Cosmetic Science

Cosmetic Products

Definition (FDA/EMA):

- A cosmetic is any substance or preparation intended to be applied to external parts of the human body (skin, hair, nails, lips, external genital organs) or the teeth and oral cavity to clean, perfume, change appearance, correct body odors, protect, or maintain good condition.

Classification Based on Application Area

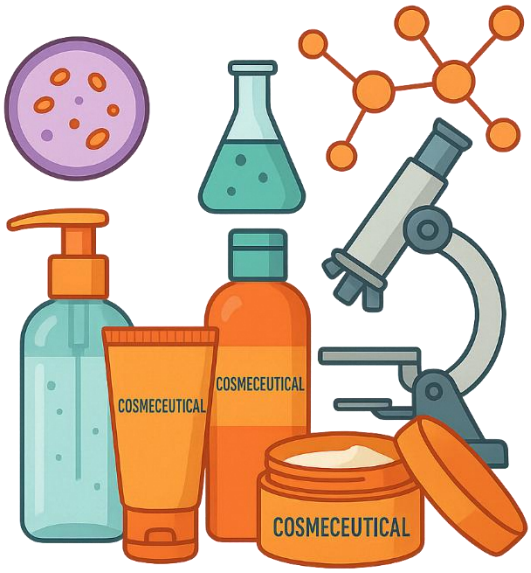
1. **Skin Care**
   - Moisturizers, Sunscreens (some OTC), Anti-aging creams (non-therapeutic), Whitening creams, Serums
2. **Hair Care**
   - Shampoos, Conditioners, Hair oils, Hair serums, Non-permanent hair dyes
3. **Oral Care**
   - Toothpaste (non-fluoride), Cosmetic mouthwashes
4. **Nail Care**
   - Nail polish, Nail removers, Cuticle creams
5. **Eye & Lip Products**
   - Mascara, Eyeshadows, Lipsticks, Non-medicated lip balms
6. **Fragrances**
   - Perfumes, Non-antiperspirant deodorants, Body sprays

Classification Based on Function

1. **Cleansing**
   - Soaps, Body washes, Face cleansers
2. **Makeup**
   - Foundations, Compacts, Blushes, Eyeliners
3. **Protective**
   - Barrier creams, Sunscreens (SPF-dependent regulation)
4. **Beautifying**
   - Lip gloss, Tints, Cosmetic BB/CC creams

Cosmeceutical Products

- A hybrid between cosmetics and pharmaceuticals, cosmeceuticals contain bioactive ingredients offering medical or drug-like benefits.
- Not officially recognized as a separate category by regulatory bodies like the FDA or EU, but widely used in the industry.
- They bridge the gap between cosmetics (beautifying) and pharmaceuticals (treating conditions).



Key Characteristics:

- Contain active ingredients like peptides, retinoids, antioxidants, hyaluronic acid, niacinamide, AHAs/BHAs.
- Aim for functional improvements (e.g., reducing wrinkles, pigmentation, acne).
- Supported by scientific research or clinical studies.
- Applied topically and may penetrate deeper skin layers.

Common Categories of Cosmeceuticals:

1. **Anti-aging Products**
   - Contain retinoids, peptides, coenzyme Q10
   - Target fine lines, wrinkles, and age spots
2. **Anti-acne Products**
   - Ingredients: salicylic acid, benzoyl peroxide, niacinamide
3. **Skin Lightening/Depigmentation Products**
   - Ingredients: kojic acid, arbutin, vitamin C, licorice extract
4. **Antioxidant-rich Products**
   - Vitamin E, Vitamin C, ferulic acid
   - Protect against oxidative stress and pollution
5. **Skin Repair and Barrier Enhancement**
   - Ceramides, panthenol, hyaluronic acid
6. **Hair Growth and Scalp Treatment Products**
   - Caffeine, biotin, minoxidil (regulated as a drug if therapeutic claim made)

Cosmetics Definition

India (Drugs and Cosmetics Act, 1940):

- A cosmetic is any product intended to be applied to the human body (skin, hair, nails, etc.) for cleansing, beautifying, or altering appearance, without therapeutic intent (not for treating diseases).
- It includes components of cosmetics and is governed by the CDSCO.

Key Points:

- Non-therapeutic (not for disease treatment).
- External application.
- Focus on appearance and hygiene.

European Union (EU Regulation EC No 1223/2009):

- A cosmetic product is any substance intended for external use (skin, hair, teeth, or mucous membranes) for cleaning, perfuming, changing appearance, protecting, or maintaining condition, with no therapeutic claims allowed.

Key Points:

- External body application.
- No therapeutic claims.
- Covers skincare, makeup, hair, and oral products.
- Requires safety assessment and compliance with ingredient restrictions.

Evolution of Cosmeceuticals from Cosmetics

- Cosmeceuticals are cosmetic products that contain bioactive ingredients offering therapeutic benefits.
- Though not recognized legally as a separate category by most regulatory authorities, they are widely used in the cosmetic industry.

Key Milestones in the Evolution of Cosmeceuticals:

1. ### Ancient Times:
   - **Development**: Use of natural substances.
   - **Notes**: Oils, herbs, and clays were used for beautification and hygiene.
2. ### Early 20th Century:
   - **Development**: Rise of synthetic cosmetic ingredients.
   - **Notes**: Commercial production of creams and makeup began.

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