

# PH Balance & Estimation of Soap & Shampoos for Skin and Hair Care Used in COVID-19 Pandemic: A Review

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## Abstract:

**Introduction:** skin & hair cleansing is part of our daily routine of all in all stage of our life. the pH of our skin is slightly acidic, falling somewhere between 5-6 on the scale . Now a days, in large amount soaps and shampoos available in market .As per study, the pH (potential hydrogen )of skin is proportional to the used cleanser pH. That's why, increase in pH causes an increase in dehumidification .

Because of alcohol content and other harsh bacteria killing ingredients in sanitizers which are used in pandemic can cause skin sensitive which result in itching or a burning sensation on hands.

**Objective:** Mostly soaps & shampoos have pH range of 9-10 that comes certainly not ideal for sensitive or even normal skin. The purpose of this review is to assist or estimate the balancing of pH in soap and shampoo which were used in pandemic period.

**Conclusion:** When we use pH-balanced shampoo correctly, then our skin will be better able to maintain a normal, healthy pH range. Thats why, this review concludes with an information of different pH balanced soaps & shampoos present in market which gives healthy pH range.

**Keywords:-** pH balancing Soap,shampoo, Physiologic Skin pH,COVID-19 pandemic.

## I. INTRODUCTION

### A. Soap

In cosmetic soaps and shampoos are one of the best-selling types in the world since people in need of almost daily or day off today to wash their hairs. soap is a salt of a fatty acid used in a variety of cleansing and lubricating products.(1) soap is created by mixing fats and oils with a base, as opposed to detergent which is created by combining chemical compounds in a mixture .(2) soaps are surfactants usually used for washing, bathing and other types of housekeeping.

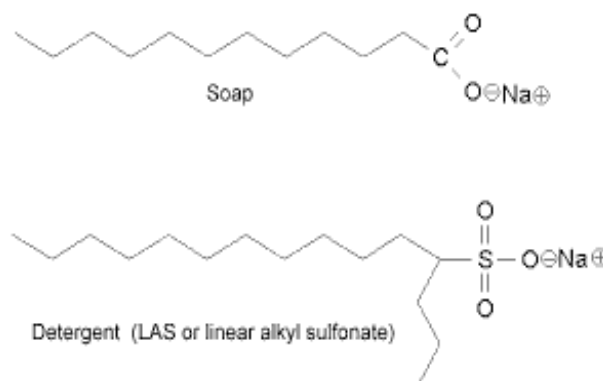


Fig. 1

The chemical structure of sodium lauryl sulphate ,a typical ingredient found in liquid soaps.

### B. Shampoo

Shampoo se simple term is a hair care product plant to clean and scalp skin along with its hair the word shampoo is came from the English language through India where the Hindi word Shampoo was used meaning to press or massage is it was used to denote cleaning of hair and skin shampoo hair care product is in the form of viscous liquid shampoo is used for hair cleaning purpose. shampoo is used by applying to wet hairs, massaging the product into the scalp, and then rinsing it out. Many more uses hair conditioners following the shampoo.(2)

To remove the unwanted buildup of sebum in the hair without stripping out so much as to make hair bulky is the reason behind every using shampoo.

Shampoo is a combination of surfactants & co-surfactant also, commonly sodium lauryl sulfate or sodium laureth sulphate, with a co-surfactant, most often cocamidopropyl betaine in water. To trap oil & grease easily from hairs ,the sulphate ingredient acts as a surfactant specially heavy duty.

**Shampoo Detergents:** There are five categories of shampoo detergents these are- 1.Anionis 2.Cationics, 3.Non-ionics, 4.Amphoteric and 5. different hair cleaning and conditioning qualities possesses by each one of them of this group. (2)

### C. PH adjusters:

3.67 is a normal range of hair fibers. A pH near to 3.67 having less possibility to increase the negative electric charge, involves the capillary fibers normally. direction to the treatment of the scalp shampoo is must not have a pH higher than in range of 5.5 eventually it is also a scalp pH.(3) hair shaft swelling can occur due to alkalization of hair shaft after use of most detergents it can be prevented by “pH balancing.” To adjust the pH addition of an acidic substances such as glycolic acid for citric acid in shampoo it down to approximately 5.5

Use of PH balanced or neutral pH shampoos for soaps& shampoos helps for the healthy skin and also helps for chemically treated hairs.

