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## A Review on Cosmetic Product – Shampoo

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**Abstract** Hair is an important part of the body appeal and its look is a health indicator. Accordingly, recent advances in hair science and hair care technologies have been reported in literature claiming Innovations and strategies for hair treatments and cosmetic products. The treatment of hair and scalp, primarily, involved the use of shampoo for an effective, but gentle cleansing; however, for years, the shampoo is considered not only as a cosmetic product having the purifying purpose, but it is also responsible for maintaining the health and the beauty of hair, imparting gloss and improving manageability. For meeting the needs of a multitasking formulation, following also the recent marketing-trend addressed to the "natural world", new challenges for cosmetic technology are aimed towards the research of natural ingredients, as well as new techniques for shampoo formulation.

**Keywords** Hair, Cosmetic, Natural world, Formulation, Technology

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### Introduction

The product that helps cleansing of hair and scalp. These are mainly aqua-based consisting of cleansers and emulsifiers. It's essential task include elimination of excess sebum from hair follicles and free scalp from other hair product residues. Shampoo is generally used as a beautifying agent.

Depending on the substances used, when a cosmetic product is under development, profuse amount of criteria are taken into consideration, namely, area of application, sensitivity towards the product, matter state, additives, and storage requirements.

These products must then be evaluated for their performance under different conditions, quality and effects.



Figure 1: Shampoo



### Properties of Shampoo

- Shampoo should have the proper potential to eliminate dirt and dust particles , excess sebum on the scalp and other hair product residues.
- Shampoos should have convincingly adequate foaming capabilities.
- It should be relatively easier to rinse it off using water.
- Should not be sensitive to the hands.
- Should beautify the hair and provide necessary hair care assistance.
- It should not make hand rough and chapped.
- It should be effective in small quantities.
- It should be stable at room temperature.

### Types of Shampoo

- 1) Liquid Shampoo
- 2) Aerosol Shampoo
- 3) Anti- dandruff Shampoo
- 4) Jelly Shampoo
- 5) Conditioning Shampoo
- 6) Lotion Shampoo
- 7) Powdered Shampoo
- 8) Baby shampoo
- 9) Cream Shampoo
- 10) Specialized Shampoo

### Action of Shampoo

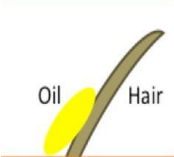
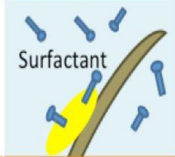
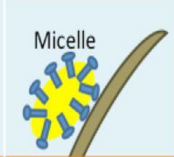

Before	Shampooing	Mode of Action	Rinse
			
Skin	Skin	Skin	Skin
Oil and dirt are attached to the skin and hair	The surfactant lowers the surface tension of the water	The surfactant creates micelles around the dirt and oil that are removed from the skin and hair	The micelles with the oil, dirt and surfactant are eliminated with the water during rinse

Figure 2: Action of shampoo

### Advantage of shampoo

- The shampoo foam is pleasing.
- Keeps dirt, dust, oil and pollutants away.
- Shampoo is easy to rinse.
- There is minimum skin and eye irritation.



- It gives a thick and creamy feeling.
- Pleasant fragrance is imparted.
- It is less toxic.
- It is biodegradable.
- It is slightly acidic
- Causes less damage to hair.
- Repairs damaged hair.

#### **Disadvantage of shampoo**

- Excess use of shampoo leads to hair damage.
- Some specific shampoo are costly.
- Hard shampoo can block the pores of scalp.
- Sodium lauryl sulfate is commonly used in shampoos which may harm eyes and skin and may even be carcinogenic.
- Continuous exposure to this can cause headache and vertigo and soreness in the eyes, nose, throat and lungs.
- The nitrogen based SLES can be carcinogenic and can lead to irritability, skin rash and other allergic symptoms.
- The use of SLES decreases new hair growth and extends hair loss period.

The aim of shampoo is to cleanse the scalp and hair of dirt, oil, and product buildup, while also promoting healthy hair growth and maintaining a balanced pH level. Shampoo achieves this by using a combination of surfactants, which are cleansing agents that remove dirt and oil, and conditioning agents, which help to smooth and protect the hair.

The objectives are to:

- **Cleansing:** To remove dirt, oil, and product buildup from the scalp and hair.
- **Moisturizing:** To hydrate the hair and scalp, and prevent dryness and breakage.
- **Strengthening:** To improve the strength and elasticity of the hair, reducing the risk of damage and breakage.
- **Soothing:** To calm and soothe an irritated scalp, and reduce inflammation.
- **Volumizing:** To add volume and thickness to fine or limp hair.
- **Color protection:** To protect and preserve the color of dyed or treated hair

Shampoo formulations can vary widely depending on the intended purpose, target market and desired properties however, some common ingredients found in most shampoos include: surfactants, conditioning agents, thickeners, preservatives, perfume, pH adjusters, colors etc.

#### **General Ingredients of Shampoo**

- Sodium lauryl Sulphate
- Coconut monoethanolamide
- Water
- perfume
- Colour

#### **Evaluation of shampoo**

1. Foam and foam stability:



- The Ross-Miles foam column test is accepted. 200 ml of surfactant solution is dropped into a glass column containing 50ml of the same solution. The height of the foam generated is measured immediately and again after a specified time interval, and is considered proportion to the volume.
  - Barnett and Powers developed a latherometer to measure the effect of variables such as water hardness, type of soil and quantity of soil on foam speed, volume and stability.
  - Fredell and Read titrated actual standard oiled heads of hair with additive increments of shampoo until a persistent lather end point appeared.
2. Detergency and cleaning action:
- Cleansing power is evaluated by the method of Barnett and Powers.
  - 5gm sample of soiled human hair is placed at 35°C in 200 cc of water containing of 1 gm of shampoo. The flask is shaken 50 times a minute for 4 minutes. Then washed once again with sufficient amount of water, then after filter the hair dried and weighed.
  - The amount of soil is removed under these condition is calculated.
3. Wetting Action:
- Canvas disk sinking test: A mount veron cotton duck # 6 canvas disk inch in diameter, is floated on the surface of a solution, and the time required for it to sink is measured accurately.
4. Rinsing:
- Skilled beauticians are employed to make comparisons on the performance of several shampoos.
5. Conditioning Action:
- Conditioning action is a difficult property to assess. This is because it is basically dependent on subjective appraisal.
  - No method has been published for measuring conditioning action.
  - The degree of conditioning given to hair is ultimately judged by shampoo user who is making the evaluation on the basis of past experience and present expectations

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