

Skin Cleansers

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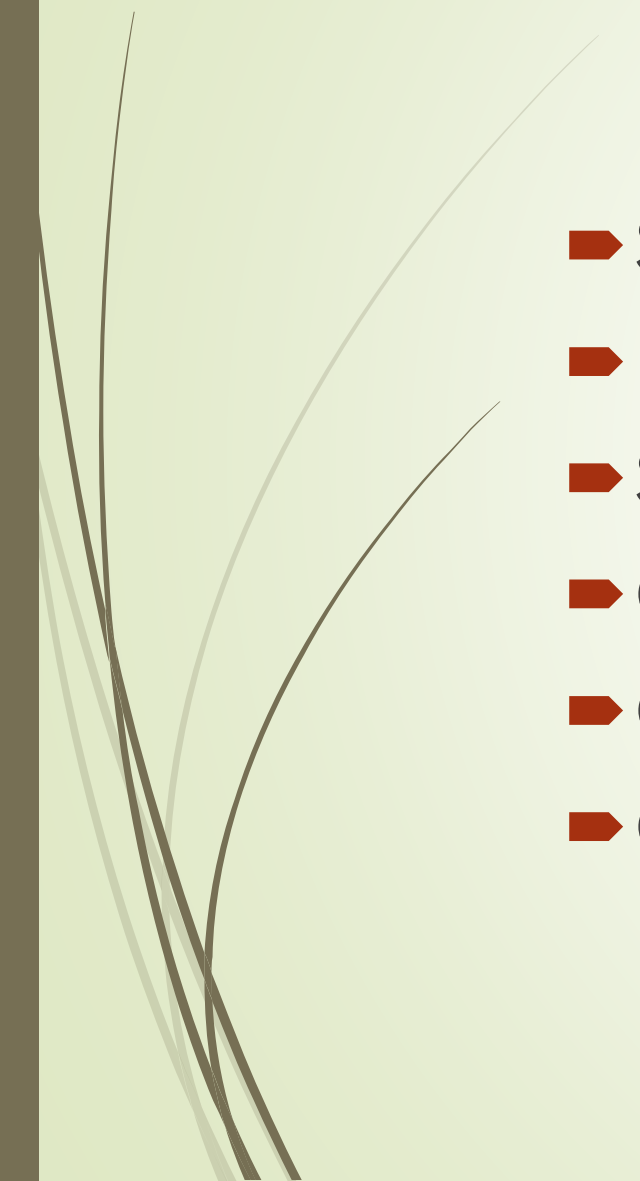
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Skin Cleansers: Introduction

- Use to remove dirt, makeup, environmental pollutants, germs, and other types of spoilage from the skin.
- Types:
 - Facial Cleansers,
 - Bath And Shower Products And
 - Hand Cleansing Products

Skin Cleansers : Introduction

- Many skin cleansers solubilize lipids that are found on the skin surface and even extract skin components, such as the NMF during cleansing
- Surfactants may remain in the SC after even rinsing the product with water.
- Surfactants disrupt the SC's structure and weaken its barrier function
- Order for the irritation potential of surfactants is
 - anionic surfactants > amphoteric surfactants > nonionic surfactants.
- Another factor that contribute to SC damage is the cleanser's pH. Soap-based cleansers are alkaline in nature, while the pH of most Syndets (synthetic surfactant-based cleansers) is close to neutral or slightly acidic.
- soap-based cleansers have a higher potential to irritate skin than cleansers with synthetic surfactants (syndets).



Skin cleansing products

- contain surfactants that are capable of emulsifying water-insoluble ingredients into micelles, which can be easily washed away from the skin.
- Ideally, cleansers should not damage the skin's complex structure and lead to irritation, dryness, redness, and itching.
- Unfortunately, many skin cleansers do cause changes in the skin's
- structure and barrier function, leading to various signs and symptoms.

