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Review Article

Review On: Facewash Tablet

Tanvi Bhosale*, Mohin Jagoje, Shravani Dhanve, Sujal shete, Anuja Nirwane, Dr. Nilesh Chogule

Ashokrao Mane Institute of Pharmacy, Ambap

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ABSTRACT

Cleansers, sometimes referred to as face wash products, are essential for maintaining the health of facial skin since they remove dirt, oil, and pollutants from the skin without dehydrating it. They work well on a range of skin types, including combination, oily, dry, and sensitive skin. Various face wash compositions, including gel, cream, foam, micellar, and clay, are designed to meet individual needs and provide advantages such as makeup removal, deep pore cleaning, and moisturising effects. Face wash tablets are one of the more recent developments; they dissolve in water to provide a mild cleaner. These pills meet the increasing demand for herbal and chemical-free cosmetics because they are small, easy to carry along, and made of natural materials. Natural surfactants, antioxidants, and moisturising ingredients are frequently included in the formulas to offer a customised cleansing experience. Face cleansers are beneficial since they can address specific skin conditions while preserving the health of the skin. Optimising skin care requires an understanding of the characteristics and workings of different types of face wash.

INTRODUCTION

Facewash-

Facewash products that cleanse the face without drying it out are called face washes. Another typical term for face wash is "cleanser." All skin types were found to benefit similarly from face wash products. Face wash works wonders to moisturize dry skin and remove oil and debris from the skin. You can clean your face with cleansers and face washes to get rid of debris, oil, and other

pollutants. A cleanser removes extra oil makeup and dirt from you while Bots paraphrases your lines, assisting you in swiftly and effectively revising and rephrasing your material!^[1] Because facial skin is so thin, regular soaps might dehydrate it. A face wash is a gentle cleanser that fulfills the essential tasks of keeping skin clear, smooth, and fresh while also moisturizing the horny layer of the skin without being too harsh on it^[2]. so that skin seems vibrant and youthful. Facial

***Corresponding Author:** Tanvi Bhosale

Address: Ashokrao Mane Institute of Pharmacy, Ambap.

Email ✉: bhosaletanvi4212@gmail.com

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skin is the delicate and ordinary soaps can cause it to lose moisture.^[3] "Properties of face washes include cleansing, moisturizing, anti-acne, and anti-wrinkle effects. It is believed that skin-lightening agents function by inhibiting the generation of melanin in melanocytes, hence lowering the amount of melanin on the skin's metabolism and melanin production^[4]. Ingredients that inhibit the production of melanin, such as propanediol and evodia rutaecarpa, are less harmful to melanocytes. ^[5]fruit extract, arbutin, kojic acid, and vitamin C and its derivatives, are used in whitening cosmetics.^[6]

Types of Face Wash

In general, a face wash is suitable for all skin types; however, there are now a variety of products on the market that are formulated to suit various skin types. For instance, an oily skin face wash is designed for people with oily skin conditions; it does not contain oils and instead leaves a thin film of oil on the skin^[7]. There are numerous varieties of face washes on the market, including ones for oily, dry, and regular skin ^[8]

➤ Gel face wash

The gel face wash is clear, has a gel-like consistency and is great for people with oily, acne-prone, sensitive skin. Designed for deep cleansing, gel cleansers glide on the skin and work towards washing away excess sebum from your pores while unclogging and nourishing every inch of your skin without being too harsh. It is important to look for a mild gel facial cleanser, like the vitamin C gel facewash that doesn't strip the skin of its natural oils and leaves it feeling moist and fresh all the time. Gels are solid, jelly-like substances with a range of characteristics, from soft and brittle to rigid and resilient. A gel is a cross-linked system that is significantly diluted and does not flow in its steady state. Although gels are primarily liquids by weight, a three-dimensional cross-linked network inside the liquid gives them the characteristics of solids. A gel's

structure (hardness) and ability to adhere (tack) are attributed to the cross-linking that occurs inside the fluid. The solid is the continuous phase and the liquid is the discontinuous phase; in this sense, gels are a dispersion of liquid molecules within a solid. In the 19th century, Scottish chemist Thomas Graham borrowed the word "gel" from gelatin.^[9]

➤ **Cream face wash** Cream face wash usually contains moisturizing components like milk or honey and has a thicker viscosity. Deep cleansing and complete hydration are the goals of lotion or cream-type cleansers. Because of their thicker and more potent composition, they can be used to remove makeup and work well on all skin types, particularly dry, older skin in the winter. If you like double cleansing, the cream face wash is also a fantastic option for your second step.^[10]

