

Why does chemical hair removal(depilatories) irritate the skin?

One day in the past, my friend told me that he will no long use chemical depilatories as it irritates his skin, that word encourages me to share with you the reason why that cosmetic product may damage your skin while you are using it and the way to minimize such risk.

Frankly, Chemical depilatories are similar to shaving in that the hair is removed at the skin surface, except that shaving removes the hair physically and depilatories remove the hair chemically. Depilatories function by softening the hair shaft above the skin surface so it can be gently wiped away with a soft cloth. Presently marketed chemical depilatories are available in pastes, powders, creams and lotions with formulations specially adapted for use on the legs, groin area, and face. the depilatories act by degrading the hair keratin. As it is known that keratin is sensitive to the action of strongly alkaline aqueous solutions and reducing agents, most of the depilatories consist of such agents. The alkaline reducing agents cause the swelling of the hair fibres and break the cystine bridges between adjacent polypeptide chains as a first step to the complete degradation of the hair. As stratum corneum also contains keratin, depilatories may cause local damage of the skin by also affecting skin keratin when applied for hair removal. This effect can be avoided or minimized by using the preparation that it can preferentially and rapidly reacts with hair for selective degradation of hair keratin without damaging the skin.

How depilatories works

All formulations function by softening the cysteine rich hair disulfide bonds to the point of dissolution. This is accomplished by combining five different classes of ingredients. The agents combined to produce a chemical depilatory are detergents, hair shaft swelling agents, adhesives, pH adjusters and bond-breaking agents.¹¹ Together they function to prepare the hair for removal. Detergents such as sodium lauryl sulfate, laureth-23, or laureth-4 remove protective hair sebum and allow penetration of the bond breaking agent. Further penetration is accomplished with swelling agents such as urea or thiourea. Adhesives such as paraffin allow the mixture to adhere to the hairs while adjustment of pH to 9.0–12.5 minimizes cutaneous irritation. Lastly, the bond-breaking agent is able to successfully destroy the hair.

Characteristics of Good Chemical Hair Removal (Depilatories)

Chemical hair removal known as Depilatories are chemical substance used by both men and women to remove unwanted hair includes armpits, arms, Legs, and if necessary, the face for various reason. These products should be properly formulated with correct choice of agents and concentration so that it can be applied and achieve the desired work within a short period of time without damaging the skin. Therefore, the ideal depilatories preparation should be:

- Non-toxic and non-allergic to the skin
- Selective in action
- Easy to apply
- Efficient and rapid action in few minutes
- Odorless
- Stable
- Non-staining to clothing
- Relatively pain free.

Lastly it should have a relative pH as it can have a big impact on how the product affects the skin.

References

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