

Shaving cream

SHAVING PREPARATIONS

1. Wet Shaving Preparations

- Shaving soaps: solids and creams
- Brushless shaving creams
- Aerosol preparations

2. Dry Shaving preparations

- Preparations used for electric shaving
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WET SHAVING PREPARATIONS :

The most significant function of shaving preparations is **softening the hair** to facilitate cutting.

The hallmarks of a good wet shaving preparation are

Two fold :

- To **soften** the hair (by hydration)
- To act as a **lubricant** between the shaving hardware and the face

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Lather shave products

The physical presentation of a foaming shave product makes it ideal to supply **moisture** to the beard. The foam also serves as a “**marker**” on the face

Role of soap lather in shaving :

- Hastened the process of hair softening by water
- Do lubrication between the blade and the fiber that is about to be cut
- Water reservoir for imbibitions of water by the hair
- Abundant lather that does not dry on face
- Not too cream per shave
- Rapid and clean rinsing
- Soft free from lumps
- Compatible with razor blade and container

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Lather shaving creams :

***Based on Na +/K + /TEA + soap systems in a range of (10%-55%), Dispersions of soaps in glycerin and water.**

***Blends of fatty acid are employed , stearic acid alone appear to yield harder and inferior foams.**

***Stearic acid with isostearic acid , palmitic acid , lauric acid ...etc “ the shorter the chain length the softer the resultant cream” can be used in varying ratios so that a wide range of textures can be obtained , but as a starting point (60%-90%) of the total fatty acid should be stearic acid .**

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1. The selection of the alkali is of major significance to the final product texture and foaming properties.

2. Not a single agent but a mixture of NaOH, KOH, and perhaps TEA.

3. Soaps made solely with NaOH tend to be hard, KOH alone may lead to stability issues at elevated temp.

4. TEA milder and softer but **don't provide adequate foaming properties** and **tend to discolor on aging.**

5. So a blend of KOH:NaOH:TEA in a ratio from 4:1:0.5 to 6:1:0 may provide a good starting point

OTHER INGREDIENTS:

1. Xanthan and cationic gar gums prevent phase separation and lower the coefficient **between the razor and the beard or skin.**

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2. Humectants (glycerin, propylene glycol) prevent drying out of the cream and makes the cream softer.

3. Emollients (mineral oil, lanolin, lanolin derivatives) lubricate the skin surface and thus lower the coefficient of friction **between razor and skin.**

4. Surfactants has been incorporated to aid in the rinsability of the shaving debris from the shaving hardware, to enhance the foaming properties, and to stabilize the foam.

5. Superfattening agents neutralize excess alkali pockets formed during saponification process
e.g: lanolin, mineral oil.

LATHER SHAVING STICKS :

These systems are essentially modifications of a standard deodorant stick formulations alkali metal soap with a glycerol and water.

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In this case, however, the level of soap is higher (70%-85%) with the reminder being approximately equal parts glycerin and water.

Other ingredients such as perfume, surfactants, and talc can be milled into the formulation prior to molding. These forms offered little more than novelty but currently do not enjoy market success.