➤ **Foam face wash** cleansers are an excellent choice for combination skin types because they fall somewhere between gel and cream cleansers. They may begin as gel or cream before exploding into a rich, frothy consistency. Similar to gel facewashes, foam cleansers aid in the removal of excess oil. Your skin feels revitalized and incredibly light as the foamy particles remove debris, filth, and pollutants. But after using a foam cleanser, be sure to moisturize your skin well because it tends to remove important oils.^[10]

➤ **Micellar cleanser** Micellar water, which resembles plain water in both appearance and texture, is the lightest kind of cleaner. It is composed of small oil molecules that, with or without rinsing, attract and lift oil, grime, and makeup. All skin types can benefit from this cleanser's moderate, delicate, yet effective composition. It is a multipurpose solution that effectively cleanses, tones, and removes makeup.^[10]



- **Clay face wash** By removing extra oil and pollutants from your pores, clay face cleansers cleanse your skin and leaving it feeling renewed and glowing. Clay face cleansers are ideal for oily and combination skin types, but because they often don't include harsh ingredients or cleaning agents, they can also be used on sensitive skin.^[10]
- **Bar cleanser** Your typical soap is not the bar cleaner. It is a moisturizing, soap-free washing bar that is kind to the skin and effectively removes excess oil, debris, and makeup. It is very easy to use and carry, doesn't remove your skin's natural oils, and works well for people with dry skin.^[10]
- **Powder facewash** – For those with sensitive skin who wish to eliminate dead skin cells without resorting to a harsh scrub, powder face cleansers are particularly beneficial.
- **Whitening facewash:** The components in facewash serve to enhance the texture of your skin and remove tans, but they don't lighten your natural skin tone.
- **Detoxifying facewash:** The components in this type of facewash aid in the removal of toxins and other impurities from the skin, as well as the deep cleansing of the skin.^[10].

Facewash Tablet

A face wash tablet is a tiny, solid tablet that is intended to dissolve in water to form a facial cleanser. It is composed of a blend of natural and/or mild substances. Typically, these tablets are small and portable. Kind to the skin, Suitable for all skin types and problems, free of harsh chemicals, artificial scents, and colors, Simple to use and free of sloppy liquids or packing Herbal cosmetics have recently attracted a lot of attention and increased in popularity. Herbal formulations emerged as a result of customer concerns around chemical and synthetic additives. They are learning how to employ plants to meet their basic desire for beautiful, healthy skin.^[13]

Compared to synthetic components, herbal formulations are more active and have fewer negative effects. Topical face cleansers derived from natural components are used in natural face care. Since they are said to have potential benefits for facial skin care, a variety of plant-derived substances, including herbs, flowers, roots, stems, essential oils, etc., are utilized to formulate herbal formulations. Herbal cosmetics, such herbal face wash, are frequently used on a regular basis. ^[14]



figure 1-facewash tablet

<https://images.app.goo.gl/WZs4HBXJ1cD7GAYSA>
Application of facewash tablet

- 1] Efficient elimination of contaminants, oil, and grime^[15]
- 2] Fits a variety of skin types, including sensitive, dry, oily, and normal ^[16]
- 3] Aids in inflammation reduction and acne management^[17]
- 4] Sustainable components^[18]
- 5] Mitigating inflammation and skin irritation^[19]
- 6] Cleaning before applying cosmetics^[20]
- 7] Treating skin disorders (psoriasis, eczema)^[21]

1.3 Skin-

Covering the entire body, the skin is the biggest organ in the human body. It helps with the perceptions of touch, pressure, temperature, and vibration, controls body temperature, and acts as a barrier to protect against outside influences.

Structure of skin

The largest organ in the body is the skin. The epidermis, dermis, and subcutaneous layer are its three primary layers.

Epidermis

On the outside, it is an elastic layer that regenerates continuously. It consists of the following: The primary cells of the epidermis, known as keratinocytes, are created by cell division at the base. The surface is constantly being approached by new cells. They eventually die and flatten as they migrate.

- Corneocytes: Also known as the stratum corneum or horny layer, these flattened dead keratinocytes collectively comprise the epidermis' outermost layer. This barrier is constantly being eroded or shed.
- Melanocytes: these cells create the pigment melanin, which provides skin its color and UV protection.

Dermis

The following are included in the inner layer- Sweat is produced by sweat glands and then transported to pores in the epidermis via sweat ducts. They have a part in controlling the temperature.

The pits where hairs sprout are called hair follicles. The regulating of temperature is another function of hairs. Sebum, an oil, is produced by sebaceous glands to keep hairs free of bacteria and dust.

Subcutaneous Layer

Connective tissue and fat (a excellent insulator) make up the layer underneath the dermis.

