

SNS COLLEGE OF PHARMACY AND HEALTH SCIENCES

Affiliated To The Tamil Nadu Dr. MGR Medical University, Chennai

Approved by Pharmacy Council of India, New Delhi.

Coimbatore -641035

**COURSE NAME : COSMETIC SCIENCE- BP809ET
B.PHARM IV YEAR / VIII SEM
UNIT II**

**SUB TOPIC : PRINCIPLES AND FORMULATIONS OF SKIN CARE AND MECHANISM OF ACTION OF
ANTIPERSPIRANTS AND DEODORANTS**

Principles of Formulation & Building Blocks of Skin Care Products

Face Wash	Moisturizing Cream	Cold Cream & Vanishing Cream
<p>Advantages</p> <ul style="list-style-type: none"> ◆ Cleanses & Removes Oil ◆ Refreshes Skin ◆ Prevents Acne <p>Disadvantages</p> <ul style="list-style-type: none"> ◆ Can Cause Dryness ◆ May Irritate Skin <p>Applications</p> <ul style="list-style-type: none"> ◆ Daily Cleansing ◆ Acne Treatments 	<p>Advantages</p> <ul style="list-style-type: none"> ◆ Hydrates & Nourishes ◆ Improves Skin Barrier <p>Disadvantages</p> <ul style="list-style-type: none"> ◆ Can Feel Greasy ◆ May Cause Breakouts <p>Applications</p> <ul style="list-style-type: none"> ◆ Dry Skin Care ◆ Anti-Aging 	<p>Cold Cream</p> <ul style="list-style-type: none"> ◆ Rich & Nourishing ◆ Ideal for Dry Skin <p>Disadvantages</p> <ul style="list-style-type: none"> ◆ Heavy & Greasy ◆ May Cause Breakouts <p>Applications</p> <ul style="list-style-type: none"> ◆ Night Creams ◆ Makeup Removal <p>Vanishing Cream</p> <ul style="list-style-type: none"> ◆ Light & Non-Greasy ◆ Matte Finish

Antiperspirants & Deodorants: Actives & Mechanisms of Action

Antiperspirants	Deodorants
Actives	Actives
<ul style="list-style-type: none">Aluminum Salts (e.g. Aluminum Chlorhydinate)	<ul style="list-style-type: none">Antibacterial AgentsFragrance Compounds
Mechanism of Action	Mechanism of Action
<ul style="list-style-type: none">Blocks Sweat GlandsReduces Perspiration	<ul style="list-style-type: none">Neutralizes OdorProvides Fresh Scent



Principles of Formulation – Part 1

Emulsification

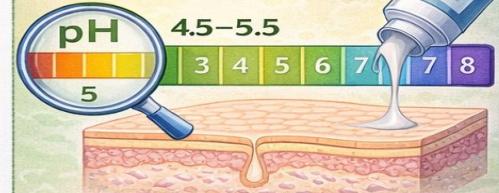
- ◆ Combines oil and water phases for stable mixtures



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pH Balance

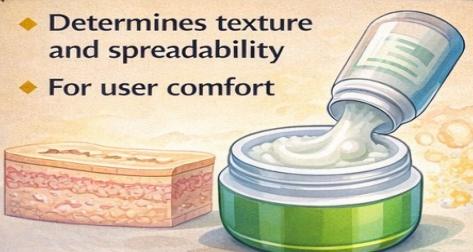
- ◆ Matches skin's natural pH (4.5–5.5)
- ◆ To avoid irritation



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Viscosity Control

- ◆ Determines texture and spreadability
- ◆ For user comfort



- ◆ Cleansers (e.g. Face wash)
- ◆ Specialized Formulations
 - ◆ Anti-acne, Anti-aging, Sunscreens, Medicated Cosmetics

Stability Testing

- ◆ Ensures product integrity over time
- ◆ Against separation or degradation



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Principles of Formulation – Part 2

Ingredient Compatibility

- ◆ Prevents reactions between actives, preservatives, and bases



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Bioavailability

- ◆ Enhances absorption of actives into skin layers



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Sensory Attributes

- ◆ Focus on feel, scent, and appearance
- ◆ For consumer appeal



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- ◆ Specialized Formulations
 - ◆ Anti-acne, Anti-aging, Sunscreens, Medicated Cosmetics

Regulatory Compliance

- ◆ Adheres to safety standards
- ◆ For ingredients like preservatives and allergens



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Building Blocks of Skin Care Products – Key Ingredients

