



AN OVERVIEW OF THE FDA CHANGES TO SUNSCREEN REGULATION IN 2019

Sunscreens are routinely used by consumers for the prevention of sunburn and to reduce the risk of premature aging and skin cancer due to sun exposure. The American Academy of Dermatology (AAD), the Surgeon General, and the United States Food and Drug Administration (FDA) recommend that individuals use sunscreens as part of their daily sun protection plan, especially when engaged in outdoor activities. In the United States, sunscreens are regulated as over-the-counter (OTC) drugs under the FDA Final Rule 2011 [1], the Sunscreen Final Monograph 1999 [2] and the FDA Sunscreen Innovation Act (SIA) [3]. Under the Sunscreen Innovation Act, 21 USC 360-fff-5, enacted November 16, 2014, the FDA is required by law to finalize and put into effect the final monograph for OTC sunscreen products no later than November 26, 2019.

THE CHANGES TO REGULATION IN 2019

On February 26, 2019, the FDA published a proposed rule, "Sunscreen Drug Products for Over-the-Counter Human Use [4]" to establish final monograph regulations for over-the-counter (OTC) sunscreen drug products. When finalized, the rule will inform the conditions required for OTC sunscreen products that are to be marketed in the United States. Within the proposed rule, the FDA provides its stance on the safety of active ingredients, dosage forms, SPF claims, broad spectrum claims, labeling, recordkeeping, and final formulation testing.

HOW DOES THE PROPOSED RULE AFFECT ACTIVE INGREDIENTS IN SUNSCREENS?

In the proposed rule, FDA states that there is still not enough evidence to determine the GRASE (Generally Recognized as Safe and Effective) status for most of the ingredients listed in the stayed 1999 final sunscreens rule. The proposed rule does not address the sunscreen active ingredients that were submitted under the FDA's Time and Extent Application regulations. Those ingredients will be addressed through the process established under the SIA.

In the proposed rule, FDA continues to classify zinc oxide and titanium dioxide as GRASE/Category I for sunscreen use at concentrations of up to 25 percent. For two other ingredients, para-aminobenzoic acid (PABA) and trolamine salicylate, the FDA has determined that their risks outweigh the benefits and have classified them as non-GRASE, (Category II, Not Generally Recognized as Safe and Effective).

For the remaining twelve ingredients (see below), the FDA is seeking additional data on ingredient safety (Category III, insufficient data available to permit final classification), based in part on changes in the conditions of sunscreen usage since the stayed 1999 Final Monograph.

The Twelve Ingredients Are:

- Avobenzone
- Cinoxate
- Dioxybenzone
- Esulizone
- Homosalate
- Meradimate
- Octinoxate
- Octisalate
- Octocrylene
- Oxybenzone
- Padimate O
- Sulisobenzene

The data gaps that FDA has identified for many of these ingredients, for example, Maximal Usage Trial (MUsT) assessments and evaluation of developmental, reproductive and carcinogenicity risks, are not likely to be resolved before FDA finalizes this rule as required by the statutory deadline. During the comment period for the proposed rule, the FDA will consider requests to defer further rulemaking with respect to sunscreen active ingredients to allow the submission of new safety and/or effectiveness data.

WHAT ELSE HAS CHANGED?

GRASE Status of Sunscreen Dosage Forms

Dosage forms that are GRASE (Category I) for use as sunscreen products include sprays, oils, lotions, creams, gels, butters, pastes, ointment and sticks. In the proposed rule, sprays would be considered GRASE/Category I, provided they have been tested to show inhalation risks (particle size restrictions) and flammability (flammability and drying time testing) are within acceptable limits. Powder forms of sunscreens (Category III) would also be eligible for inclusion in the final monograph, pending additional safety data and testing to demonstrate minimal inhalation risks (particle size restrictions). Any other dosage form, such as wipes, body washes, and shampoos, would be considered new drugs and would require FDA new drug application (NDA) approval.

Sunscreen Labeling

In addition to the active ingredient considerations, this regulation proposes to raise the maximum SPF labeling on sunscreen products from SPF 50+ to SPF 60+, with SPF 60+ having a determined SPF value range of 60-80 in order to be considered OTC. Marketing of sunscreens above SPF 80 would not be permitted without an approved NDA. All sunscreen products of SPF 15 or higher would also be required to provide broad-spectrum protection against Ultraviolet A (UVA) rays, which are associated primarily with premature aging of the skin and skin cancer. Products that do not provide broad spectrum protection would require the SPF statement to be followed by an asterisk (*) directing consumers to see the “*Skin Cancer/Skin Aging alert” elsewhere on the label.

Labeling of SPF values above SPF 15 would be done in increments of 5 or 10 SPF units, dependent on the determined SPF value calculated from the test results. The rule would revise labeling regarding statement of identity and change label formats to make SPF, broad-spectrum and water-resistant statements more prominent on a product’s principal display panel (PDP). Manufacturers would also be required to clearly label active ingredients on the front of their sunscreen products, as per the specified directions.