Human hair and scalp oil sebum and has a pH balance of between 4.5 and 5.5. To keeps the cuticle closed and healthy, this natural hair acidity prevents fungi and bacteria in the hair and scalp.

Now, when PH value decreases below 6.0, the hair cuticle contracts and tightens but a substance that is alkaline will cause the hair cuticle to open.

Little value of pH of shampoos may cause less freezing while a PH value drops above 7 or is the best for specific chemical treatment. if it becomes too alkaline for too long then you can cause severe irreversible damage to hair follicles.

A more alkaline state can also affect the bacteria and oil on the scalp & potentially cause dandruff.(4)

### D. pH-Balancin

ph “potential of hydrogen” or power of hydrogen is a scale used to specify the acidity or basicity of an aqueous solution.

As we know, there would have a big impact of the pH of soaps and shampoos as well on product performances as, human skin is so delicate. Potential of hydrogen (pH ) range of normal healthy skin is 5.4 -5.9 and a normal bacterial flora.

As, increase in pH is directly affects on the dehydrating effect on the skin also irritability and alteration in bacterial flora but unfortunately, products available in the market that don't print their pH.

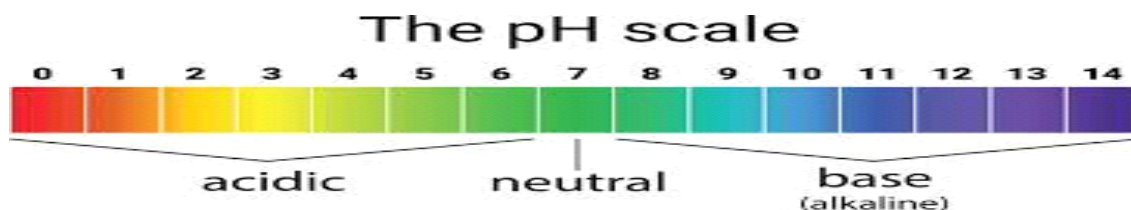


Fig. 2

The natural pH of our skin is 5.5 and our hair strands are naturally at 3.67 so both of them are on the acidic side (the way the skin keeps the bad stuff at bay is through a thin ),this protective layer is it has called the acid mantal.(5)

### E. Effect of “pH balancing” on skin-

The pH of skin is normally acidic, ranging in pH scale of 4-6. While, at PH value at 7 to 9 it maintains body's internal environment.

The body is composed of trillion of cells and the function of every cell is dependent on the pH of the skin and the body.

The pH is tightly regulated by a complex system that works to maintain an acidic skin pH and an alkaline pH for the body.

The body and skin’s pH management system regulates circulation, breathing, kidney function, liver function, digestion, hormone function, immune system function, and the skin hydration control and the barrier function.

Several key enzymes involved in the synthesis has been demonstrated most recently and maintaining of a competant skin barrier are largely impacted by pH.

Hence, an immense view of the pH importance in relation to function and principle of the skin is come out or arising.(6)

Skin surface pH is on average between 5.0 to 6.0 not only prior use of cosmetic products especially soaps I have profound influence on skin surface pH but the use of plane tap water, in Europe with the pH value generally around 8.0 will increase skin pH up to 6,after application before returning to its natural PH value of an average below 5.0.(4)

## II. CONCLUSION

The soaps and shampoos for hair care products which have become a part of day-to-day grooming of every individual.

This product is commonly used by the population at very large quantity having pH range of outside the range of normal skin and hair pH values therefore it is hoped before buying this cosmetics we have to look out on the products pH range.

Specially for those who have very sensitive and acne prone skin aur having itching or burning sensation on hands during used during pandemics so that these products will be more skin and hair friendly while this would also help in obtaining better compliance of that patients.

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