Emollients

- ◆ Oils and lipids for smoothing and softening skin

- ◆ Mineral oil
- ◆ Shea butter



- ✓ Mineral oil
- ✓ Shea butter

Humectants

- ◆ Attract moisture to hydrate epidermis



- ◆ Glycerin
- ◆ Hyaluronic acid

Occlusives

- ◆ Form barriers to prevent water loss

- ◆ Petrolatum
- ◆ Silicones



- ◆ Petrolatum
- ◆ Silicones

- ◆ Emollients (e.g. Face wash)
- ◆ Humectants
- ◆ Occlusives

Surfactants

- ◆ Cleansing agents for foam and dirt removal

- ◆ Sodium lauryl sulfate



- ◆ Sodium lauryl sulfate

Building Blocks – Additional Components

Emulsifiers

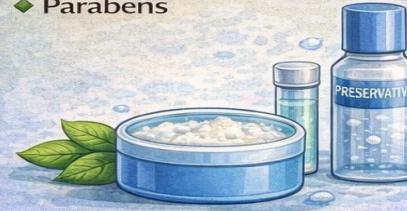
- ◆ Stabilize mixtures (e.g. cetyl alcohol, lecithin)
 - ◆ Cetyl alcohol
 - ◆ Lecithin



- ✓ Cetyl alcohol
- ✓ Lecithin

Preservatives

- ◆ Prevent microbial growth (e.g. parabens, phenoxyethanol)
 - ◆ Parabens



- ◆ Parabens
- ◆ Phenoxyethanol

Actives

- ◆ Targeted benefits
 - ✓ Vitamins
 - ✓ Antioxidants like vitamin E



- ✓ Water
- ✓ Oils
- ✓ Gels

Bases

- ◆ Water, oils, or gels as primary carriers for formulation
 - ◆ Water
 - ◆ Oils
 - ◆ Gels



Face Wash – Formulation, and Disadvantages

Formulation

- ◆ Surfactants (e.g., foaming agents)
- ◆ Water
- ◆ Mild cleansers
- ✓ May include exfoliants or botanicals



- ✓ Surfactants
- ✓ Water
- ✓ Mild cleansers

Advantages

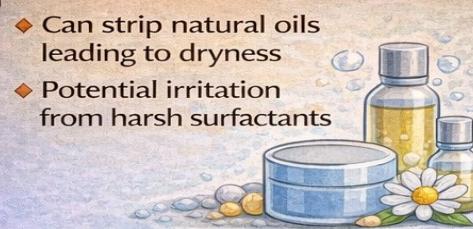
- ◆ Removes dirt, oil, and dead cells
- ◆ Refreshes skin
- ◆ Suitable for oily/acne-prone types
- ◆ Promotes better absorption of other products



- ✓ Removes dirt, oil, and dead cells
- ✓ Refreshes skin

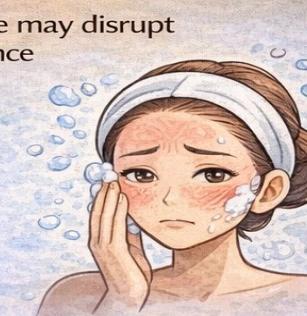
Disadvantages

- ◆ Can strip natural oils leading to dryness
- ◆ Potential irritation from harsh surfactants
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- ◆ Potential irritation from harsh surfactants



Disadvantages

- ◆ Over-use may disrupt pH balance



MOISTURIZING CREAM



Formulation



Water / Oil Emulsion Glycerin Oils Petrolatum

Advantages

-  Hydrates the Skin
-  Repairs Skin Barrier
-  Reduces Dryness & Irritation
-  Improves Texture & Elasticity

Disadvantages

•  Feels Greasy	•  Risk of Allergic Reactions
•  Short Shelf Life	• 
•  Can Clog Pores on Oily Skin	



VANISHING CREAM



Formulation



Oil-in-Water emulsion with stearic acid, alkali & Water
 Oil-in-water emulsion with stearic acid, alkali & humectants; lightweight and absorbent

Advantages

• Non-Greasy	• Matte Finish
• Quick Absorption	• Suitable for Oily Skin
• Matte Finish	• Acts as Primer or Base

Disadvantages

• Less Moisturizing for Dry Skin	• May Irritate Sensitive Types
• May Cause Breakouts	• Limited Barrier Protection

APPLICATIONS IN COSMECEUTICALS

OVERVIEW

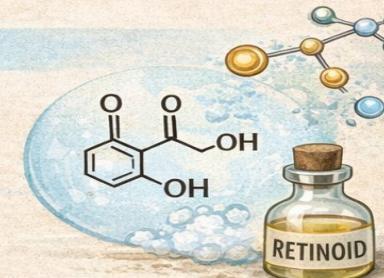
Cosmeceuticals

Hybrid of cosmetics and pharmaceuticals for therapeutic benefits (e.g., anti-aging, acne treatment)

