Dermatest Pty Ltd Test Protocol Outline

COLIPA UVA Ratio Determination and E.U. Compliance test -

COLIPA 2007 Method . UVA I/UV Ratio is calculated from this measurement technique.
Compliance with E.U. requrements is also reported.

Experimental Design

Transmittance of a dried down film is measured between 290 nm and 400 nm. E. U. requirements can be extrapolated by conversion of the ratios determined.

Challenge of the sample film is required by pre irradiation with a compliant light source which is designed to imitate sunlight.

The spectral curve is measured, using a purpose built spectrophotometer which has been fitted with an integrating sphere device.

Method

The substrate for measurement is abraided Polymethylmethacrylate (PMMA) Plates.

A thin film of the test product, at a thickness of 0.75 mg/sq cm, is applied, by a standard application technique. This involves applying a series of around 30 dots over the area of the plate and then rubbing out evenly with the finger covered by a finger cot which has been pre-impregnated to saturation with the same product. The prepared plates are pre-irradiated in a Xenon Arc solar simulator, filtered to comply with the requirements of the COLIPA Protocol. The dose of UV light for pre-irradiation is calculated in order to arrive at the required dose appropriate to the expected UVAPF performance of the product.

An SPF 290 Analyser is utilised for measurement. The instrument is calibrated on a regular basis.

Measurements are taken against a matching blank glycerin loaded PMMA plate, at increments of 1 nm between the range of 290 and 400 nm. Calculations are completed by input of the data onto the standard COLIPA spreadsheet.

9 replicate measurements are taken pre-irradiation and a corresponding 9 are made post irradiation, on non-overlaying areas of each of the plates. Adjustment is made to film thickness in order to relate in-vitro calculated SPF with in-vivo SPF, using C values limits as required by the COLIPA software.

Reporting

A COLIPA compliant report is provided in standard spreadsheet format.

SPF/UVAPF Ratio is reported.

UVAPF Dx/Measured SPF value and indication of E.U. compliance.

Spectral data is provided.

References

Method for the in vitro Determination of UVA Protection Provided by Sunscreen Products Guideline 3007

DESOP 061 Procedure for Measurement of UVA1/UVA Ratio - FDA Method

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