

Sunscreen Testing Defined

SPF # / SPF Value

The FDA mandates that all sunscreens sold in the US complete SPF testing at a third party laboratory, which is a measure of UVB protection. This test is completed on 10 human panelists with varying skin types. The sunscreen is applied to their skin and then small patches of their skin are exposed to a special lamp that simulates UVB rays. Each patch is exposed for a different amount of time. A technician then grades the skin on how red it gets. The length of time it is exposed without burning is averaged across all panelists, and this determines the SPF number. Each individual's skin and environmental factors differ, so it is important to take all variables into account when selecting an SPF.

Water Resistant

The FDA mandates that all sunscreens sold in the US complete Water Resistant testing at a third party laboratory for either 40 or 80 minutes. This test determines how long the UVB protection is maintained. Sunscreen is applied to 10 human panelists who then sit in a whirlpool for 20 minutes. They then get out for 20 minutes without towel drying. They repeat this process until they have been in the whirlpool for a total of either 40 minutes or 80 minutes, depending on what the product is testing to claim. After each panelist has completed their time in the whirlpool, the SPF Value test is repeated to see if the value being claimed is maintained.

No matter the water resistance value, the FDA mandates that the Directions on all water resistant sunscreens tell consumers to reapply after 40 or 80 minutes swimming or sweating, immediately after towel drying, and at least every 2 hours.

Critical Wavelength

Sunscreen is spread on a flat surface and a fixed amount of UVA rays are applied to it. The technician measures the absorption, which must be at least 90% and the wavelength must be a minimum of 370nm in order to claim Broad Spectrum protection.



Additional UVA Testing

In the European Union (EU), it is required to perform at least one of the below ISO tests to determine the amount of UVA protection. All products sold in the EU must have a UVA level equal to at least 1/3 of the SPF (UVB) value. These tests are not required in the US, however, Australian Gold does perform at least one of these on most Broad Spectrum products.

ISO 24443: Sunscreen is spread on a flat surface and a fixed amount of UVA rays are applied to it. The amount of UVA rays that are absorbed is measured. Mineral sunscreens should not use this test as minerals do not absorb UV rays, but rather reflect them.

ISO 24442: A similar test is performed as the UVB or SPF Value test, where product is applied to 10 human panelists, but instead of measuring how red skin gets, the technician measures how brown skin gets. The results are recorded with a PPD (Persistent Pigment Darkening) number. The higher the number, the more UVA protection.



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