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LEAD, ALUMINUM AND PARABENS: MYTHS IN COSMETICS

There seem to be plenty of myths surrounding cosmetic products and their ingredients. The first of these is that a manufacturer would deliberately use an ingredient that might lead to harm. Apart from being illegal, it is not good for business to injure consumers, and successful companies understand the needs of their consumers. This column will look at some of the stories that are propagated online, and try to separate fact from fiction, as there is an element of both in all good myths.

Lead and Lipstick

The first is that perennial favorite—lead in lipstick. It has reappeared several times in different guises, and has even been prompted by well-meaning analysis of products by reputable agencies. Delving first into the facts, lead is harmful, but anything can be harmful if consumed excessively. There is no known biological use for lead in humans, so it is best avoided. But can lead be avoided? Not completely, is the honest answer. Recognizing that lead is harmful and not useful, lead has been removed from petrol (gasoline), (most) paints, the solder used to seal cans for food, and household water pipes. However, lead is present naturally in the environment, where it is absorbed by plants from the soil, and is unavoidable in root vegetables. Furthermore, because lead is ubiquitous, it is also found at trace levels in some substances used to make products such as lipstick. It is not added deliberately, but it cannot be completely avoided. The question is whether the amount of lead in lipstick might be harmful to consumers, and the answer is a clear no. In fact, Health Canada has said that people get more lead from safe drinking water than the tiny traces present in lipstick. [1]

This lead in lipstick myth is naturally related to two more myths—that women consume a given quantity (the exact amount varies with the different stories) of

lipstick in a lifetime, and that an individual can tell if a lipstick contains lead by rubbing it on a gold ring. Think of how many lipsticks a woman purchases per year, how much is left unused or discarded, and how much is left on tissues, drink ware and even the faces of friends and family. One soon realizes that the estimated tubes of lipstick that a woman consumes is, at best, an exaggerated guess. [2]

As for the gold ring test, it is sheer nonsense. It takes the finest of analytical chemists using the latest sophisticated equipment to measure tiny traces of lead.

The cosmetic industry, however, should not be complacent. There are, unfortunately, some instances of illegal cosmetic products being discovered on the market that are extremely high in lead, since in these cases, lead is one of the main deliberate ingredients. The fact that such concoctions have been used in some communities as traditional decorative products for generations does not lessen the risk to those using them. These are illegal cosmetics and should be dealt with accordingly.

Parabens

Another myth surrounds the safety of parabens. There have been reports that these preservatives are linked to breast cancer through an ability to mimic the female hormone estrogen. Here, the facts are clear. Parabens are used as preservatives to ensure that cosmetics remain wholesome and safe throughout their use and do not have to be discarded quickly. Parabens are found in nature; many fruits contain parabens made by the plant itself to prevent the fruit from molding. Some parabens are able to mimic a portion of the properties of estrogen, but not all of them. That mimicry is only seen under experimental conditions with very high exposure or doses, and such conditions do not relate to everyday life. Indeed, it is perfectly impossible for a human being to be exposed to sufficient parabens from cosmetic products to ever produce any disruption of the hormone system—and even parabens found to mimic some properties of estrogen are poor copies. Of course, many remember the study that claimed to have found parabens in breast cancer tissues, but this study was poorly conducted and has been strongly criticized by scientists.

Parabens from an unidentified source had contaminated many of the samples, including the “blank controls,” which should not have any parabens present. [3]

Aluminum in Antiperspirants

More recently, the cosmetic industry has seen concerns raised about the safety of aluminum in antiperspirants. Aluminum is the most abundant metal on earth, and is the third most abundant element. If it were particularly toxic, life itself could not exist in its presence. In fact, aluminum has no known biological function in humans, and what humans absorb is readily removed via the kidneys.

It can cause harm when present in excess, which happens when kidneys malfunction and when exposure is excessive with aluminum-based antacids or during work in the aluminum industry. Any contribution from antiperspirant use is small, particularly considering that aluminum compounds remain on the surface of the skin to function by forming a gel to plug the sweat ducts. If the aluminum was absorbed into the skin, the product would no longer work. [4]

Conclusion. There are plenty more myths that have come and gone, but they all have certain things in common: information is either exaggerated or not placed into context, and incomplete information causes consumers to question where, in fact, no problem exists. In all of these discussions, please remember that reputable cosmetics companies not only comply with strict legislation but want to build a long-lasting relationship with their consumers, to have those consumers stay loyal to the brand, and to make repeated purchases. This will not happen if the company fails to provide satisfaction in terms of safety, efficacy and quality. [5]

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ANALYSIS OF PHYSICAL AND CHEMICAL PROPERTIES OF NEW CARBON SOOTS

Objectives. To obtain skills in the investigation of the main characteristics of carbon materials, and compare them with the commercial analogue «Pure Black».

Methods and means of research. Optical microscopy, pH-metry, determination of the factor of structure formation, electrical resistance, method of determining the angle of wettability, the method using a four-electrode cell.

Research results. When composite materials are manufactured as a conductive or reinforcing component, soot is widely used. Properties of soot depend on the type of initial organic material, the method of its thermal decomposition, the method of precipitation of the formed carbon suspension. The main characteristics of the resulting soot are the degree of graphitization, the dispersion of particles, the