



A Review on Ingredient of Herbal Acne Face Wash

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ABSTRACT

Herbal face washes harness the natural power of plant-based ingredients to cleanse and rejuvenate the skin. They typically feature extracts from herbs such as neem, aloe vera, and turmeric, known for their soothing, anti-inflammatory, and antioxidant properties. These face washes are formulated to gently remove impurities and excess oil without stripping the skin of its natural moisture. Ideal for various skin types, herbal face washes aim to enhance skin health, provide a refreshing cleansing experience, and support overall skin vitality through the beneficial properties of their botanical ingredients. This article is a review about various types ayurvedic or herbal ingredients which can be used for production of herbal face wash.

KEYWORD: Facewash, acne, herbal, natural ingredient.

INTRODUCTION:

The Indian herbal drug industry is considered to be one of the oldest systems of medical care in the world. Its roots can be traced back to ancient India, where the use of herbs for medicinal purposes was mentioned in the Vedas, an ancient religious text. Ayurveda and Unani, two ancient healing methods, utilized herbs and natural products to address various health conditions. Despite being perceived as a recent trend by Western medical practitioners, plant extracts are still commonly used in most prescribed medicines today^[1].

Cosmetics: The word cosmetic comes from the Greek word meaning to embellish. Cosmetics are substances that come into contact with various parts of the human body, such as skin, hair, nails, lips, and teeth. It helps improve or change the appearance of the human body, mask body odor, and protect and condition the skin. In other words, cosmetics are topical products applied externally to the body. Cosmetics can also be applied to the mucous membranes of the mouth and teeth to cleanse and flavors them. Cosmetics can be defined as substances that are rubbed, sprayed, or applied to the human body in a similar manner to enhance, purify, beautify, or alter its appearance. Gentle cosmetics have a nourishing effect on skin and hair^[2].

Herbal cosmetics: Herbal cosmetics are defined as cosmetics with desired biological activity. Oriental cosmetics have cosmetic effects. The recent increase in the use of herbs in cosmetics is mainly due to their mild and non-toxic properties. Herbal ingredients and natural food supplements are used in cosmetics. Natural products include oils, extracts, extracts, and more. Botanical ingredients include pure ingredients obtained through various processes^[2].

Acne: Acne is a common chronic skin disease involving blockage or inflammation of pilosebaceous unit.

Types of acne:

1. Whiteheads:

These are small or flesh-colored spots or bumps. On lighter skin, they usually have a white, circular center surrounded by a red halo. On darker skin, the surrounding area may appear dark or purple-hued. Whiteheads typically do not causes carrying^[3].

2. Blackheads:

Blackheads are small, dark-colored spots that may appear as slightly raised bumps. The skin around a blackhead usually appears normal, while the center of the blackhead is darker than the surrounding area ^[3].

3. Papules:

Coloration is not a result of trapped dirt. Blackheads are simply whiteheads that have opened and widened. When the contents of a whitehead are exposed to air, they darken. Papules are bumps under the skin's surface that are less than 1 centimeter (cm) in diameter. Papules themselves will appear solid, tender, and raised ^[3].

4. Pustules (pimples):

Pustules are larger, tender bumps with a defined circular center filled with whitish or yellowish pus. The area around a pustule appears red or pink on light skin and a deep brown or black on darker skin. The pus in the pustule is typically a combination of immune cells and bacterial cells collected in the blocked pore. Pustules typically look like much larger and more inflamed whiteheads ^[3].

5. Nodules:

Nodules are hard, inflamed lumps located deep within the skin. Like papules, nodules have no visible head. Nodules are a severe form of acne blemish and can cause skin complications such as dark spots or scarring. This type of acne lesion develops when clogged pores become infected, and swell beneath the skin surface ^[3].

6. Cyst:

Cysts are very large, painful, red or white lumps situated deep in the skin. Unlike nodules, these cysts fill with pus and are typically soft to the touch. Cysts are the most severe type of acne blemish ^[3].