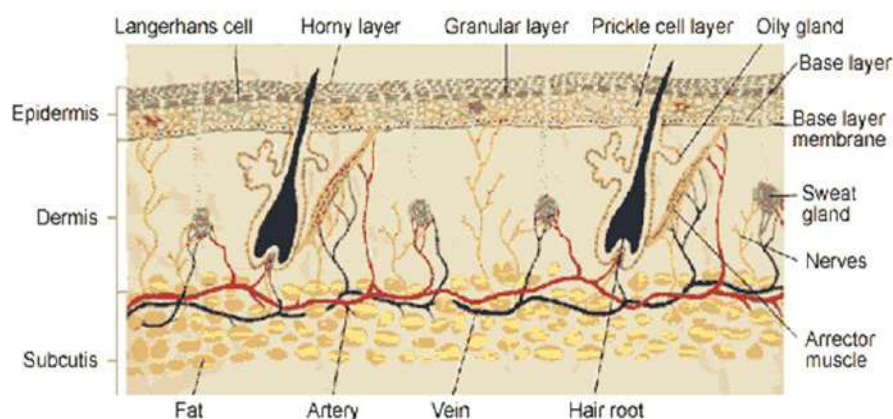


Figure 2- structure of skin

1. Hyaluronic acid is a great natural moisturizer since it can retain up to 1000 times its weight in water. (Journal of Clinical and Aesthetic Dermatology (2011) is the source.)

2. Skin Barrier Function: When the moisture content drops below 10%, the skin's barrier function is weakened. (The 2017 British Journal of Dermatology is the source)

3. Acid Hyaluronic: 1. Skin pH: The pH of the skin is naturally between 4.5 and 5.5, which is somewhat acidic. (The Journal of Investigative Dermatology (2018) is the source.)

4. Skin Elasticity: As collagen and elastin are lost, skin elasticity declines by 1.13% annually. The Journal of Cosmetic Dermatology (2012) is the source.

5. UV Radiation: Eighty percent of the obvious aging symptoms, such as wrinkles and age spots, are caused by UV radiation. The 2020 Skin Cancer Foundation is the source.^[28]

• Mechanism of skin

One humectant that is found naturally in the skin and is essential for preserving skin moisture is hyaluronic acid (HA). HA is a great natural moisturizer because it can retain up to 1000 times its weight in water.^[29] When applied topically, HA attracts and holds onto moisture from the surroundings by creating a hydrophilic (water-loving) layer on the skin's surface. Maintaining skin firmness and elasticity, enhancing skin tone and texture, and lessening the visibility of wrinkles and fine lines are all aided by this. Calm and soothe inflamed, dry skin^[30]

2. Formulation of facewash

2.1 Surfactant

All of the soaps and cleaning supplies you use contain sodium lauryl sulfate (SLS), which is a mixture of water and oil. However, they don't mix together by themselves. This explains why surfactants are found in so many items. They combine the components that enable cleaning. Making sodium lauryl sulfate is fairly simple and affordable, and it works well in a variety of circumstances. It is mentioned as a component in many everyday household and office items.

Personal Products - These consist of items such as –

Body wash and hand soap.

Tooth paste • Shampoo • Bubble bath • Facial cleaner

SLS is a foaming agent as well. SLS is used in several of these products to create a foamy effect while cleaning. You are most likely using an SLS-containing product if you have a frothy face wash or are getting a good lather with your shampoo.^[31]

2.2 Moisturizer-

Glycerin: You're probably going to use a hydrating ingredient like hyaluronic acid, ceramides, or even squalane when your skin needs a moisture boost. Perhaps more beneficial, however, is glycerin, the tried-and-true component that forms the foundation of thousands of moisturizing creams. Glycerin's primary advantage is, of course, well-hydrated skin that looks dewy, plump, and smooth. Glycerin in cleansers keeps the skin's natural oils from being stripped away, preventing a tight, dry feeling. Additionally, glycerin can improve the way other topical ingredients—particularly lipids—are absorbed.^[32]

A well-known preservative in the food and cosmetics sectors is potassium sorbate, which is a

potassium salt of sorbic acid. Potassium sorbate serves as an efficient preservative in skincare products such as moisturizers, cleansers, and toners. It stops the growth of molds, fungus, and other dangerous microorganisms that could jeopardize the efficacy and safety of the product. Because of its delicate nature, it can be used in products made for sensitive skin as well as other skin types.^[33]

