

Contemporary Issues in the Fashion Industry: BUF 4700

Critical Paper #2

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For A Better Tomorrow

Science has had a significant impact on the beauty industry throughout history. Many say that the beauty industry would not be as vast and vital without scientific advancements and innovation. The creation of biocosmetics is a scientific advancement that has taken over the industry, but what exactly are biocosmetics? Biocosmetics are cosmetic products produced entirely of natural substances originating from plants, animals, microorganisms, enzymes, insects, and organic crops that are pesticide and chemical fertilizer free and used for topical skin, hair, face, and dental care (Vandamme, 2001). Most traditional skin-care cosmetic formulas contain hazardous and non-biodegradable petroleum or mineral oil-derived chemicals.

Customers trust and respect natural, ecological, and greener cosmetics; thus, there is high demand. The use of chemicals in cosmetic compositions has sparked many concerns about their safety. A typical makeup contains around 15–20 substances, and given that one uses at least five

decorative items every day, one is putting 75–100 chemicals on their skin through cosmetic usage (Jones & Selinger, 2018). Demand for green cosmetics has recently increased, prompting many cosmetic giants to shift their focus from fossil-based ingredients to bio-based ones. Due to rising demand, the global organic and natural cosmetic industry is expected to reach \$25.11 billion by 2024 (Market Research Report, 2021). The rising demand can be accredited to people becoming more aware of the potentially toxic compounds such as lead, aluminum, mercury, and parabens found in cosmetics today. Since 2009, 595 cosmetics companies have acknowledged utilizing 88 chemicals related to cancer, birth abnormalities, or reproductive damage in over 73,000 products (Faber, 2020). One can understand that beauty is pain, but nobody wants to die over their makeup use; it gives "killer good looks" a whole new meaning. The use of science helped discover another significant concern: per- and polyfluoroalkyl substances (PFAS). They are a group of manufactured chemicals containing 9,000 different compounds linked to severe health effects such as cancer, hormone disruptions, weakened immune systems, and low birth weights (Gamillo, 2021). The substances last for a long time, earning them the moniker "forever chemicals." The shocking part is that a study proved that companies could make cosmetics containing some of the 9,000 different compounds without PFAS (Perkins, 2021). Many cosmetic products do not need to include PFAS, but companies add them to save a buck or two.

Extreme droughts, destructive wildfires, enormous floods, catastrophic hurricanes, and widespread famines will be irreversible if humanity does not take fast, concerted action to reduce global warming to 1.5 degrees Celsius by 2040 (Turrentine, 2018). Global warming is a legitimate threat, and the cosmetics industry needs some waste management control, or else the world will suffer the consequences. It's easy to forget that when you take a shower, all of the chemicals on your body travel down the drain and into your community's sanitary sewage system. The substances are subsequently discharged into nearby bodies of water by a wastewater treatment facility (which is no match for cosmetic chemicals) and end up damaging the wildlife in those waterways. Unsurprisingly, chemicals in the water are not where the waste stops.

Fortunately, for the sake of humanity, there have been scientific advances in the cosmetics industry that allows companies to manufacture their products all naturally. Every year, 120 billion pieces of cosmetics packaging, including plastic, paper, glass, and metals, end up in landfills (Okafor, 2021). Elate is a company that addresses all sides of sustainability by using bamboo, glass, aluminum, and seed paper, with the brand's packaging being about 75% waste-free and the ingredients being around 75% organic and 100% vegan and cruelty-free (Cieslak, 2021). Kelsen is another company whose products are made with environmentally friendly packaging and organic ingredients while containing no synthetics and fillers, are 100%

microplastic free, have no single-use plastics, and are cruelty-free (Anelli,2020). Lastly, Aether Beauty is another company that prides itself on its zero-waste packaging and 100% vegan and nonchemical makeup (Rearick & Nieves, 2020). It is a marathon, not a sprint, and companies realize that there are no customers if there is no world or if they all get slowly poisoned to death.

In short, the beauty industry is indebted to science for helping to put them down the right path and providing solutions to problems that companies would not have identified if it was not for breakthroughs and advancements in science.

References

Anelli, A. (2020). *5 Cosmetic Brands with Environmentally Friendly Packaging*. Desert Hue.

Cieslak, E. (2021). *We Researched the Best Sustainable Makeup Brands-Here Are Our Top Picks*. Treehugger.

Faber, S. (2020). *The Toxic Twelve Chemicals and Contaminants in Cosmetics*. Environmental Working Group.

Gamillo, E. (2021). *Scientists Find Toxic 'Forever Chemicals' in More Than 100 Popular Makeup Products*. Smithsonian.

Jones, O., & Selinger, B. (2018). The Chemistry of Cosmetics. *Web Australian Academy of Science*.

Market Research Report (2021) The Global Cosmetic Products Market by Product Type

Okafor, J. (2021). *Environmental Impact of Cosmetics & Beauty Products*. TRVST.

Perkins, T. (2021). *Toxic 'forever chemicals' widespread in top makeup brands, study finds*. The Guardian.

Rearick, L., & Nieves, B. (2020). *15 Best Sustainable Beauty Brands to Shop for Earth Day*. Teen Vogue.

Turrentine, J. (2018). *Climate Scientists to World: We Have Only 20 Years Before There's No Turning Back*. NRDC.

Vandamme, E. (2001). Biocosmetics Produced Via Microbial and Enzymatic Synthesis. *AGRO Food Industry Hi-Tech*, 12(1), 11–18.