

SPF TEST REPORT

Krisada Laboratories Co., Ltd.

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Report ID : 2880/1225R1

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Client : บริษัท เขียวรีลีเมะ จำกัด
24/6 หมู่ที่ 4 ตำบลบางขนุน อำเภอบางกรวย จ.นนทบุรี 11130

Customer ID : CCC/0359-1225

Sample ID : CH/290325

Received Date : 01/12/2025

Sample Name : CMe CheerTsuMe - Ultra-Light Refreshing Facial Sunscreen
SPF50+ PA++++ UV0431.13

Analysis Date : 09/12/2025

Report Date : 24/12/2025

Job No. : 0929/25

Sample Characteristic and Condition

Sample Type : Sunscreen (ผลิตภัณฑ์กันแดด)
Appearance : Semi-solid (ลักษณะกึ่งของแข็ง)
Quantity : 60 กรัม
Packaging : กระปุก
Storage Temperature : อุณหภูมิห้อง



Sample Packaging



Sample Appearance

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1. Measurement Method

1.1 Equipment

SPF Analyzer : SOLAR LIGHT SPF-290ASTM
Model : 290AS
Manufacturer : SOLAR LIGHT

Covering both the UVB and UVA spectral regions. The system automatic scans from 290 nm to 400 nm, accumulating and storing data at intervals of 1nm.

1.2 Substrate

Sandblasted PMMA plate size 5x5 cm, Ra = 5-micron surface
Manufacturer : SOLAR LIGHT
Lot : 624
MFG date : 23/02/2025

1.3 Method

Loaded and spread the sunscreen sample on PMMA plate, at an application rate of 1.2 mg/cm². Then left for at least 30 min in the dark condition at temperature 25 -30 oC (same temperature that will be experienced under the SPF analyzer conditions). After that, loaded sample plate is measured by SPF analyzer.

Conditions of analysis

SPF Analyzer : SOLAR LIGHT SPF-290ASTM
Wavelength range : 290 nm to 400 nm
Wavelength step : 1 nm
Blank plate : PMMA plate without sample
Number of sample plates : 3 plates
Number of scans / plates : 6 points

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1.4 Reference standard sunscreen

Standard sunscreen (S2) was used to be a reference standard in SPF analysis. The SPF range of is 14 -17, UVAPF range is 10.7 – 14.7, Critical Wavelength range is 378nm - 382nm

1.5 Calculation

Sun Protection Factor (SPF in-vitro)

$$SPF_{in-vitro} = \frac{\int_{\lambda=290nm}^{\lambda=400nm} E(\lambda) \times I(\lambda) \times d\lambda}{\int_{\lambda=290nm}^{\lambda=400nm} E(\lambda) \times I(\lambda) \times 10^{-A_0(\lambda)} \times d\lambda}$$

where $E(\lambda)$ is the erythema action spectrum
 $I(\lambda)$ is the spectral irradiance received from UV source (SSR or SPF testing)
 $A_0(\lambda)$ is the mean monochromatic absorbance of the test product layer before UV exposure.
 $d\lambda$ is the wavelength step (1 nm)

2. Result

Test Items	STD S2	Result			
		1 st Plate	2 nd Plate	3 rd Plate	Average
SPF in-vitro	15.85	482.49	471.24	466.58	473.4
UVAPF in-vitro	13.04	701.44	665.77	679.28	682.2
Critical Wavelength (nm)	378.8	380.6	380.7	380.6	380.6
UVA/UVB ratio (INITIAL)	-	0.903	0.897	0.905	0.90
UVA/UVB ratio (POST EXPOSURE)	-	0.898	0.898	0.902	0.90