2.3 pH Adjuster

Citric acid: There are numerous advantages of citric acid for the skin. Adding citric acid to your skincare routine will help you attain a healthier, more radiant complexion by controlling acne, lowering pigmentation, exfoliating, and whitening your skin. Because of its skin-lightening qualities, citric acid has been shown to be useful in minimizing the appearance of black spots, hyperpigmentation, and uneven skin tone. Citric acid can help balance out your skin tone and enhance its overall shine by preventing the synthesis of melanin, the pigment that causes dark spots and discoloration.^[34]



Figure 3-How to use of facewash tabl
<https://images.app.goo.gl/HiitjRNxjfv8ZU6p8>
Method of preparation of facewash tablet^[35]

Weight 5% of drug in 500 mg weight of total tablet

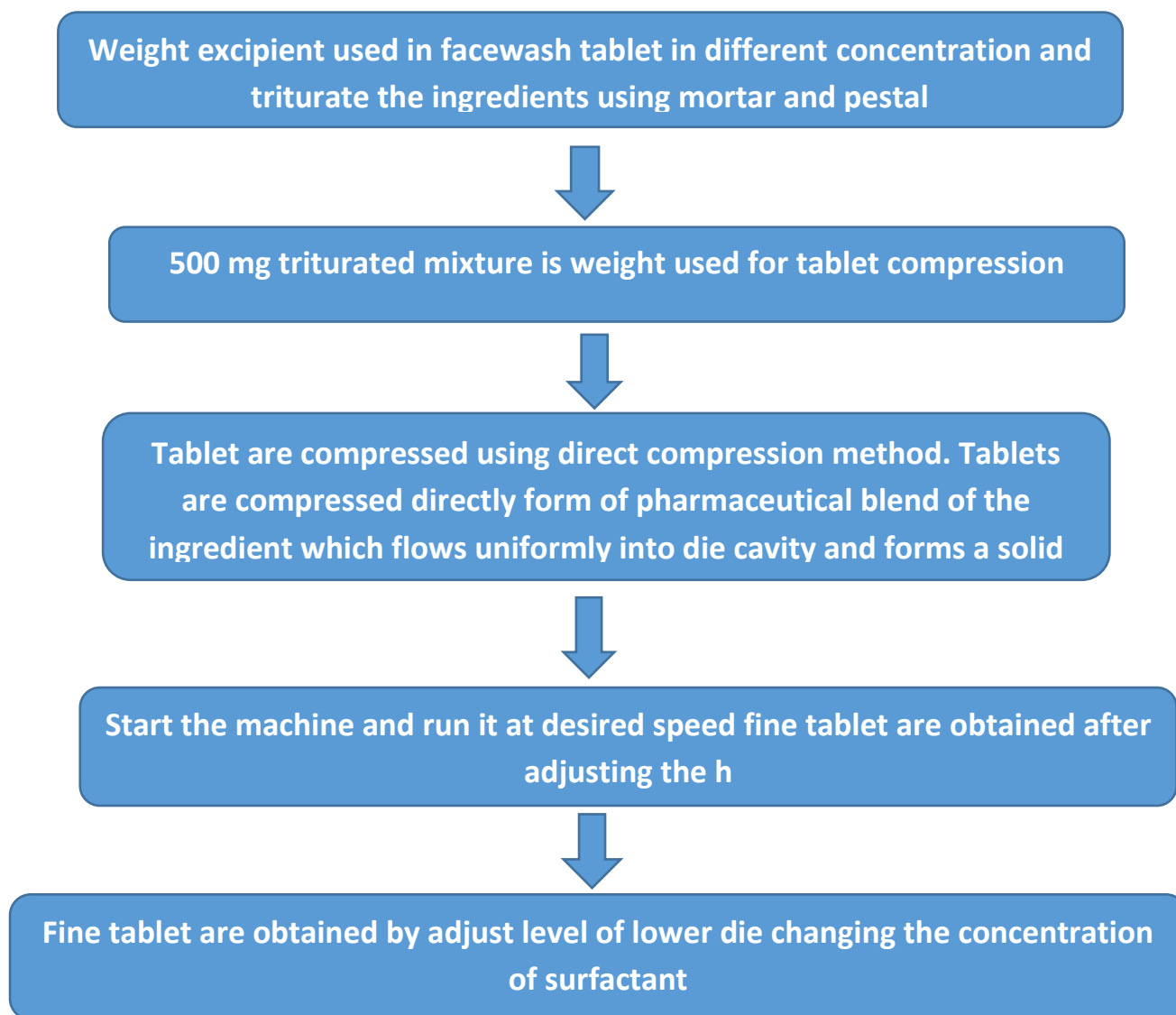


Figure 4- Facewash tablet

4. Pre formulation studies -

4.1 Angle of repose - A pile of powder's angle of repose is the greatest angle that can exist between its surface and the horizontal plane. Using the angle of repose, one can determine the interparticle force or friction force in a

powdered bulk. A formula to determine the angle of repose. $h/r = \tan \theta$ where h is height, r is radius, and θ is angle of repose.

