



## FORMULATION AND EVALUATION OF ANTI-ACNE FOAMING FACE WASH

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### ABSTRACT

Cosmetic designed for the skin care product can be used for the treatment of acne, exfoliation, and the deep pore cleansing agent, as accumulation leads to the formation of black and white heads, cysts etc. A foam cleansing composition is used to get better cleansing force as bubbles are actively generated without adding physical force. It brings less effort in your daily life. The natural ingredients are selected based on their chemical property, such as aloe vera, turmeric, neem oil, rosehip oil and glycerine. These mentioned plants have good anti-bacterial, anti-inflammatory, antioxidant, and anti-microbial properties according to the published reports. These ingredients are considering as the active ingredients which can make a good impact to get rid of the discussed problem in our face. The face wash was prepared remembering that it should be effectively appropriate upon application. It doesn't cause disturbance, scars, on the skin because of its transparent nature. Formulation is prepared by using the different concentration of the ingredients and evaluated. We found that our product is stable at room temperature and showing good spreadability and pH found to be 5-7 and I is showing good efficacy without causing any irritation or allergies.

**KEYWORDS:** Acne, Exfoliation, Face Wash, Dermis, Epidermis, Hypodermis.

### INTRODUCTION<sup>[1,5,3]</sup>

Face washes are meant for cleansing dirt prone skin, due to exposure of skin towards sun light, pollution and dirt which gets stored in skin and results in deteriorated skin which includes blackheads, whiteheads, pimples, acne, blemishes etc. Cleansing skin is an important component of maintaining healthy skin as it removes dirt, oil, makeup, and helps prepare the skin for topical application. However, it can also damage skin by stripping out natural moisturizing factors and degrading skin barrier function. Acne vulgaris can be defined as "a common skin condition that happens when hair follicles under the skin become clogged". Acne can be further described as a chronic inflammatory disorder of pilosebaceous unit, which involves increased sebum production by sebaceous glands and abnormal desquamation of hair follicles causes follicular distention which is often accompanied by the proliferation of the bacteria. Propionibacterium acnes leads to the activation of an inflammatory response.

### Face Wash<sup>[2]</sup>

A facial wash is a facial care product used to clean the skin on the face of make-up, dead skin cells, oil, grime, and other sorts of pollution. It aids in pore cleaning and the prevention of skin conditions like acne. Together

with a toner and moisturizer, a face wash can be used as part of a skincare routine.

### Advantages of Face wash

- Helps keep skin clear and healthy.
- It makes the skin radiant.
- The combination of dead skin cells and excess oil can clog pores, causing acne, white heads, black heads and a tired appearance. Regular pore exfoliation prevents all of the above skin problems.
- Promotes skin regeneration and rejuvenation.
- Removes dead skin cells, which means your skin wrinkles more slowly.

### Disadvantages of Face wash

- Facial wash only cleans the face, it is a safer body wash.
- Use face wash only twice a day. Using more than twice may cause dry skin.
- Removes dead skin cells, which means your skin wrinkles more slowly.
- The biggest drawback is its limited use.

### OBJECTIVES

1. An ideal foaming face wash is expected to fulfil to major requirement that is deep pore cleansing.

2. Foaming face wash helps in removing the dirt that has been accumulated in the deep pores of the skin resulting in the formation of the blackhead, whitehead, pimples, clogged pores, active acne etc.
3. Face wash helps in removing the dirt accumulated in skin.
4. It also helps in removing make-up.
5. Face wash helps in controlled release of sebum from the skin.
6. Face cleansers are required to remove dead skin.
7. It also helps in the reduction of blemishes.
8. Few facial cleansers also have the property of anti-aging.

#### MATERIAL AND METHODOLOGY<sup>[5,6]</sup>

PLANT MATERIALS: all the ingredients used in the preparation i.e. aloe vera, turmeric, neem oil and rosehip oil. We extract them from following processes

##### 1) EXTRACTION OF ALOE VERA JELLY (manual method)

- Take 2 medium slices of raw aloe vera leaves are taken.
- Scoop out the jelly.
- Gel is transferred into the mixer grinder.
- Filter out the juice to avoid large particles.