BRUSHLESS SHAVE CREAMS

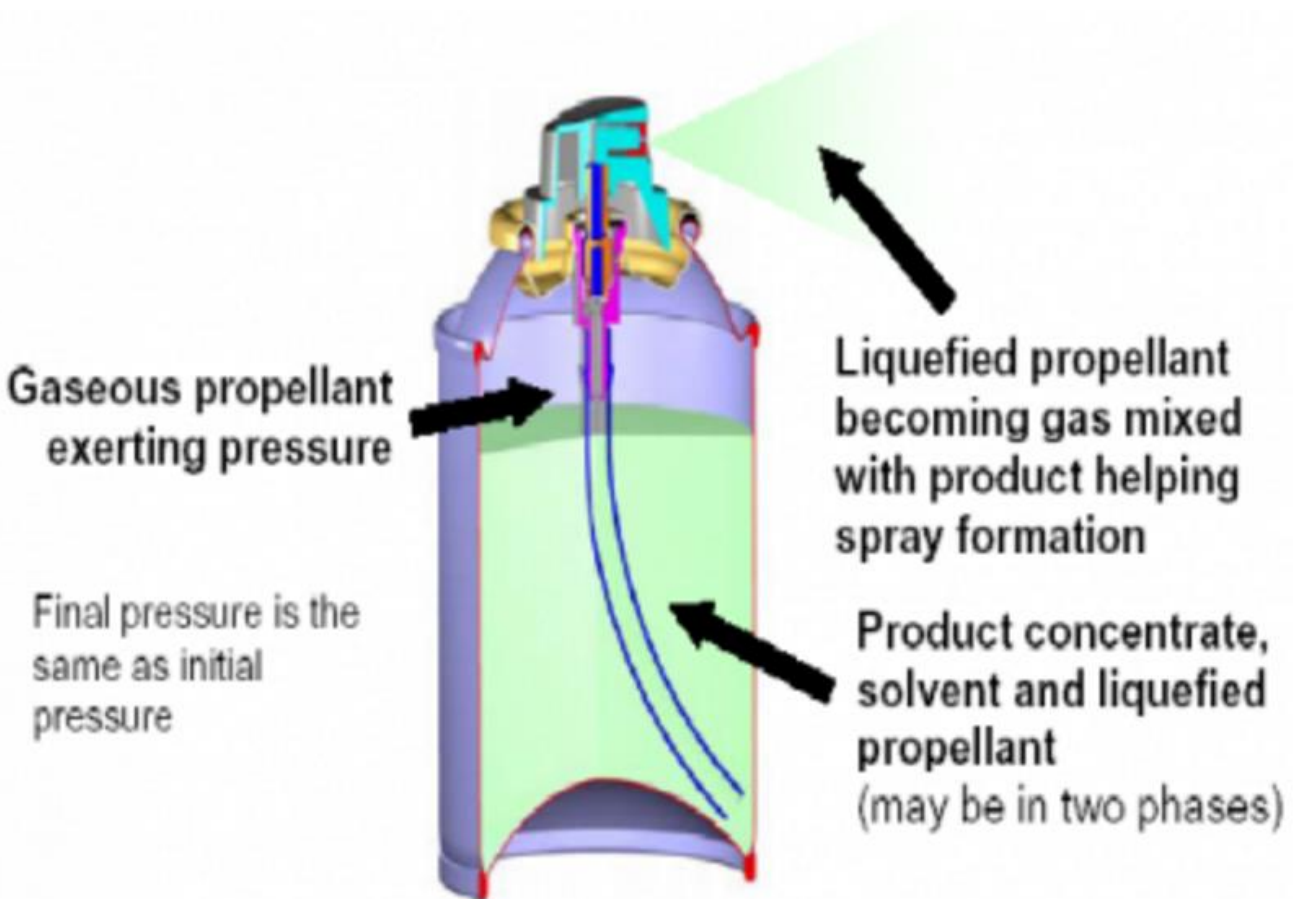
ADVANTAGE

1. A non-lathering o/w emulsions, require no brush for shaving.
2. Takes less room in travelling kit and spreads more rapidly.
3. pH (7.5-8) might be milder than lathering creams.
4. Beard-softening efficiency is greater compared to foams and gels and less pulling of tough beards.

DISADVANTAGE

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1. **POOR RINSABILITY** OF THE SHAVING DEBRIS FROM THE SHAVING HARDWARE
2. **DISAPPEARED** FROM THE MARKET
3. MORE AMOUNT OF CREAM PER SHAVE
4. LEAVE THE SKIN **GREASY** DUE TO HIGHER COMPONENTS OF FATTY SUBSTANCES



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AEROSOL SHAVE FOAMS

Dominate the market because of **their economy**, **ease of use**, and ability to **efficiently soften** the beard and to act as a **lubricant** between the shaving hardware and the skin.

•General formulating tips

1.Pressurized **o/w emulsions**.

2.Contain stearic acid in combination with shorter chains fatty acid to modify foam texture and dispensing qualities.

3.**Isostearic acid** can be incorporated to prevent gelation.

4.TEA and KOH are used as bases alone or in combination BUT **NaOH should be avoided**; Na-stearate has a tendency to gel.

5.If the foam is stiff, dry and difficult to dispense more base or shorter chain fatty acids are added or the amount of humectant can be increased.

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OTHER INGREDIENTS:

Surfactants: nonionic and anionic (high HLB nonionic emulsifier and SLS) are included to stabilize the emulsion, aid in the rinsability, improve the spreadability, and stabilize the foam.

Humectants: (glycerin, sorbitol, and propylene glycol) to prevent the foam from dry-out during the shaving process.

Conditioning agents and lubricants: (quaternary ammonium compounds and cationic guar gums) leave the post-shaven skin feeling conditioned, not taut, and create creamy luxurious foams.

Propellants: (a blend of n-butane, isobutane, and propane) the higher the percent propellant, the drier the foam, more difficult to spread and wet the beard poorly.

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Fragrance: as they are notorious defoamers , there may be upper limit on their use.

solubilizer may be required to serve multiple roles:

- solubilizing the fragrance
- wet the beard
- improving the **spreadability** of the foam
- aiding in the clean up process of the shaving hardware.

An antioxidant can be added to protect the fragrance and any unsaturates in the formulation from oxidation.

Preservatives: Many shave foams do not contain preservatives, (phenoxyethanol, EDTA, triclosan) may be added if the concentrate will be held before filling or if the concentrate must be shipped to an alternate site for filling.