Ideal Characteristics of skin cleansing product

- Neutral or pleasant odor and color
- Easy to rub on with appropriate foaming property
- Easy to spread
- Pleasant feeling during application
- Non-oily/non-greasy feeling
- Leaves no residue
- Moisturizes the skin while cleaning
- Non-comedogenic
- Well tolerated and non-allergenic
- Hand sanitizers: do not dry the skin, but kill bacteria and viruses.

- Long-term stability
 - Smooth texture
 - No microbiological contamination and growth
 - Appropriate rheological properties
 - Appropriate foaming activity
 - Appropriate performance
 - Appropriate pH
 - Dermatological safety.

Skin Cleansers: Types

1. Facial Cleansers,
2. Bath And Shower Products And
3. Hand Cleansing Products



Facial cleansers

- clean the facial skin,
- remove dirt and makeup,
- provide exfoliation, and
- remove potentially harmful microorganisms.

Products:

- lathering and foamless emulsions,
- gels, scrubs, toners, masks, and
- cleansing wipes.



Bath and Shower Products

- ▶ **remove dirt, perspiration, and dead cells from the body skin**
- ▶ **enhance the bathing experience, soften and moisten the skin and leave the skin feeling clean and fresh.**
- ▶ **Product types : bar soaps, bath salts, bath bombs, and bath oils to bubble bath products and shower gels.**

Hand cleansing products & Hand sanitizers

- **Hand cleansing products :**

- to clean the hands

- Product: bar soaps and syndet bars & liquid soaps.

- They are often enhanced with additional moisturizing ingredients.

- **Hand sanitizers :**

- remove microorganisms from the hands preventing infections and reducing the spread of infectious diseases.

- These product types are classified as OTC

- The classification includes alcohol-based and non-alcohol-based hand sanitizers

- Product: gels, lotions, creams, and cleaning wipes.




Cleansing Products – Basic Concepts

- ▶ **Classification Based on Chemical Nature and Mildness:**
three basic types of compounds can be found in skin cleansing products, including
 - ▶ soaps,
 - ▶ synthetic surfactants, and
 - ▶ solvents.



Soaps

- ▶ are salts of fatty acids.
 - ▶ alkali soaps of sodium, potassium, or ammonium ions form water-soluble soaps whereas zinc and magnesium make insoluble so-called metallic soaps.
 - ▶ Skin cleansing products contain water-soluble soaps.
 - ▶ The pH of soaps is alkaline and is usually in the range of 9.5–10.
 - ▶ This is one of the main reasons why soap-based cleansers can irritate the skin.
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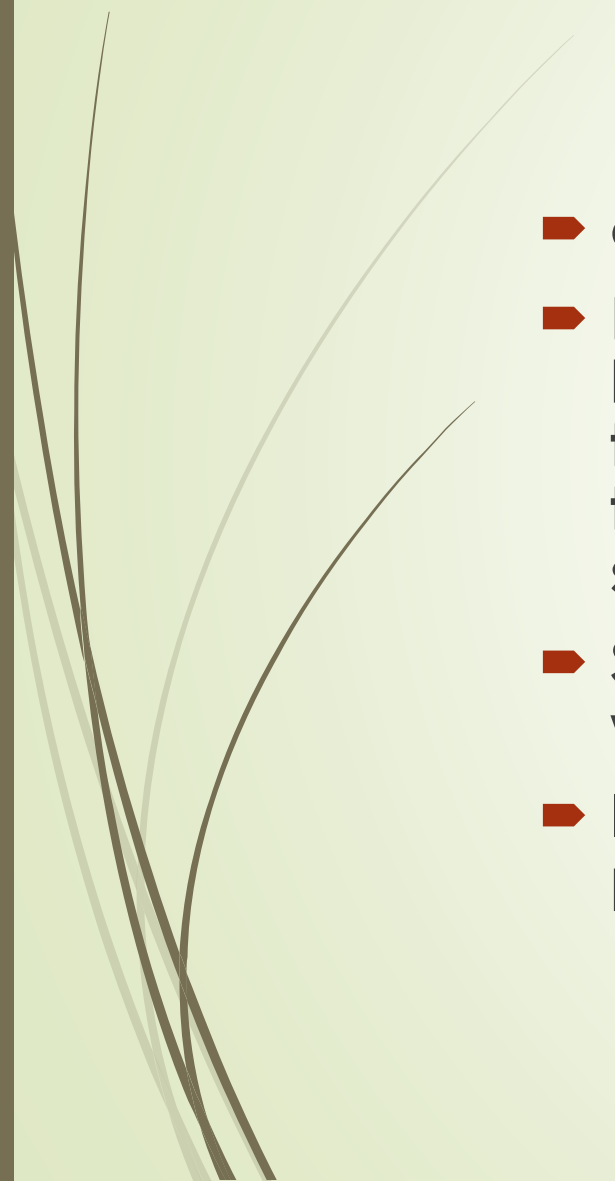