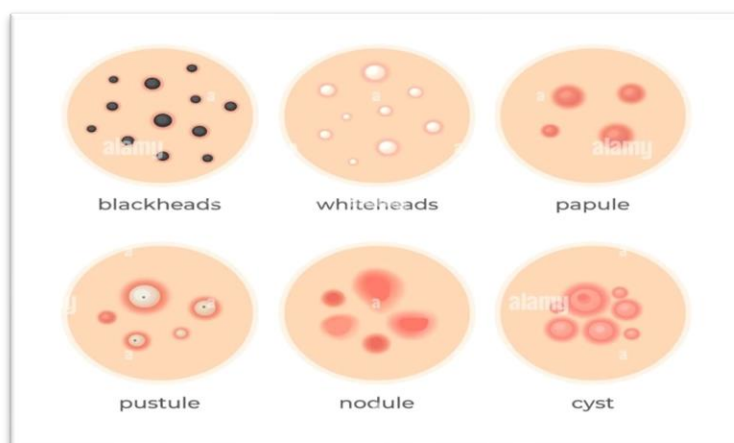


Fig 1.- Types of Acne ^[3]

Causes of Acne vulgaris:

Infectious contribution:

Staphylococcus aureus and Propionibacterium acnes have been recognized to Acne vulgaris. However, their exact contributions to the process of acne are not completely clear. So, there are many sub-strains of P. Acnes present in regular skin and some others in long-term acne problems. Therefore, it is unclear to understand whether these strains are contributing to this condition or they are pathogenically developed. The resistance of P. acnes to commonly used drugs is a growing factor ^[16]. The above present strains can change, perpetuate, or familiarize to the abnormal oil production, inflammation and insufficient sloughing of acne pores. Infection



with Demodex, which is a parasitic mite is linked with the formation of Acne vulgaris. Though, eradication of the mites has not improved or treat Acne vulgaris^[4].

Dietary Contribution:

The two factors that are diet and acne but the relationship between these two factors is unclear and there is no good quality evidence for dietary combination. However, a high level of glycemic diet is associated with the worsening of Acne vulgaris. A positive connection between the use of milk, chocolates or salt, and an increase in the severity of Acne vulgaris has also been recommended. However, the contribution of chocolates is uncertain, as they can be made with different quantities of sugar, with or without milk^[5].

Genetic contribution:

For specific subjects, the predisposition to Acne vulgaris might be clarified by a genetic component. This recommendation has been supported by some studies that have estimated the rate of acne among first degree relatives, along with twin studies^[6].

Hormonal changes:

Hormonal changes, such as puberty and menstrual cycles in the human body, seem to contribute to the development of Acne vulgaris. An increase form of some sex hormones, especially the hormone that are changed during puberty and pregnancy, cause the follicular glands to develop more sebum. The formation of Acne vulgaris in adult women might be due to a fundamental condition such as Cushing syndrome, polycystic ovary syndrome or hirsutism^[7].

Psychological contribution:

Some scientific and researchers have shown that acne severity is connected with an increase in stress level and stress has also been listed as the main factor attributed to acne flare^[8].

Face wash:

A face wash is a facial care product used to remove makeup, dead skin cells, oil, dirt, and other types of contaminants from the skin on your face. This helps open pores and prevent skin conditions such as acne. Cleansers can be used as part of skin care along with toners and moisturizers.

Advantages of face wash:

- Helps remove dead skin cells and replace old skin cells with new skin cells.
- Keeps skin fresh and healthy.
- Adds radiance to the skin.
- A mixture of dead skin cells and excess sebum can clog pores and lead to acne, pimples, and an utterly tired look. By exfoliating your pores regularly, you can avoid all the above skin problems.
- Removes dead skin cells and delays skin wrinkles^[2].

Properties of face wash:

- Peeling promotes blood circulation, promotes skin regeneration and rejuvenation.
- Facial pores and oily skin are caused by excessive sebum secretion from the sebaceous glands
- Must be stable and good looking
- Softens when applied to the skin.



- Should spread easily without pulling.
- Should not feel greasy or sticky when applied.
- The cream residue must not become viscous after the water evaporates.
- Its physical action is to cleanse the skin and open the pores, not absorption.
- A thin emollient film should remain on the skin after application ^[2]

Uses of face wash:

- Treatment of acne
- Removal of traces of daily make-up.
- Cleansing of the skin.
- Anti-Aging.
- Bath and Renewal for clean, glowing skin.
- Stimulates skin cell renewal and regeneration.
- Unclogs pores ^[2]

Types of face washes

1. Gel Facewash:

For those with sensitive, oily, or acne-prone skin, the clear gel face wash is a great option. Gel cleansers, which are intended for deep cleansing, glide onto the skin and work to remove excess sebum from pores while simultaneously nourishing and unclogging every part of your skin without being overly harsh. It's critical to search for a gentle gel face cleanser that leaves the skin feeling constantly moisturized and fresh, such as the vitamin C gel facewash ^[10].