4.2 Bulk density - Bulk density is the ratio of the mass of the powder to the bulk volume. The powder's bulk density may vary based on the size distribution, shape, and stickiness of its constituent particles. Using the untapped powder volume, which is expressed in kilograms per cubic centimeter, the bulk density of powder is computed. The method used to calculate bulk density is **The bulk density of a sample is equal to its weight in grams divided by its volume.**

4.3 Tapped density - The amount of vacant space in a powder after the bulk quantity has been tapped is represented by the term "tapped density." Powder's taped density is calculated using

The weight of the powder divided by the calculated density

4.4 Hausner's ratio - The ratio of tapped density to bulk density or bulk volume to tap volume is known as Hausner's ratio. It is a measurement of the powder's compressibility. It is calculated using **Hausner's ratio, which is equal to Tapped density divided by Bulk density.**

4.5 Carr's index / Compressibility index- The powder's cohesiveness, particle size distribution, and flow rate are all correlated with Carr's index. A powder's compressibility is determined by its bulk density and tapped density. **Carr's index (percentage) = Bulk density - Tapped density/Tapped density×100 is used to calculate it.**

5. Evaluation of facewash tablets –

The prepared face wash tablets were assessed using the following criteria.

5.1 Physical evaluation - The prepared facewash tablets' physical characteristics, including their colour and appearance, were evaluated.

5.2 Hardness test - The hardness of a tablet indicates how well it can withstand mechanical shock. Kg/cm² was the unit of measurement for hardness. A hardness tester (Monsanto) is used to measure hardness. Three to five tablets are chosen at random from the created batch, and their hardness is tasted and recorded. Tablets should have an average hardness of 3 to 8.

5.3 Thickness - A Vernier calliper is used to measure the thickness of tablets. Tablet thickness is measured in kg/cm² and should not exceed ±5.

5.4 Friability test - A friabilator is used to assess the tablets' friability. Weighing the tablets and turning on the friabilator are necessary. Press the count key to set the time and counts to 100. Insert the tablets into the rotating chamber to begin the rotation. Gather the tablets and weigh them after the rotation. Ten tablets are randomly selected from each batch for testing. Tablet weight reduction shouldn't be more than 0.5–1% of the starting weight. **Friability = (starting weight-final weight) / initial weight × 100 is the formula used to calculate friability.**

Weight variation - IP states that 20 tablets were chosen from each batch, and each tablet's weight was recorded. Individual tablet weight variations are noted by comparing them to the mean value. It is recommended that the weight variation not exceed ±7.5.



Figure 5- Foam ability

5.6 Foam ability - Drop the tablet into a 250 ml measuring cylinder that has been partly filled with water. Place your palm over the cylinder and shake it for a few minutes. Calculate how much foam is created.

5.7 Wash ability - By putting the formulation to the skin, washing it with water, and manually checking, the face wash tablet's washability was evaluated.

5.8 Determination of pH - To avoid irritating the skin, the pH of the facewash tablet was designed to be comparable to that of the skin. By making a 1% aqueous solution of the formulation, it was ascertained. The calibrated

digital pH meter was used to measure it at a steady temperature.

5.9 Irritation test - Skin irritation testing is essential in the development of medications and cosmetics. Over the course of one to two hours, the formulation was applied to a 1 square centimeter region of the dorsal skin of the left hand, and the area was monitored for redness, irritability, and edema.

5.9 Stability studies - 500 mg of face wash tablets were kept in a stability chamber for three months with the temperature and humidity maintained at $40\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}/75\%$ and $\text{RH} \pm 5\%$, respectively, to satisfy the (WHO) ICH standards for class I V climatic conditions.^[37,38]

6. CONCLUSION

Tablets based on face wash present a promising advancement in skincare by fusing gentleness, effectiveness and convenience. These tablets are set to become a mainstay of contemporary skincare regimens as research continues to reveal their full potential. We suggest Face Wash pills based on this review for- people looking for a quick, travel-friendly skincare treatment, People with moderate dermatological disorders or sensitive skin, Easy to use, portable, and convenient, Benefits to skin health and effective cleansing, Fit for a range of skin types and concerns. Prospective Research Paths -Future research should look at the following to further determine the advantages and best practices of face wash-based tablets: Effects on skin health over time, The effectiveness of conventional face cleansers in comparison, Degradation and stability of ingredients, Options for customization for a range of skin types and issues, Long-term consequences and personalization choices should be the main topics of future research.

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