Synthetic surfactants/ Syndets

- ▶ referred to as “soapless” soaps or syndets,
- ▶ The most frequently used surfactants are anionic in nature, similar to soaps
- ▶ they are much milder to the skin and are, therefore, more popular.
- ▶ The difference in the chemical structure of the molecule and the pH of the final product (usually around pH 7) makes them much milder.



Solvents

- classified broadly as polar, semipolar, and nonpolar type.
 - Nonpolar solvent-based products, such as mineral oil, may be potentially advantageous for dry skin consumers since they can deposit a thin oil layer on the skin surface; however, they may be disadvantageous for users with oily skin, for the same reason.
 - Skin cleansing products containing alcohol can dry the skin, which may be beneficial for oily skin but not for dry skin.
 - It is very important, therefore, to select skin cleansing products in accordance with the skin type.
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Solvents

- Solvent-based systems clean the skin by dissolving sebum and external oils present on the skin as residues of cosmetics and similar materials.
- Solvents work under the chemical premise that “like dissolves like.”
- Solvent-based cleansers are usually not used in conjunction with water;
- they are applied and then wiped off with a tissue or cotton ball.

Soaps

- Soaps, chemically defined as the alkali salt of fatty acids (of animal or vegetable origin)
- are the most commonly used and
- usually have a simpler composition

Syndets

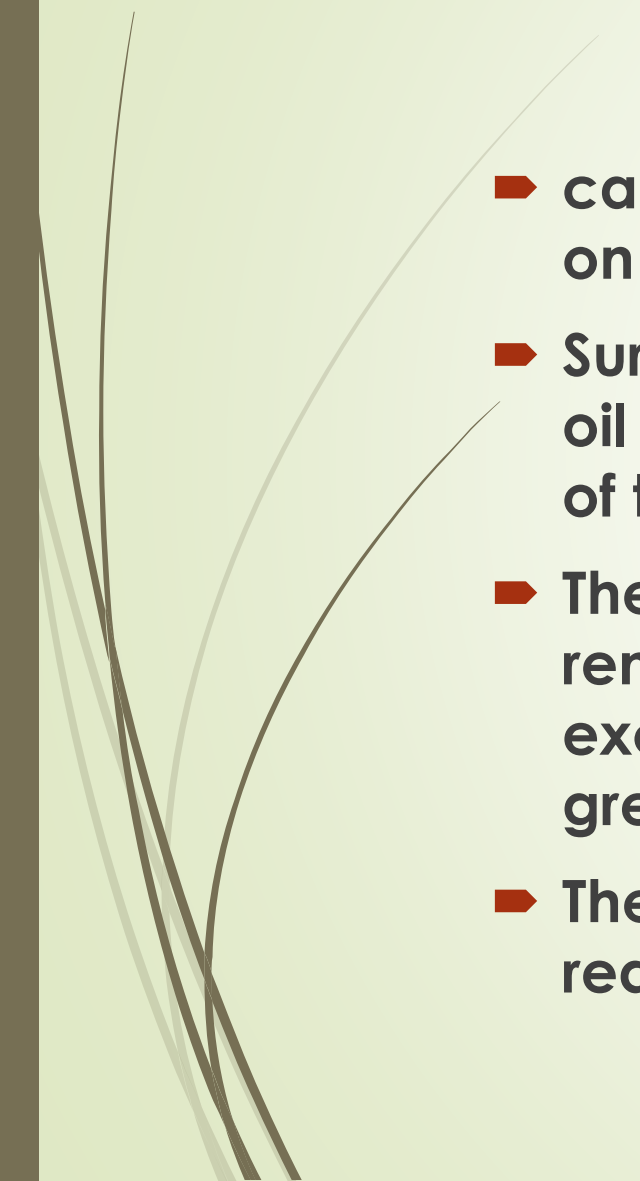
- Chief cleansing agents are surface-active substances that lower the surface tension on the skin and remove dirt in an emulsified form
- comprising moisturizers, emollients, preservatives, fragrances, lather enhancers, chelating agents (i.e. EDTA).