2. Cream face wash:

A cream face wash usually contains moisturizing ingredients like milk or honey and has a thicker consistency. Cleansers that are lotion or cream-based are designed to deeply cleanse your skin while providing it with hydration. Their thicker and stronger consistency makes them ideal for all skin types, but especially for dry, mature skin in the winter. They can be used to remove makeup. If you prefer double cleansing, the cream face wash is an excellent option for your second cleansers ^[10]

3. Foam face wash:

Combination skin types benefit greatly from foam cleansers because they fall in between gel and cream cleansers. They could begin as a cream or gel and then quickly thicken into a rich foam. Gel facewashes are not as effective at removing extra oil as foam cleansers are. Your skin feels revitalized and incredibly light after using the foaming particles, which lift grime, dirt, and impurities. However, since foam cleansers tend to remove essential oils from the skin, be sure to moisturize your skin thoroughly after using one ^[10].

4. Micellar cleanser:

The lightest kind of cleanser is called micellar water, and it looks and feels like regular water. It is composed of tiny oil molecules that, rinse-free or not, lift makeup, oil, and dirt like a magnet. All skin types can benefit from the mild, gentle, yet effective formula of this cleanser. This multipurpose product effectively cleanses, tones, and removes makeup from your skin ^[10].



5. Clay face wash:

By extracting excess oil and toxins from your pores, clay face washes help to purify your skin and leave it feeling clean and glowing. Since clay face washes typically don't include any harsh ingredients or cleansing agents, they're ideal for oily and combination skin types but can also be used on sensitive skin types^[10]

6. Bar cleanser:

This is not your typical soap—it's the bar cleanser. It's a moisturizing, cleansing bar that works wonders at removing excess oil, debris, and makeup without using soap and is kind to skin. It is incredibly simple to use and carry, doesn't remove your skin's natural oils, and is beneficial for people with dry skin. Now that you know about the various kinds of face washes, explore a variety of Garnier skin care products to discover the ideal cleanser for effortlessly displaying your ideal skin.^[10]

A) Herbs Used in Face Wash:

1. Neem:



Fig 2: Neem

Synonym: Margosa, nimtree or Indian lilac

Biological source: Neem consists of the fresh or dried leaves and seed oil of *Azadirachta indica*

Family: Meliaceae

Chemical constituent: nimbolinin, nimbin, nimbidin, nimbidol, sodium nimbinate, gedunin salannin, and quercetin^[11]

Properties:

1. Neem is a natural healer, so it can soothe and calm irritated skin. Neem-containing face washes can help reduce redness and irritation while also leaving skin feeling peaceful.¹⁷
2. Neem-based face cleansers have a lot of antimicrobial qualities.
3. This not only clears up acne but also shields skin from aggressors outside that could harm it. In this approach, acne-causing bacteria are both treated and kept from growing^{[12][11]}.



2. Aloe vera:



Fig 3: Aloe vera

Synonym: Aloe barbadensis, Aloe humilis Blanco, Aloe indica Royle, nomen nudum, Aloe perfoliata var

Biological source: Aloe is the dried latex of leaves of various species of Aloes

Family: Liliaceae

Chemical constituent: Barbalin, isobarbolin, and saponins

Properties:

1. The anti-inflammatory properties of aloe vera help to reduce redness in acne, burns and even wounds. It also enhanced skin cell production and healing properties, speed up the wound and acne scar healing. In addition to that, it reduces blistering and itchiness.^[13]
2. Aloe vera has many skins benefits right forms making your skin glow to keeping it soft and supple. With so many of others benefits, it's time to include aloe vera face wash in your daily skincare regime. Here are some of the aloe vera face washes you might consider buying. Aloe vera is a magical plant that is used in such a large number of skin and hair care items. Apart from having medicinal properties, aloe vera is stacked with a lot of nourishing benefits as well.^[14]
3. Aloe has an antioxidant property that prevents skin cell damage. It has a moisturizing effect on dry skin and help reduce irritation of skin.^[11]

3. Lemon:



Fig 4: Lemon

Synonym: citrus, citrus fruit, citrous fruit

Biological source: Lemon is obtained from the fresh ripe fruit of Citrus limon.



