

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

Advantages

- ◆ Cleanses & Removes Oil
- ◆ Refreshes Skin
- ◆ Prevents Acne

Disadvantages

- ◆ Can Cause Dryness
- ◆ May Irritate Skin

Applications

- ◆ Daily Cleansing
- ◆ Acne Treatments



Moisturizing Cream

Advantages

- ◆ Hydrates & Nourishes
- ◆ Improves Skin Barrier

Disadvantages

- ◆ Can Feel Greasy
- ◆ May Cause Breakouts

Applications

- ◆ Dry Skin Care
- ◆ Anti-Aging



Cold Cream & Vanishing Cream

Cold Cream

- ◆ Rich & Nourishing
- ◆ Ideal for Dry Skin

Disadvantages

- ◆ Heavy & Greasy
- ◆ May Cause Breakouts

Applications

- ◆ Night Creams
- ◆ Makeup Removal



Vanishing Cream

- ◆ Light & Non-Greasy
- ◆ Matte Finish

Antiperspirants & Deodorants: Actives & Mechanisms of Action

Antiperspirants

Actives

- ◆ Aluminum Salts (e.g. Aluminum Chlorohydrate)

Mechanism of Action

- ◆ Blocks Sweat Glands
- ◆ Reduces Perspiration



Deodorants

Actives

- ◆ Antibacterial Agents
- ◆ Fragrance Compounds

Mechanism of Action

- ◆ Neutralizes Odor
- ◆ Provides Fresh Scent





Principles of Formulation – Part 1

Emulsification

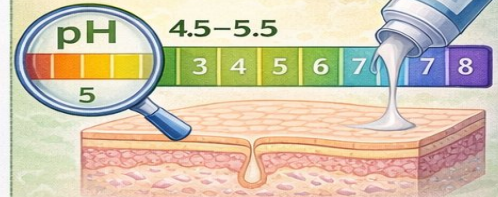
- ◆ Combines oil and water phases for stable mixtures



- ◆ Combines oil and water phases for stable mixtures (e.g., using surfactants and emulsifiers)

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

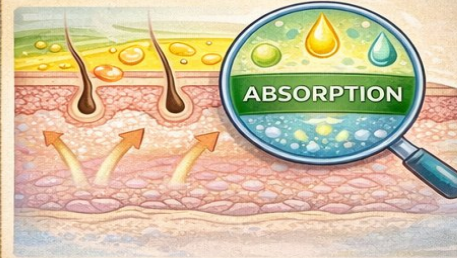
- ◆ Prevents reactions between actives, preservatives, and bases



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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



- ◆ **Cleansers** (eg. Face wash)
- ◆ **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

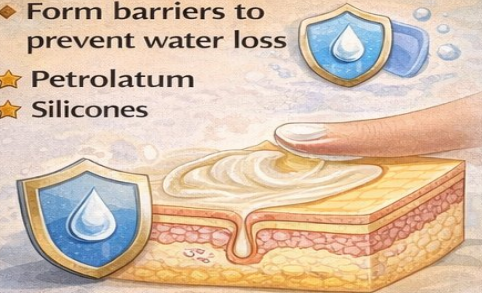


- ◆ Glycerin ◆ Hyaluronic acid

Occlusives

- ◆ Form barriers to prevent water loss

- ★ Petrolatum
- ★ Silicones



- ◆ Petrolatum ◆ Silicones

Surfactants

- ◆ Cleansing agents for foam and dirt removal

- ◆ Sodium lauryl sulfate



- ◆ Sodium lauryl sulfate

- ◆ Emollients (eg, Face wash)

- ◆ Humectants

- ◆ Occlusives

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

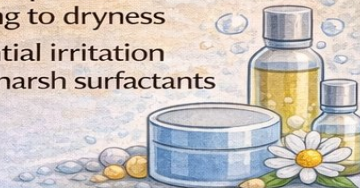
- ◆ Removes dirt, oil, and dead cells
- ◆ Refreshes skin
- ◆ Suitable for oily/acne-prone types
- ◆ Promotes better absorption of other products



- ✓ 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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Disadvantages

- ◆ Over-use may disrupt pH balance





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 | |

COLD CREAM



Formulation



Water-in-Oil Emulsion



Beeswax



Mineral Oil



Water

Water-in-oil emulsion with beeswax, mineral oil & water;
high oil content for protection

Advantages

<ul style="list-style-type: none"> •  Intense Moisturization •  Makeup Removal •  Soothes Dry Skin 	<ul style="list-style-type: none"> •  Soothes Dry Skin •  Prevents Winter Dryness
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Disadvantages

<ul style="list-style-type: none"> •  Greasy Feel •  May Cause Breakouts 	<ul style="list-style-type: none"> •  Not Ideal for Oily Skin •  Heavier Texture Limits Daytime Use
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VANISHING CREAM




Formulation



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



STEARIC ACID



ALKALI



Water

Advantages

<ul style="list-style-type: none"> •  Non-Greasy •  Quick Absorption •  Matte Finish 	<ul style="list-style-type: none"> •  Matte Finish •  Suitable for Oily Skin •  Acts as Primer or Base
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Disadvantages

<ul style="list-style-type: none"> •  Less Moisturizing for Dry Skin •  May Cause Breakouts 	<ul style="list-style-type: none"> •  May Irritate Sensitive Types •  Limited Barrier Protection
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APPLICATIONS IN COSMECEUTICALS