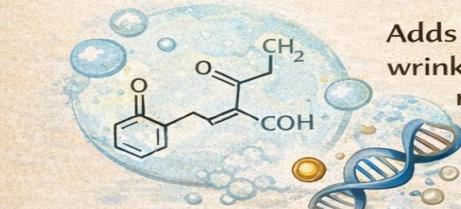
Face Wash



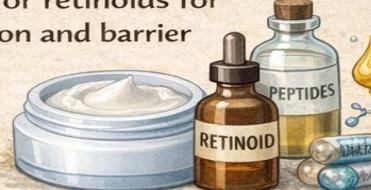
Incorporates actives like salicylic acid for exfoliation and acne control



Moisturizing Cream



Adds peptides or retinoids for wrinkle reduction and barrier repair



Enhances efficacy by delivering actives through familiar bases

Antiperspirants:

Actives & Mechanism of Action

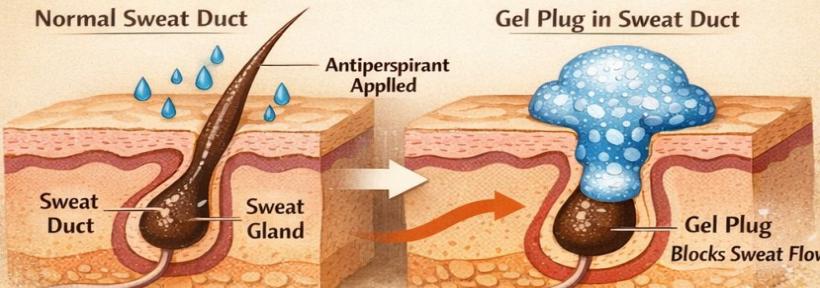
Actives:

Aluminum Salts (eg, Aluminum Chlorohydrate, Aluminum Zirconium Complexes)



Mechanism of Action

Forms Gel Plugs in Sweat Ducts



Normal Sweat Duct

Antiperspirant Applied

Sweat Duct

Sweat Gland

Gel Plug in Sweat Duct

Gel Plug Blocks Sweat Flow

Sweat Dissolves Particles → Plugs Into Pores to Block Flow

Reduces Sweat by 20-50%

Temporary Effect: Plugs Wash Away Over Time

Plus Odor Control

Antimicrobials to Reduce Bacteria



Deodorants

Actives & Mechanism of Action

Actives



Antimicrobials
(e.g. Triclosan, Ethylhexylglycerin)



Fragrances



Absorbent Powders
(e.g. Clays)



Inhibits Odor-Causing Bacteria Growth



Masks Smells with Scents



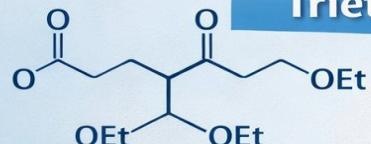
Absorbs Moisture

Does NOT Reduce Perspiration

Focuses on Microbiome Control & Neutralization

Common Active

Triethyl Citrate





Bacterial Inhibition

Formulation Principles:

Key Takeaways

Building Blocks

- Emollients
- Humectants



Effective & Stable Products

Product Selection

— Pros & Cons to Consider

Face Wash
for Cleansing



Creams
for Hydration



Cosmeceutical Benefits

— Added Therapeutic Value



Antiperspirants

— Blocks Sweat with Aluminum Plugs



Deodorants

— Fights Odor with Antimicrobials



Choose Based on Skin Type & Needs
For Optimal Results



Dry



Normal



Oily

The Moisturizer Identity Crisis

It promises to "Hydrate skin for 24 hours," but why does my skin still feel dry evening?

Critical thinking: Did the moisturizer fail... or did it only lock water that was never there?



Hidden Lesson: Not All Moisturizers Are The Same

Humectants	Emollients	Occlusives
Attract & Bind Water. Add Hydration. Glycerin Hyaluronic Acid...	Smooth & Soften. Repair Skin Barrier. Shea Butter	Seal & Protect. Prevent Water Loss. Petroleum Jelly Wax

The Right Balance is Key!

A good formula needs **Humectants** to Add **Moisture**, **Emollients** to **Smooth**, **Occlusives** to **Lock It In**.



The Deodorant Honesty Test

You stop sweating, but you still smell.

CRITICAL THINKING:

👉 Did the deodorant lie — or did it forget that bacteria, not sweat, create odor?



HIDDEN LESSON:

Deodorants reduce odor by antimicrobial action and fragrance, not by reducing sweat.



Antimicrobial Action



Fresh Fragrance

REFERENCES :

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- 2) Cosmetics- Formulations, Manufacturing and Quality Control, P.P. Sharma, 4th Edition, Vandana Publications Pvt. Ltd., Delhi.
- 3) Text book of cosmeticology by Sanju Nanda & Roop K. Khar, Tata Publishers.