Family: Rutaceae

Chemical constituent: citric acid, Ascorbic acid, minerals, flavonoids and essential oils

Properties:

1. As a rich source of vitamin C and citric acid, lemon is known for their detoxifying effects, especially when you add a few freshly cut wedges to your drinking water. Because of the health benefits of eating lemons, there is a growing popularity for using lemons as a natural treatment for skin conditions, like age spots and acne.
2. Some proponents of using lemon on the skin say that the citrus fruit is a natural method of increasing collagen in facial skin. Collagen is a protein that naturally breaks down with age, which can then result in fine lines and wrinkles.
3. As an antioxidant, vitamin C may help prevent free radicals that can damage collagen, leaving you with smoother skin.
4. Because of its acidic nature and anti-microbial properties, lemon is said to work wonders in fighting skin breakouts like acne, pimples and blackheads by cleaning dirt and oil from deep within. It further helps in tightening the skin pores to give you a smooth skin.^[11]

4. Turmeric:



Fig 5: Turmeric

Synonym: Haldi

Biological source: Turmeric is obtained from the dried rhizomes of the plant *Curcuma longa*

Family: Zingiberaceae

Chemical constituent: Curcuminoids; curcumin (diferuloylmethane, the primary constituent responsible for yellow color of turmeric), desmethoxycurcumin, and bisdemethoxycurcumin.^[15]

Properties:

1. In addition, volatile oils (tumerone, atlantone, and zingiberene) also have pharmacological activity. In addition, sugars, proteins, and resins are also present in turmeric.
2. Turmeric is an amazing ingredient for skin care. It can resolve a number of skin problems, including acne, skin darkening, skin pigmentation, rashes etc. It has been used since ages to boost the health and glow of the skin.
3. Turmeric works wonderfully for skin brightening and lightening. Plus, it contains an anti-oxidant compound known as curcumin, and curcumin comes with multiple skin benefits. It fights off acne, acne scars, and also reduce skin pigmentation.
4. *C. longa* possesses multiple pharmacological activities, including antioxidant, antimicrobial, anti-inflammatory, anti-carcinogenic, anticoagulant, antidiabetic and immunological.^[11]

5.Papaya:



Fig 6: Papaya

Synonym: papayotin, vegetable pepsin, tromasin, arbutin, caroid,

Biological source: Papain is the dried and purified latex of the green fruits and leaves of *Carica papaya* Linn.

Family: Caricaceae

Chemical constituent: Chymopapain and papain pectin, carposide, carpaine, carotenoids and antheraxanthin^[16]

Properties:

1. Because papaya, also known as *Carica papaya*, naturally includes the papain enzyme and beta carotene, it was chosen by AMG for its face cleanser. Both of these work well in removing dead skin cells from the skin by dissolving the protein.
2. Papaya contains the enzymes papain and chymopapain, which can reduce irritation and act as a great skin moisturizer and moisture retainer.
3. Papain, a protein-dissolving ingredient, is present in many of exfoliating goods. These products clear pores of dead skin cells that might cause acne by reducing acne.
4. Additionally, damaged keratin that can accumulate on the skin and cause tiny lumps can be removed by papain."
5. Papaya as an anti-ageing face mask as the alpha hydroxyl acids in it prevents signs of aging, such as wrinkles and fine lines. The vitamin E and C rejuvenates your skin. Mash half cup of over ripe papaya, to this add one tablespoon and milk and honey. Apply it on your face and neck^[11]

6.Mint:



Fig 7: Mint

Synonym: Pudina, Brandy Mint.



Biological source: It is the oil obtained by the distillation of *Mentha piperita*, belonging to family Labiatae.

Family: Lamiaceae

Chemical constituent: Menthol, Menthone and methyl acetate.

Properties:

1. This mint face wash helps in reducing the oiliness, refreshes, tones and cools the skin. Just take lemon juice, rose water, and soak the mint leaves into it.
2. Store the liquid in the refrigerator and then wash your face with it. You can also use honey instead of lemon juice if your skin is dry.
3. Apart from health benefits, there are a lot of beauty benefits of this herb too, it is therefore also, widely used for beauty care.
4. It has a stimulating effect on the skin and improve blood circulation to the skin surface. Mint also has antibacterial, anti-inflammatory, protective, and soothing properties.
5. It also contains salicylic acid which is also beneficial for preventing and treating pimples. That is why it also helps to control and prevent other skin eruption, like acne, boils, and heat rash.
6. Mint treats acne, strong antibacterial properties and vitamin A present in mint eliminate acne. It cleanses pores and tightens them, preventing blackheads, antioxidant in mint keeps the skin damage free by neutralizing free radicals, thus diminishing dark circles. Mint boosts the circulation of blood and hydrates your skin, thus delaying the formation of wrinkles.^[11]

7. Coriander:



Fig 8: Coriander

Synonym: Cilantro, Chinese parsley.