OVERVIEW

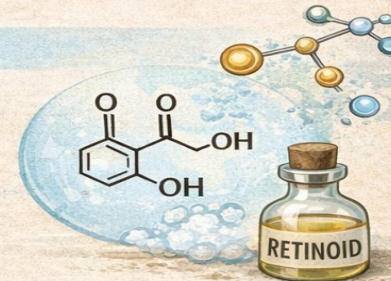
Cosmeceuticals

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

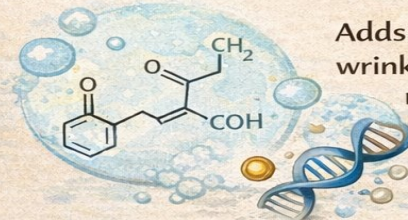
Face Wash



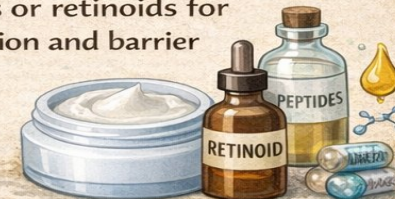
Incorporates actives like salicylic acid for exfoliation and acne control



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

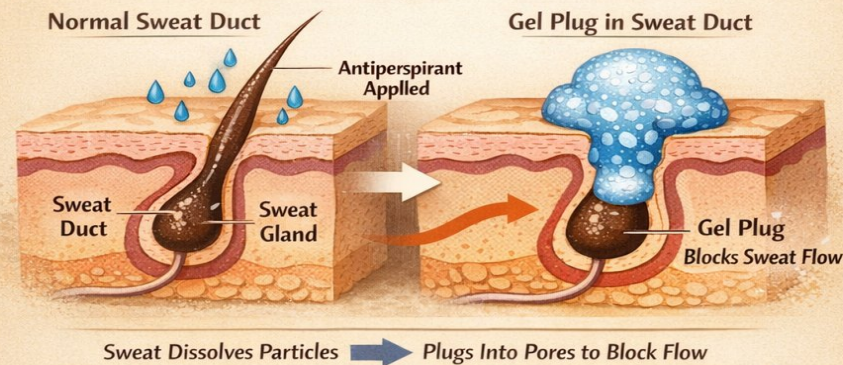
Actives:

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



Mechanism of Action

Forms Gel Plugs in Sweat Ducts



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)

Mechanism of Action



**Inhibits Odor-Causing
Bacteria Growth**



**Masks Smells
with Scents**



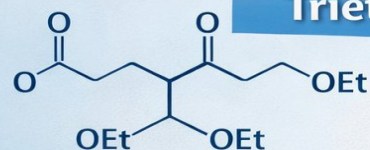
Absorbs Moisture

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?



24 HOUR HYDRATION!
or just a promise?

Dry Stratum Corneum

No Moisture to Lock In!

Hidden Lesson: Not All Moisturizers Are The Same

Humectants

Attract & Bind Water.
Add Hydration.



Glycerin

Hyaluronic Acid...

Emollients

Smooth & Soften.
Repair Skin Barrier.



Shea Butter

Occlusives

Seal & Protect.
Prevent Water Loss.



Petroleum Jelly

Wax

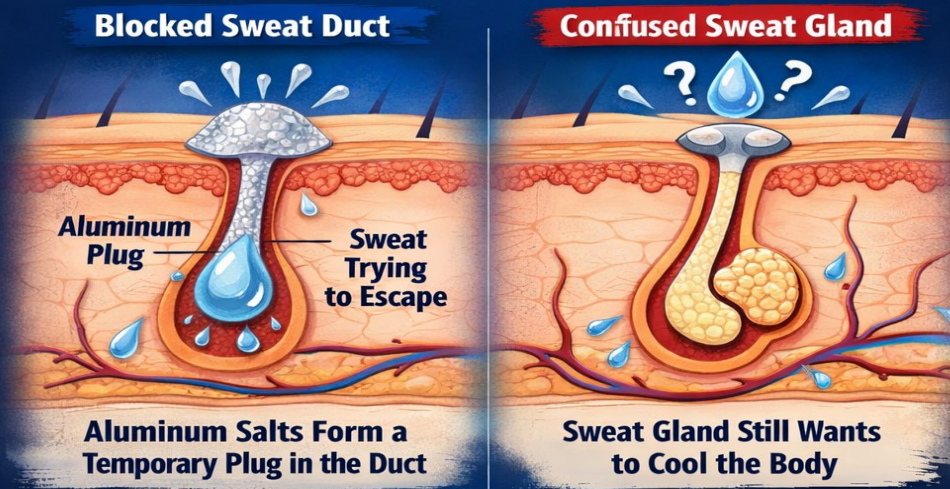
The Right Balance is Key!

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

The **Antiperspirant vs Sweat** Gland Puzzle

An antiperspirant blocks sweat, but the body still needs cooling.

Is the product **controlling** sweat... or **temporarily confusing** your eccrine glands?



Hidden Lesson:

Aluminum Salts Form Temporary Plugs in Sweat Ducts—They Do Not “Turn Off” Sweat Production.

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.



REFERENCES :

- 1) Harry's Cosmeticology, Wilkinson, Moore, Seventh Edition, George Godwin.
- 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.