Remarks: Analysis by method based on ISO 24443

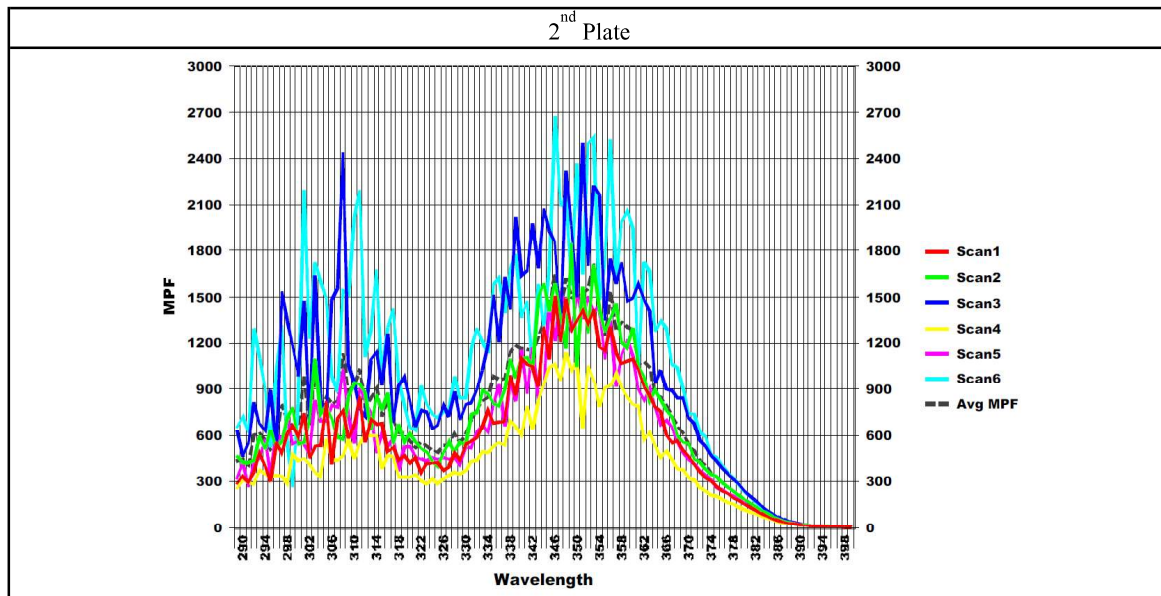
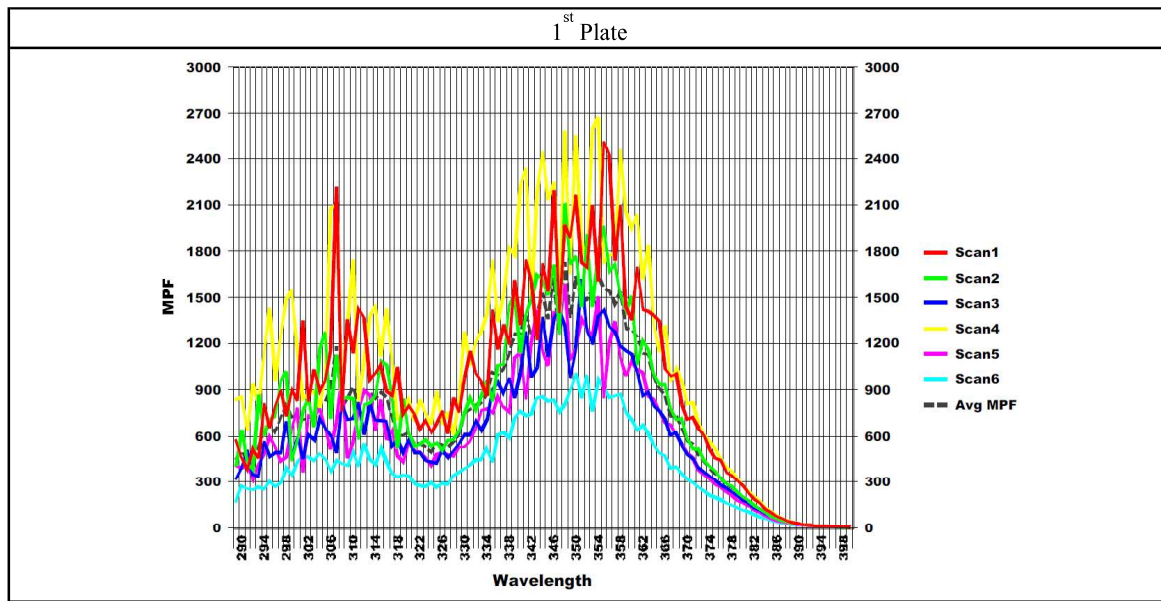
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Graph of Wavelength and Monochromatic Protection Factors (MPF)



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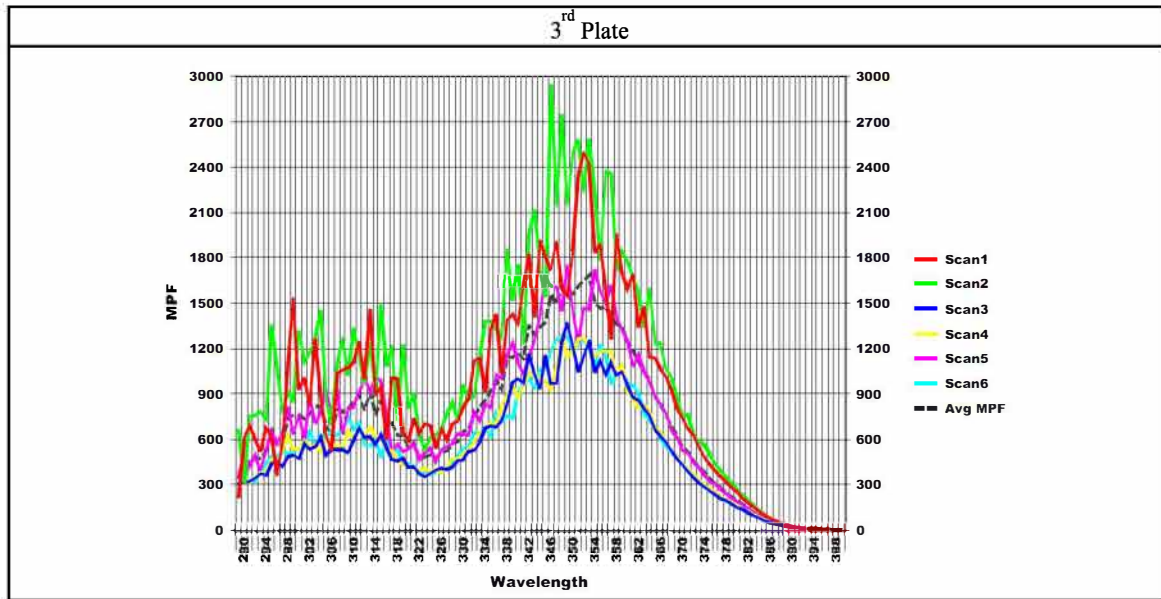
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หมายเหตุ : แก้ไขชื่อตัวอย่างทดสอบ จากเดิม CMe CheerTsuMe - Ultra-Light Refreshing Facial Sunscreen SPF50+ PA++++ UV0341.13 เป็น CMe CheerTsuMe - Ultra-Light Refreshing Facial Sunscreen SPF50+ PA++++ UV0431.13

Analysis by



(Chirattikun Sukkho)

Approved by



(Orrawich Khwanphrom)

Krisada Laboratories Co., Ltd
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