Biological source: Coriander consists of the dried leaves of the plant known as *Coriandrum sativum*

Family: Umbelliferae.

Chemical constituent: Inalool (72.7%) followed by λ -terpinene (8.8%), α -pinene (5.5%), camphor (3.7%), limonene (2.3%), geranyl acetate (1.9%) and p-cymene (1.5%).²⁴ The oil composition changes, depending on the maturity of the seed.^[17]

Properties:

1. Coriander is extremely rich in folate, antioxidants, vitamin C and beta-carotene. Your skin feels soft, supple and glowing when your cells are protected from oxidative stress. They can be armored against stress and degeneration with the help of antioxidants.
2. These antioxidants prevent the movement of free radicals in the body, thus slowing down the ageing process. It allows the skin to retain its elasticity. It is a powerhouse of iron which leads to an increase in the hemoglobin levels in the body and prevents anemia that can cause dull skin.



3. It is a well-known fact that your skin is a reflection of your internal health. Whether your skin is too oily or too dry or even a combination of the two, chewing fresh coriander leaves every morning on an empty stomach is a great healthy practice. Be it acne or pigmentation, oily or dry skin, pimples or blackheads, coriander juice works like magic.

4. Coriander's anti-fungal and anti-microbial elements are even known to treat eczema. It is a detoxifier, a disinfectant and even treats dark lips. Due to its antiseptic, antibacterial and anti-inflammatory properties, coriander helps to control and cure acne conditions. Coriander leaves and lemongrass may be used together to control acne.^[11]

8.Amla:



Fig 9: Amla

Synonym: emblic, emblic myrobalan, myrobalan, Indian gooseberry, Malacca tree.

Biological source: It consists of dried, as well as fresh fruits of the plant *Emblica officinalis* Gaerth.

Family: Euphorbiaceae.

Chemical constituent: Ellagic acid, Gallic acid, Emblicanin A & B, Phyllembein, Quercetin, and Ascorbic acid are among the organic chemical.

Properties:

1. Amla helps in controlling pimples and scarring associated with acne.
2. Amla oil is rich in vitamin C, which helps shield the skin from oxidative stress caused by free radicals. Amla works as a mild exfoliant when applied to the skin topically.
3. Amla juice cleanses the skin and diminishes skin pigmentation when applied or consumed. Amla's natural acids gently exfoliate the skin, removing dead cells and revealing smoother, more radiant skin.
4. Amla helps slow down the ageing process of the skin.

9. Bael Leaf:



Fig 10: Bael leaf

Synonym: *Aegle marmelos* L.

Biological source: It consists of dried leaves of plant of *Aegle marmelos* L.

Family: Rutaceae.

Chemical constituent: carotenoids, phenolics, alkaloids, pectin, tannins, coumarins, flavonoids, and terpenoids.

Properties:

1. Bael is extremely efficient against skin infections, treats various skin conditions, and promotes skin health because it has anti-bacterial characteristics.
2. It contains a variety of antioxidants, which play a crucial role in skin health by fighting free radicals and reducing oxidative stress.
3. Bael contains chemicals called tannins, flavonoids, and coumarins. These chemicals help to reduce swelling.

10. Harali:



Fig 11: Harali

Synonym: *Durva*

Biological source: *Durva* consists of dried whole plant of *Cynodon dactylon*

Family: Poaceae.

Chemical constituent: β - sitosterol, β - carotene, vitamin C, palmitic acid, triterpenoids, arundoin, friedelin, selenium, alkaloids-ergonovine and ergonovinine, Ferulic, syringic, p- coumaric, vanillic, p hydroxybenzoic and o-hydroxyphenyl acetic acids



Properties:

1. Durva grass acts as a natural blood purifier.
2. Durva has anti-inflammatory properties and can be used externally as a poultice or paste to reduce inflammation and soothe skin conditions, insect bites, and minor wounds.
3. It is used to treat various skin ailments like leprosy, scabies, itching, skin rashes and eczema.
4. A paste of the Durva grass mixed with turmeric and applied on the affected area is a remedy for a host of skin related disorders.

11.Tulsi:



Fig 12: Tulsi

Synonym: Sacred basil, Holy basil, Tulas

Biological source: Tulsi consists of Fresh & dried leaves of plant *Ocimum sanctum* Linn.

