

DIN EN ISO 24443:2013-05 (E)

Determination of sunscreen UVA photoprotection in vitro (ISO 24443:2012)

Contents	Page
Foreword	3
1 Scope	4
2 Terms and definitions	4
3 Principle	5
4 Apparatus	5
4.1 UV spectrophotometer specifications	5
4.2 Calibration of the UV spectrophotometer	6
4.3 Calibration of the UV exposure source	6
4.4 Monitoring of the UV exposure source	6
4.5 Calibration of the UVA radiometer used to monitor the test sample irradiation	7
4.6 Substrate/plate	7
5 Test method	7
5.1 Outline of the test procedure	7
5.2 Equipment calibration and validation of test plates	7
5.3 Absorption measurements through the plate	8
5.4 Sample application	8
5.5 Absorbance measurements of the product-treated plate	8
5.6 Number of determinations	8
5.7 Determination of initial calculated SPF (SPF _{in vitro}), "C" value, initial UVAPF(UVAPF ₀), and UV exposure dose	8
5.8 UV exposure	10
5.9 Measurement of final adjusted absorbance spectrum	10
5.10 Calculation of UVAPF of plates after UV exposure of the sample	11
6 Procedure using the spreadsheet in this International Standard	11
7 Reference sunscreen formula S2	12
8 Test report	12
Annex A (normative) Calibration of UV spectrophotometer and plate transmission test	13
Annex B (normative) Radiometer calibration to spectroradiometric irradiance procedure	17
Annex C (normative) Computation values: PPD and erythema action spectra and UVA and UV-SSR spectral irradiances	19
Annex D (normative) PMMA test plate surface specifications	22
Annex E (normative) UVA reference sunscreen S2	24
Annex F (informative) Statistical calculations	28
Bibliography	30