In Vivo Water Resistance Testing

Supportable Claims

- Water Resistance
- 40 min (Water Resistant)
- 80 min (Extra Water Resistant)
- Up to 4 hrs (Australia)
- Sweat Resistance - with adjusted protocol

Steps of the Test

The test sample is applied to the inter-scapular area of the back in the same procedure as used for static SPF testing.

After dry down of the applied film of sample, the test subject is then immersed in a spa or similar device and is subjected to cycles of immersion and rest periods until the total intended challenge time has been achieved. The subject leaves the water and the exposure to simulated sunlight are completed in the same fashion as for the standard SPF test.

Measurement

The erythemal response series is read 16 to 24 hrs following exposure. Colour change is compared with an untreated area in order to arrive at the Water Resistance SPF.

Reporting

For Australia, New Zealand and USA, the SPF post immersion is the claimable value. For other markets, if the post immersion SPF is not less than 50% of the Static SPF, then the Static SPF can be claimed.

In Vitro Water Resistance Testing

Supportable Claims

- Behaviour can be predicted by utilising an in vitro test. Here the product is applied to PMMA or roughened glass slides, immersed in water and then agitated in a temperature and flow controlled environment.

Sweat Resistance

The protocol can be modified by replacing the spa pool with a sweat chamber. Alternatively, exercise can be undertaken, such as on a bike. In this case, the time starts from the point where the test subject starts to exhibit continuous perspiration.

References

1. ISO 24444 Cosmetics - Sun Protection Test Method - In vivo determination of SPF
2. COLIPA Guidelines for Evaluating Sun Product Water Resistance
   Cosmetics Europe

John Staton is a founding Director of Dermatest Pty Ltd, Sydney, Australia and has been conducting SPF testing and skin efficacy and evaluation studies continuously since 1997.