FORMULATING FOR SUN
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Sunscreens are a special class of personal care products containing active ingredients that can absorb ultraviolet (UV) radiation to shield skin from the damaging effects of the sun. Due to short- and long-term effect on health and beauty, it is desirable to protect skin and hair from UV light. To protect exposed skin and hair from the damaging effects of sunlight, scientists have developed various chemicals that can absorb or block UV radiation. A variety of compounds have been developed that have a molecular structure capable of UV absorption. These absorbers can be formulated in appropriate vehicles that can be conveniently applied to exposed skin to protect cells from interaction with radiation.

Cosmetic & Toiletries magazine offers the cosmetic chemist a compendium of information on creating sun care products in this ***Formulating for Sun*** compilation. Pulling from its most popular articles written by world-renown experts, this book delivers the same quality and international appeal as the magazine.

In the 10 Chapters the book spans a wide range of topics such as UV damage in hair and skin, outdoor tanning and self-tanners, the importance of filters, forms of delivery and treatments in photo aging, offering a comprehensive look at the formulation aspect of sun care.

The aim of the first Chapter is to present the ABCs of sun protection filters (SPF) (UV light and its effects, the chemistry of UV absorbers, key sunscreen chemicals, sun-care formulation and testing sun-care products) and the results of a study that evaluates the level of risk and protection under a situation in which the UV exposure approaches 30 Minimal Erythemal Dose.

The second Chapter deals with the effects of UV damage on human hair and present some conclusions resulting from the research on mechanisms of wrinkle formation and methods of prevention.

Chapter 3, entitled “Tanning” , includes the ascorbic acid and its derivatives in cosmetic formulations, the dihydroxyacetone based self-tanners and tanning magnifiers (tanning accelerators which enhance the substrate for the production of melanin). The ability to inhibit tyrosinase activity and melanogenesis and the safety of the ramulus mori extract’s active compound is also reported.

Chapters 4 and 5 deal with some filters and blockers formulations , the safety and efficacy of these photoprotectants, the synergy with other components, their mechanism of action and ability to attenuate UV radiation. The photostability of sun filters is very important in evaluating the protection period and represents a safety factor involving skin sensitivity and irritation. Chapter 5 presents some studies on this complex problem.

Chapter 6 contains different systems used for skin and hair photoprotection: green tea polyphenols, artemia extract, enzymes from deep-sea bacteria, polyamide-2, polysilicone-15, carotenoids derived from a natural source.

Different sunscreen formulas represent the objective of the Chapter 7 entitled “Formulating”. This chapter reviews testing methods and sunscreen components that assist the formulator in the art and science of sunscreen formulation and presents

formulating water-resistant sunscreen emulsions, new methods of micronization and coating of physical filters, spreading control agents used in the formulation of topically applied drugs, especially sunscreens, sunscreen formulas with multilayer lamellar structure, film-forming polymers in sun care formulations and some methods of improving SPF water resistance and performance.

The physicochemical properties of cyclodextrins and their ability to camouflage various undesirable chemical and biological effects in cosmetic products are treated in Chapter 8.

A very special Chapter (9) is that devoted to the testing methods for the sunscreens. This Chapter contains six papers concerning a laboratory method for measuring the water resistance, photographic evaluation of photo damage, determination of the in vitro SPF, quality comparison of w/o and o/w photo protection creams, photo stability testing of avobenzone.

The last Chapter (10) is devoted to photo aging and begins with the treatment of photoaged hands and continues with defending against photoaging and the participation of metalloproteinases in photoaging.

Every chapter of the book appears as a well-defined work, able to give to the reader the information connected with the subject, to illustrate the real stage of the researches in the field and to suggest future development ways. The extensive bibliography that follows each chapter is a guarantee for the quality of information, but also a good basis for those who want to research more widely a certain subject.

Formulating for Sun covers the gamut of information for sun industry insiders from the basics of SPF, to the testing, formulating and sun filters.

Anyone designing products for sun protection, tanning or sunless tanning should find answers here to many troublesome formulation questions encountered on a day-to-day basis. The large amount of information, the clear structure recommends this book for scientists directly involved in the producing of cosmetics, researchers, teachers and students in the field of cosmetic products.

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