Sunscreen - Insect Repellent Combinations

Currently, combination sunscreen-insect repellent products are jointly regulated by FDA as sunscreen drugs and by the Environmental Protection Agency (EPA) as pesticides under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA). In the new proposed rule, FDA is proposing to classify these products as non-GRASE (Category II), prohibiting them from being marketed in the U.S. market. Incompatible FDA and EPA labeling requirements “prevent these products from being labeled in a manner that sufficiently ensures safe and effective use of the sunscreen component and provides adequate directions for use.” Data suggest that the combined use of sunscreens and pesticides may increase absorption of either or both components.

WHAT THIS MEANS FOR SUNSCREEN TESTING

In the proposed rule, the FDA has added more explicit direction “to ensure that final formulation testing is conducted and documented in a way that verifiably provides for protection of human subjects in SPF and water resistance testing, as well as ensuring the reliability of all the testing data that underlies sunscreen labeling.”

Among the changes proposed for testing and record keeping are the following:

- “Responsible Person” is defined and their responsibilities, comparable to those for an Investigational New Drug application (IND), are defined.
- The testing facility must be registered in accordance with 21 CFR 207 and FD&C Act Part 510.
- Informed Consent and Institutional Review Board (IRB) procedures are more complete.
- Trained medical professionals must examine subjects backs for qualification into the trial.
- Subjects are restricted to a period of at least 4 weeks between trials.
- The broad spectrum test for Critical Wavelength (370 nm or greater) must also meet a UVAI/UV ratio of 0.70 or higher.
- More rigorous documentation and record keeping requirements align with GCP.

WHAT SUNSCREEN BRANDS NEED TO CONSIDER

The proposed regulations aim to clarify FDA expectations for appropriately conducted safety and efficacy testing as well as appropriate record keeping in order to safeguard the FDA's ability to assess industry compliance and consumer safety. The FDA encourages manufacturers to consider final safety and efficacy requirements during the formulation and testing protocol design phases. The FDA requires adequate detailed data to assess and confirm the safety and efficacy of sunscreen active ingredients.

Final formulation testing of OTC sunscreens remains necessary to confirm that the active ingredient is not systemically absorbed above reasonable exposure levels. One important consideration is that variations between sunscreen product formulations can influence the transdermal absorption of active ingredients. Thus, the FDA recommends testing a minimum of four distinct formulations with the same active ingredient to assess overall transdermal absorption potential. Formulations should be prepared using vehicle systems appropriate for topical sunscreen application and resemble marketed formulations. Final formulation assessments in in vitro permeation testing and MUSt evaluations must follow properly validated Good Laboratory Practices (GLP) and Good Clinical Practices (GCP), respectively, and be well-documented such that the studies could be easily reproduced.

CPT & SUNSCREEN TESTING



Until we can prove safety to the satisfaction of the FDA, an alternative method should be developed to address ingredient safety in order to avoid a MUSt study on every finished product.



**- Craig Weiss, President,
Consumer Product Testing Company.**

As a global leader in sun protection testing for more than 25 years, the Consumer Product Testing Company (CPTSM) Photobiology Division offers services utilizing methods adopted worldwide for compliance to regulatory requirements. In addition to standard SPF, PFA, phototoxicity, and photoallergy testing, CPTSM works with our clients to develop novel testing methods including sand resistance, water protection, and pilot research programs.

- Phototoxicity / Photoallergy
- SPF and PFA Protection Efficacy
- Water resistant testing
- In vitro broad spectrum testing
- Claim substantiation
- Custom protocol development
- GMP sunscreen assays (all organic and inorganic actives, including TiO₂ and ZnO), raw material testing, method validation, process validation and stability services
- cGMP consulting by in-house experts, including, compliance audits and vendor certification programs.

For more information regarding CPT's sunscreen testing capabilities, please visit our website:

<https://www.cptclabs.com/photobiology-department/>

References

1. Food and Drug Administration: Labeling and Effectiveness Testing: Sunscreen Drug Products for Over-the-Counter Human Use, <https://www.regulations.gov/document?D=FDA-1978-N-0018-0698>, (2011)
2. Food and Drug Administration: Sunscreen Drug Products for Over-the-Counter Human Use, Final Monograph, <https://www.govinfo.gov/content/pkg/FR-1999-05-21/pdf/99-12853.pdf#page=1>, (1999)
3. U.S. Department of Health and Human Services, Food and Drug Administration, Center for Drug Evaluation and Research (CDER): Sunscreen Innovation Act: Section 586C(c) Advisory Committee Process Guidance for Industry. 12 (2016)
4. Food and Drug Administration: Sunscreen Drug Products for Over-the-Counter Human Use, <https://www.federalregister.gov/documents/2019/02/26/2019-03019/sunscreen-drug-products-for-over-the-counter-human-use>, (2019)