Skin Cleansers: Classification Based on Cleaning Principle

- ▶ two basic mechanisms can be attributed to the cleaning effect, namely,
- ▶ Chemical Cleaning And
- ▶ Physical Cleaning




Chemical Cleaning

- ▶ can be achieved through emulsifying and dissolving the dirt on the face.
 - ▶ Surfactants work by reducing the interfacial tension between oil and water i.e., emulsifying oily components on the surface of the skin with water.
 - ▶ The stronger the surfactant, the more hydrophobic material removed, the greater the potential skin damage from excessive removal of naturally occurring skin lipids and the greater the compromise of the skin barrier function
 - ▶ Therefore, correct and careful selection of surfactants is required to ensure proper mildness
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Physical cleaning

- the working principle is abrasion (friction),
 - Physical cleaning take place by the direct interaction of a washcloth, tissue, cotton ball, cleansing cloth, or abrasive particles and the surface of the skin.
 - Friction works to help remove dirt and increase the interaction of chemical cleaning agents with oils.
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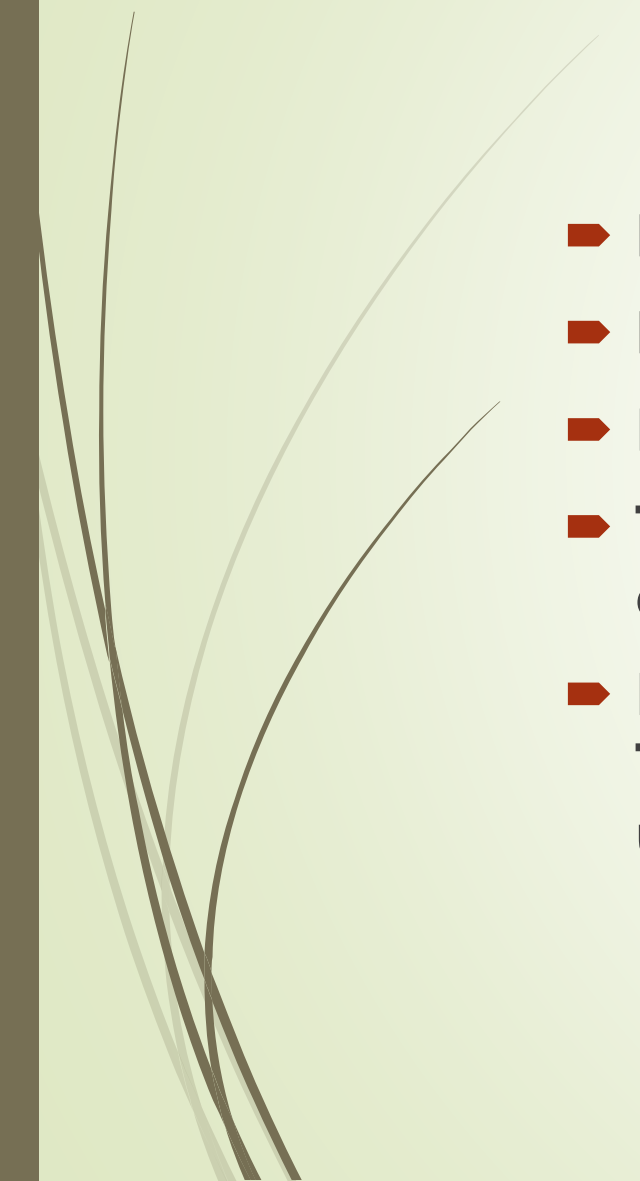


