather Shaving Cream
- Brushless Shaving Cream
- Shaving Oils and Lotions

### 14. Preshave and Aftershave Preparations

- Preshave Preparations
- Skin Conditioners
- Beard Softeners
- Pre-electric Shave Preparations
- Aftershave Preparations
- Clear Lotions
- Stick Lotions and Gels
- Creams and Emulsified Lotions



Powders  
Styptics  
Aerosols

15. Hair-Grooming Preparations  
Properties of a Good Hairdressing  
Types of Hairdressing  
Brilliantines  
Liquid Brilliantines  
Solid Brilliantines  
Alcoholic Lotions  
Hair Tonics  
Two-Layer Lotions  
Gum-Base Hairdressings  
Oil-in-Water Emulsions  
Water-in-Oil Emulsions  
Aerosol Hairdressings

16. Hair Straighteners  
Morphological Considerations  
General Chemical Composition  
Keratin  
Hair Treatment Reactions  
Oxidation  
Diffusion of Reagents  
D-Cystine Fraction  
Measurement of Physical Changes Related to Fibre Treatment  
Form-related Compositions  
Temporary Straightening  
Permanent Straightening  
Thioglycolate Compositions  
Neutralizers  
Manufacturing and Material Specifications  
Packaging Considerations  
Method of Application  
Other Materials  
Silicones  
Sulfites  
Manufacture  
Procedure  
Neutralization  
General Considerations

17. Bleaches, Hair Colorings and Dye Removers  
Demands in Hair Coloring  
Classes of Coloring Agents  
Bleaching Agents  
Early Bleaches  
Chemical Bleaches  
Hydrogen Peroxide  
Action of Peroxide on Hair  
Bleaching Agents and Treatments  
Platinum Bleaching

Blanching of Hair  
After Treatment of Bleached Hair  
Synthetic Organic Dyes  
Range of Shades Required  
Special Shades  
Temporary Colorings  
Coloured Rinses  
Rinses for Gray Hair  
Importances of Instructions  
Color Shampoos  
Powders  
Crayons  
Semi-Permanent Dyes  
Nitro Dyes  
Self-Oxidizing Dyes  
Solvent-Assisted Dyes  
Anion-Cation Complexes  
Reactive Dyes  
Aminoanthraquinone Dyes  
Permanent Dyes  
(Oxidation Dyes)  
Pyrogallol  
Introduction of Amino Dyes  
Early Commercial Development  
Quest for Substitutes; Protective Measures  
Research for Improved Products and Processes  
Advantages and Disadvantages of Oxidation Dyes  
Composition of Modern Oxidation Dyes  
Forms of Oxidation Dyes  
Regulations Governing Amino Dyes  
Research for New Days  
Plant Derivatives  
Henna  
Indigo  
Camomile  
Wood Extracts  
Mixed Wood Dyes  
Miscellaneous Plant Products  
Use of Mordants  
Advantages and Disadvantages of Natural Dyes  
Metallic Dyes  
Lead Dyes  
Silver Dyes  
Dyes for Eyebrows and Eyelashes  
Copper Dyes  
Compound Hennas  
Miscellaneous Metallic Dyes  
Advantages and Disadvantages of Metallic Dyes  
Toxicity of Metallic Hair Dyes

18. Packaging Cosmetic Preparations  
Packaging Requirements and Functions  
Packaging Materials and Containers

Tins and Jars  
Bottles and Flacons  
Tubes  
Stick Applicators  
Spray Cans  
Decoration of Cosmetics Packaging  
Future Ecological and Economic Challenges

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