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# Shame on Shampoo

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## Shampoos need to come clean on their ingredients!

Shampoos are generally composed of a mixture of about 50% sodium lauryl sulfate, some sodium stearate and about 40% water. Most liquid type shampoos may contain the following tongue twisting names for detergents - Triethanolamine dodecylbenzene sulfonate, Ethanolamide of lauric acid, along with perfumes, dyes, a host of other multisyllable names to create the desired consistency and performance.

Shampoos are among the most frequently cited in complaints to the FDA. Reports include eye irritation, scalp irritation, tangled hair, swelling of hands, face and arms, and split and fuzzy hair. (A Consumer's Dictionary of Cosmetic Ingredients, Ruth Winters, MS. Crown Trade Paperbacks, 1994)

### What else is in your shampoo?

One of the big culprits in shampoo seems to be the Sodium Lauryl Sulfate (SLS). SLS is a surfactant, or wetting agent which means its purpose in the formula is to lower the surface tension in water thus allowing the shampoo to spread out and penetrate more easily.

According to one study, to determine the effect of SLS in the eye, it was found that SLS is rapidly taken up and accumulated by eye tissues and retained for up to five days. SLS uptake is greater in younger eyes decreasing with increasing age. It was also found to cause changes in some proteins of eye tissues and can extend the healing time in injured eyes.

Another study as cited by the Wall Street Journal, 11, 1, 88 linked SLS to cataracts and Nitrate absorption. The nitrate absorption occurs when the SLS becomes contaminated with NDELA (N-nitrosodiethanolamine) during processing. This contamination comes about as a result of SLS coming into contact with any

number of chemicals including Triethanolamine (TEA), which as you will recall is a commonly used ingredient in shampoos as a detergent. Put simply: SLS + TEA = NDELA (a nitrosamine and a recognized carcinogen).

### It doesn't stop there..

In September of 1992 John Bailey, director of FDA's Division of Colours and Cosmetics, while addressing the Dermal Clinical Evaluation Society reported the discovery of another reactant chemical contaminant that seemed to be showing up in cosmetics specifically in shampoos and bubble baths. Excessively high levels of 1, 4 dioxane, a substance found to cause liver cancer in lab animal studies conducted by the National Cancer Institute in the 1970's, seem to be occurring in products that use non-ionic ethoxylated surfactants in emulsion products such as conditioners. It was also noted that shampoos for children use higher levels of ethylene oxide to decrease the irritancy factor. In fact the higher degree of ethoxylation the more likely the occurrence of 1,4 dioxane.

1,4 dioxane has been determined to be an animal carcinogen and may be a human health risk. Most common human exposure to this compound occurs in shampoos formulated with sodium or ammonium laureth sulfates or other ethoxylated surfactants. (DC) November 1992)

I recall a chemist at a convention saying that they learn in their first year of chemistry that SLS denatures protein. I can only wonder at this since SLS is used so widely in our skin and hair products. Did they also teach first year chemists that skin and hair is made up of protein?

And last, but far from being least, SLS is a mutagen! This means that it is capable of actually changing the information in genetic material found in cells.

## Shampoo Linked to Sperm

### Canadian Press

OTTAWA - Researchers are pointing to shampoo as a possible factor in the apparent decline of sperm quality in many countries.

The theory is getting international attention and even sceptics agree it should be investigated.

Scandinavian researchers say chemicals known as alkyl-phenol ethoxylates, used in shampoos and other products, can act like the female sex-hormone estrogen.

Boys exposed to such chemicals before puberty could suffer disruption of their hormonal processes, said Jorma Toppari of the University of Turku in Finland.

"We know that these compounds are hormonally active, and we know that you can influence sperm counts by exposing a child or fetus to hormones that act like these compounds," he told a conference on Great Lakes water quality in Duluth, Minn.

Studies show sperm counts in several countries have declined suspicion over alkyl-phenol ethoxylates is new.

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