DIN EN ISO 23675:2025-04 (E)

Cosmetics - Sun protection test methods - In vitro determination of sun protection factor (SPF) (ISO 23675:2024)

Contents

Page

Foreword ..... **v**

Introduction ..... **vi**

1 Scope **1**

2 Normative references **1**

3 Terms and definitions **1**

4 Principles **4**

5 Reagents and/or materials **4**
5.1 Sample substrate — Double plate 4
5.2 Reference sunscreen 4
5.3 Finger-cot 4
5.4 Blank 4

6 Apparatus **4**
6.1 Spectrophotometers 4
6.1.1 Specification 4
6.1.2 Monitoring 5
6.2 Automatic positive-displacement pipette 5
6.3 Analytical balance 5
6.4 Robot 5
6.4.1 Specifications 5
6.4.2 Monitoring 5
6.5 Solar simulator 6
6.5.1 General 6
6.5.2 Quality of solar simulator radiation 6
6.5.3 Maintenance and monitoring the solar simulator 6

7 Procedure **7**
7.1 Outline of the test procedure 7
7.2 Preparation of reagents and materials 8
7.2.1 Plate preparation and handling 8
7.2.2 Finger cot 9
7.3 Product application on plates and robot automatic spreading 9
7.3.1 Weighing of product and application on plates 9
7.3.2 Automatic spreading 10
7.4 Measurement of initial absorbance using two plate types (290 nm to 400 nm) 10
7.4.1 Blank measurement 10
7.4.2 Initial absorbance measurement 10
7.4.3 Calculation of pre-irradiation in vitro SPF_i 11
7.5 Calculation of irradiation dose (based on pre-irradiation in vitro SPF_i) 12
7.6 Irradiation with calculated dose 12
7.7 Measurement of post-irradiation absorbance using two plate types 12
7.8 Calculation of post-irradiation in vitro SPF_i 12
7.9 Calculation of final in vitro SPF_i of each pair of plates 13
7.10 Calculation of final in vitro SPF of the product 13
7.10.1 General 13
7.10.2 Validation of final in vitro SPF 13

8 Test report **14**

Annex A (normative) **UV exposure and erythemal action spectra and solar simulator UV spectrum** **16**
Annex B (normative) **Specification sample plate** **20**
Annex C (normative) **SPF reference sunscreen products** **23**
Annex D (normative) **White petroleum and glycerin** **35**
Annex E (normative) **Spectrophotometers specification and monitoring** **37**
Annex F (normative) **Robot specification** **41**
Bibliography **43**