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DRY SHAVING PREPARATIONS :

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1. Electric shavers do not cut the beard as close to the skin surface as a razor . Both electric and blade shaving result in the removal of skin, **and the amount removed depends on the pressure applied to the face,**
2. pre-electric shave preparations may not increase the quality of shave but may assist in reducing skin damage
3. The beard should be dry when using an electric razor
4. The removal of the film of perspiration from the face reduces the friction between the razor and the skin and prevents the beard from being slippery and elusive to cutting edge of the electric razor.

FORMS OF PRE-ELECTRIC SHAVE

preparations are :

1. lotion based on an alcoholic solution
2. talc stick

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PREELECTRIC SHAVE LOTION

In formulating a preelectric shave lotion the following attributes are considered desirable:

- Adequate astringency to stiffen the beard and to stimulate the hair follicle muscles
 - Quick drying to allow rapid evaporation of any moisture present on the face
 - **A pH below the iso-electric point of keratin** to prevent swelling of the hair
 - Provision of a **coating on the skin** on which the razor will glide, preventing irritation of the skin and providing lubrication for the cutting edge of the electric razor
 - Freedom from any substances likely to corrode the cutting head
- +Absence of any lubricants likely to have an adverse effect on plastic components of the electric shaver.

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+The **alcoholic preelectric shave lotions** may be either astringent or oily

+The astringents **are intended to dry and stiffen the hairs and to assist in raising them**, menthol or camphor may be included to give a cooling effect together with a suitable antiseptic.

+**Lotions of the oily type** aim to deposit a film of lubricant on the face which reduces the drag of the cutting head against the skin

+A roll-on type of applicator may be used to apply preelectric shave lotions directly to the face, **it may be necessary to adjust the viscosity and wetting properties of lotion** to prevent seepage around the ball when the applicator is inverted.

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PRE-ELECTRIC SHAVE TALC STICK OR POWDER

Talc is used to absorb perspiration and sebaceous

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secretions from the skin and to **confer its characteristic** slip so that the head of the shaver will glide smoothly over the face.

+**Colloidal kaolin** is present in the preparation to improve the moisture absorbing capacity and adhesion to the skin.

+**Zn and Mg stearate** enhance adhesion and slip.

+**Mg carbonate** is the carrier of perfume and increases the absorption.

+**Powders** should be free from grit to avoid abrading the cutting edge of the electric razor (grinding powder).

+The **binding agent** is usually an aqueous dispersion of veegum.

After-shave preparations

Are intended to alleviate the trauma of shaving because of irritation and from the irritating effects of the shaving preparations themselves.

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+ The forms range from simple after-shaves (hydro-alcoholic solutions of fragrance), after-shave gels (hydro-alcoholic gels), or after-shave balms (o/w emulsions) with or without alcohol.

+They calm the skin by providing either a cooling, anesthetic, or astringent effect or any combination of these.

MAJOR OBJECTIVES OF IDEAL AFTER SHAVE PRODUCT

1. **Reduction of skin irritation** due to minor cuts
2. **Offset chemical effects** of after shave lotions
3. **Provide mild astringency**
4. **Antiseptic**
5. **Pleasant and long lasting**

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AFTER-SHAVE LOTIONS

+They typically **contain 50% to a maximum 75% alcohol**, the reminder being water, fragrance, coolants, etc.

+The % of volatile organic cmpds. Depends on the fragrance%,the more the fragrance the less the VOC.

+High HLB nonionic surfactants may be used as fragrance solubilizer to yield a clear system

+The soothing effect can be attributed to the evaporation of alcohol.

+Other ingredients can be added to enhance efficacy; **allantoin (promote healing)**, **bisabolol (antiinflammatory)**, **witch hazel extract (astringent)**, **menthol (cooling effect)**.

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AFTER-SHAVE GELS

+Carbomers and some cellulose derivatives can tolerate varying amounts of alcohol and thus are good choices to include in the after shaves previously described to create an after-shave gel.

+**Zinc or aluminum salts** and witch hazel extract are used as astringents.

AFTER-SHAVE BALMS

o/w emulsions to permit adequate massaging into the freshly shaven face.

+May or may not contain alcohol.

+Give a wet cooling feeling on the face by :

+The phase volume ratio should be heavily skewed toward the water phase 86:14 to 90:10..

+**Addition of alcohol, it may destabilize** the emulsion and sting with even the slightest of razor

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cuts; so a level of (5%-15%) alcohol represent a good balance between the desired attributes and adequate stability

+Quaternary ammonium compounds. (conditioned feeling) ,allantoin(healing agent) ,xanthan or guar gums (stabilize water phase and add slip to formula)

AFTER-SHAVE POWDERS

+These systems are talc, kaolin, ZnO, TiO₂ and magnesium carbonate

+ The benefit of after-shave talcs is the reduction of the shine associated with the use of brushless shave creams.