Skin Cleansers: Classification Based on Foamability

- Foaming Products,
 - Low-foaming Products and
 - Non-foaming Products.
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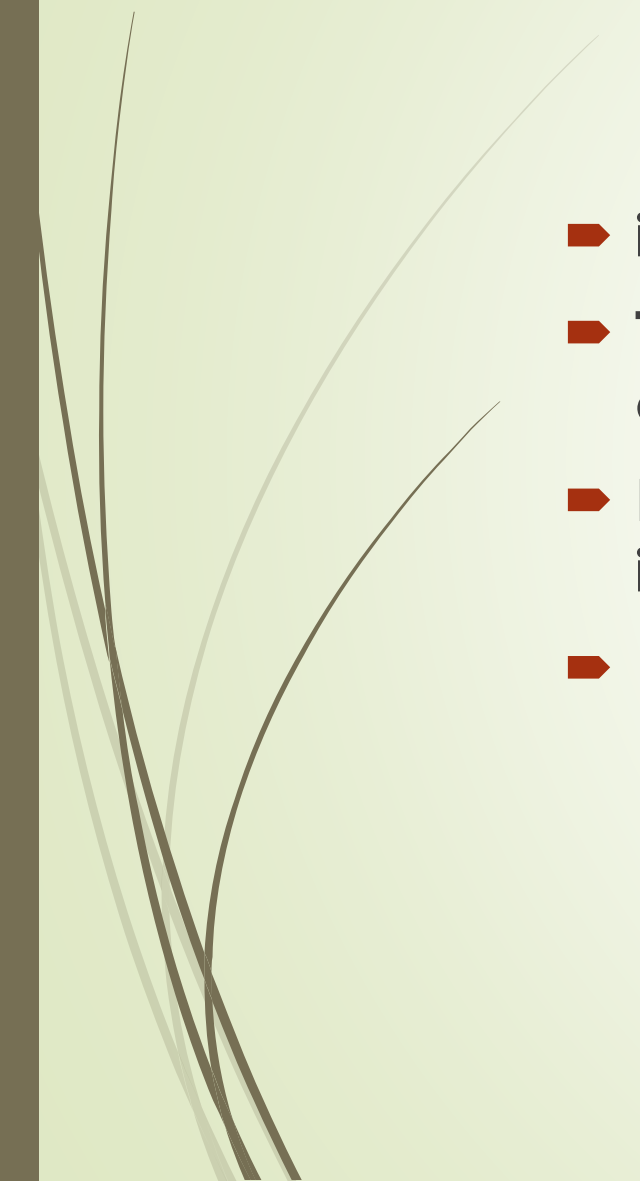


Foaming cleansers

- **Body Washes,**
 - **Hand Soaps, and**
 - **Facial Cleansing Products**
 - **These products are typically surfactant solutions, gels, scrubs, and O/W emulsions with a high cleaning power.**
 - **For the face, greater mildness are required. Therefore, generally, combinations of milder surfactants are used**
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Low-foaming cleansers

- include lotions, gels, scrubs, and creams.
 - These products primarily contain nonionic surfactants, often combined with amphoteric and polymeric types.
 - Foam-booster secondary surfactants may also be added to increase the user experience.
 - Low-foaming products are typically marketed for the face
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Non-foaming cleansers

- include surfactant solutions, creams, lotions, bath oils and toners.
- Cleansers in this category tend to be the mildest due to their low well-foaming surfactant or soap content.
- They can be
 - Solvent-based, such as **facial toners** and **hand sanitizers**, and
 - Emulsion-based, such as most **facial cleansers**, body washes, and hand soaps (which solubilize dirt). Emulsion-based non-foaming products contain the highest level of oils