Family: Lamiaceae.

Chemical constituent: 70% Eugenol, 20% methyl – Eugenol, β - Caryophyllene, Carvacrol, Cineole, Linalool

Properties:

1. Cleanses pores deeply
2. Lead fighter of anti-acne club
3. Prevents early signs of ageing
4. Skin shines like a sunshine
5. A perfect moisturizer that skin truly needs
6. Prevents hair loss
7. Impressively disperse dandruff
8. Prohibits hair from becoming grey
9. Powerful immunity booster



12. Orange:



Fig 13: Orange

Synonym: Sweet orange

Biological source: Orange Peel is consisting of fresh and dried outer part of the pericarp of citrus aurantium Linn.

Family: Rutaceae

Chemical constituent: essential oils, flavonoid compounds, steroids, terpenoids, alkanes, and ethyl ester

Properties:

1. The presence of citric acid in oranges helps to dry out acne and control oil.
2. Rich in vitamin C, orange helps to control signs of ageing such as hyperpigmentation, fine lines, and wrinkles and helps to get firm, plump skin with ease by increasing collagen production.
3. One of the benefits of orange for the skin is its moisturizing properties that help in locking skin moisture and get plump, supple, glowing skin.
4. The benefits of orange for the skin include bringing a bright glow to your face.
5. Oranges help to lighten dark spots, acne scars, and uneven skin tone and leave your skin feeling clean, clear, and healthy.

B) Additives used in face wash:

• Antioxidants:

Antioxidants are chemicals, either man-made or natural, that may stop or postpone certain types of cell damage. Fruits and vegetables, among other foods, contain antioxidants. Moreover, they are offered as dietary supplements. Examples: - Lycopene, Vitamin A, Vitamin C, and Vitamin E. ^[18,19]

• Gelling Agent:

Gelling agents are substances that can transform an oil or water phase into a thicker yet flexible gel. Emulsions that have been thickened using gelling agents will be less rigid and more mobile. Several of these gels exhibit thixotropy, which causes them to thin when force is applied and return to viscosity when the force is removed. These gels enable the production of thick products that can be shaken or agitated vigorously for simpler bottling or spraying. Examples: - Carbopol 940, Carbopol 934. ^[18,20]

• Preservative:

Preservatives are primarily used to make food safer by reducing the impact of biological elements. The biggest risk to customers is food spoilage or becoming hazardous due to the presence of microorganisms (such as bacteria, yeast, or mould). Several of these

creatures have the ability to release poisons, which are harmful to human health and even lethal. Examples include propyl and methyl parabens. [18,21]

• **Humectants:**

The antitheses of desiccant, humectants are hygroscopic substances that are employed to maintain moisture in objects. It is frequently a molecule having many hydrophilic groups, most frequently hydroxyl groups, although it can also include amines, carboxyl groups, and sometimes esterified hydrophilic groups (its affinity to form hydrogen bonds with molecules of water is the crucial trait). They are an ingredient in a variety of goods, including as food, cosmetics, pharmaceuticals, and insecticides. The humectants bring water vapors into and/or beneath the surface of the organism or object by absorption, attracting and holding onto the moisture in the air nearby. Hexylene glycol, butylene glycol, and propylene glycol are among examples. [18,22]

• **Foaming Agent:**

A surfactant or blowing agent is an example of a substance that serves as a foaming agent. Little amounts of a surfactant can lower a liquid's surface tension (lessen the effort required to produce foam) or raise the colloidal stability of a substance by preventing bubbles from coalescing. A blowing agent is a gas that forms the gaseous element of the foam. Examples: - titanium hydride, azodicarbonamide, and sodium lauryl sulphate. [18,23]

Some Marketed Herbal Facewash:



Conclusion:

Herbal face washes are used to refresh the muscles, keep the skin elastic, get rid of stuck-on grime, and enhance blood flow. Herbal-based cosmetics have the advantage of being nontoxic. It nourishes the skin on the face. The face wash gives the skin the necessary nutrition. It aids in the removal of scars, marks, and pimples. Herbal face washes offer a natural and gentle alternative to traditional skincare products. With their blend of plant-based ingredients and essential oils, they can effectively cleanse the skin while providing




additional benefits such as anti-inflammatory and antioxidant properties. For those seeking an eco-friendlier and skin-friendly option, herbal face washes can be a great choice, though it's important to choose products suited to your specific skin type and needs.

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23. Compendium of Chemical Terminology



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