##### 2) EXTRACTION OF NEEM OIL (boiling method)

- 20 grams of dried neem leaves are taken and crushed in a mixer grinder.
- Powder is taken and 100ml of olive oil is added.
- Boil the mixture in a water bath for 30 minutes.
- Filter out solid residue by using cheese cloth.

##### 3) EXTRACTION OF ROSEHIP OIL (Supercritical Extraction)

- Weigh out 30 grams of ground rosehip seeds. Place a plug of wool into a 24 ml extraction vessel.
- Pour the prepared sample into the vessel using a funnel. Place a plug of wool on top.

- Compress the sample with a tamping rod. Fill the void volume and seal the vessel.
- Extract sample according to the specified extraction condition. Remove collection vial and dry residual moisture from oil to constant weight using a drying oven at 105°C.

##### 4) EXTRACTION OF TURMERIC

- Raw turmeric is taken, and skin is peeled out and grated by using stainless steel grater.
- 20gm of grated turmeric are taken developed into a mixture of 30 ml of water and 70ml of glycerin in a glass jar.
- Close the lid and keep it aside for 2 weeks.
- Filter out the solid residue by using cheese cloth.

CHEMICAL MATERIALS: Chemical material we are using in our formulation are Sodium lauryl ether sulphate, Glycerin, Sodium benzoate, Sorbic acid.

#### Method of Formulation<sup>[6]</sup>

The process of preparation of the formulation can be well illustrated by dividing the ingredients various stages as follows:

Stage A – consists of the base ingredients.

Stage B – consists of the main ingredients of the formulation.

Stage C- consists of excipients of the formulation.

Stage D – consists of the preservatives of the formulation.

- Phase A ingredients (base ingredient) are weighed and transferred into a small beaker.
- Then phase B ingredients (main ingredient) are weighed accurately as per the formulation table and heated on the water bath until uniformity is attained.
- Blend together phase A and B, stir gently to avoid foaming.
- Apparently weigh out phase C (sulphates) and add to the mixture.
- Further phase D (preservatives) are added to enhance the shelf life of the formulation.

#### Formulation

SL NO.	STAGE	INGREIDENTS	PERCENTAGE	WEIGHT
1	A	Glycerine	52.5%	35ml
2	A	Distilled Water	q.s	q.s
3	B	Aloe vera	45%	30gm
4	B	Turmeric	7.5%	5gm
5	B	Neem oil	6%	4ml
6	B	Rose hip oil	7.5%	5ml
7	C	Sodium lauryl ether sulphate	45%	30ml
8	D	Sodium benzoate	0.75%	0.5gm
9	D	Sorbic acid	0.37%	0.25gm

#### Evaluation Tests<sup>[4,6]</sup>

- 1) Physical evaluation: Physical characteristics like color, look, and uniformity were visually assessed.
- 2) Determination of pH: A calibrated digital pH meter was used to measure the pH of the formulation's 1% aqueous solution at a fixed temperature.
- 3) Grittiness: The product was checked for the presence of any gritty particles by applying it on the skin

4) Spreadability: On the wooden block a ground glass slide was mounted. On this ground slide, 2 gram of the prepared gel was put. Thereafter, a second glass slide with the same dimensions as the fixed ground slide was sandwiched between this slide and the gel preparation. The hook is provided on the second glass slide. For five minutes, a weight of 500 mg was placed on top of the two slides to remove air and produce a homogenous gel film between them.

A specified amount of weight was added to the pan, which was connected to the pulley. The top slide's time (in sec) needed to travel 5 cm was recorded. Spreadability was calculated by using the following formula,  $S=M \times L / T$  Where, S- Spreadability M- Weight tied to the upper slide (20gm). L- Length of the glass (6.5cm). T- Time in sec.

5) Washability: The product will be painted by hand and was observed under running water.

### TEST RESULT

Test	pH	Irritancy test	spreadability	Foamability	Washability	Colour	Odour	Consistency
Result	5.9	P	G	P	P	Yellowish green	Pleasant	Viscous

G: -good B: bad

P: pass

F: -fail



Foamability



Spreadability



pH

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