**Supplemental Data**

**Tables**

Table 2: VIS-transmittance of sunscreen products. Shown is the descriptive statistics, including 95 % CI (n=3).

a)

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Transmittance [%]**  **Sunscreens cIaiming VIS protection** | | | | | | | |
| **400-495 nm** | | | | **495-630 nm** | | | |
| 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 |
| mean | 94.9 | 95.1 | 68.2 | 64.6 | 98.9 | 97.3 | 78.4 | 76.3 |
| STDV | 0.61 | 0.80 | 0.47 | 0.35 | 0.20 | 0.47 | 1.11 | 0.36 |
| upper 95 % CI of mean | 96.4 | 97.1 | 69.4 | 65.5 | 99.4 | 98.5 | 81.2 | 77.2 |
| lower 95 % CI of mean | 93.4 | 93.1 | 67.1 | 63.7 | 98.4 | 96.2 | 75.7 | 75.4 |
| median | 95.2 | 95.1 | 68.4 | 64.4 | 98.9 | 97.5 | 78.3 | 76.3 |

b)

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Transmittance [%]**  **Sunscreens without cIaimed VIS-protection** | | | | | | | | | |
| **400-495 nm** | | | | | **495-630 nm** | | | | |
| 5 | 6 | 7 | 8 | 9 | 5 | 6 | 7 | 8 | 9 |
| mean | 98.2 | 80.4 | 58.3 | 82.7 | 59.6 | 99.8 | 89.7 | 72.1 | 91.5 | 75.0 |
| STDV | 0.17 | 0.97 | 0.49 | 0.12 | 1.24 | 0.59 | 0.38 | 0.38 | 0.31 | 1.31 |
| upper 95 % CI of mean | 98.6 | 82.8 | 59.6 | 83.0 | 62.7 | 101.2 | 90.6 | 73.1 | 92.3 | 78.3 |
| lower 95 % CI of mean | 97.8 | 78.0 | 57.1 | 82.5 | 56.5 | 98.3 | 88.7 | 71.2 | 90.8 | 71.7 |
| median | 98.1 | 80.6 | 58.1 | 82.8 | 58.9 | 100.0 | 89.5 | 72.3 | 91.6 | 75.2 |

c)

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Transmittance [%]**  **Make-up/Tinted daily skin care with SPF** | | | | | | | |
| **400-495 nm** | | | | **495-630 nm** | | | |
| 10 | 11 | 12 | 13 | 10 | 11 | 12 | 13 |
| mean | 57.7 | 52.9 | 97.5 | 37.1 | 71.3 | 68.5 | 98.0 | 55.7 |
| STDV | 0.67 | 1.85 | 0.30 | 1.6 | 0.67 | 1.06 | 0.64 | 0.69 |
| upper 95 % CI of mean | 59.3 | 57.5 | 98.3 | 41.0 | 72.9 | 71.1 | 99.6 | 57.4 |
| lower 95 % CI of mean | 56.0 | 48.3 | 96.8 | 33.1 | 69.6 | 65.8 | 96.4 | 54.0 |
| median | 57.5 | 51.9 | 97.5 | 37.1 | 71.1 | 68.3 | 98.3 | 55.3 |

Table 3: Comparison of VIS- and IRA-transmittance of four tinted products. Shown is the descriptive statistics incIuding 95 % CI (n=3).

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Transmittance [%]** | | | | | | | | | | | |
| **VIS** | | | | | | | | **IRA** | | | |
| **400-495 nm** | | | | **495-630 nm** | | | | **780-1400 nm** | | | |
| Sunscreen without claimed IRA protection | Tinted daily skin care | Make-up with SPF | Tinted daily skin care with SPF | Sunscreen without claimed IRA protection | Tinted daily skin care | Make-up with SPF | Tinted daily skin care with SPF | Sunscreen without claimed IRA protection | Tinted daily skin care | Make-up with SPF | Tinted daily skin care with SPF |
| mean | 12.1 | 56.9 | 46.2 | 69.9 | 32.5 | 69.3 | 62.5 | 81.4 | 49.8 | 73.4 | 66.8 | 88.3 |
| STDV | 1.19 | 0.61 | 2.67 | 2.11 | 1.49 | 0.3 | 2.15 | 1.19 | 2.52 | 1.61 | 0.90 | 1.12 |
| upper 95 % CI of mean | 15.1 | 58.5 | 52.8 | 75.1 | 36.2 | 70.1 | 67.9 | 84.4 | 52.4 | 75.1 | 67.7 | 89.4 |
| lower 95 % CI of mean | 9.2 | 55.4 | 39.6 | 64.6 | 28.8 | 68.6 | 57.2 | 78.5 | 47.1 | 71.7 | 65.8 | 87.1 |
| median | 11.5 | 56.8 | 47.1 | 68.7 | 31.9 | 69.3 | 62.6 | 80.9 | 49.3 | 73.2 | 67.1 | 88.5 |

**Table 4:** Comparative description of correlation coefficient (r) between the transmittance and L\*-value.

|  |  |  |
| --- | --- | --- |
| Transmittance | Pearson correlation coefficients  L\*-value | p-value |
| 400 – 495 nm | 0.93552 (positive) | <0.0001 |
| 495 - 630 nm | 0.91489 (positive) | <0.0001 |
| 780 – 1400 nm | 0.95312 (positive) | =0.0469 |

**Table 5:** Comparative description of correlation coefficient (r) between the transmittance values of the different spectra.

|  |  |  |  |
| --- | --- | --- | --- |
|  | Transmittance  400 – 495 nm | Transmittance  495 - 630 nm | Transmittance  780 – 1400 nm |
| Transmittance  400 – 495 nm | - | 0.99520  <0.001 | 0.97783  <0.0222 |
| Transmittance  495 - 630 nm | 0.99520  <0.001 | - | 0.97692  <0.0231 |
| Transmittance  780 – 1400 nm | 0.97783  =0.0222 | 0.97692  0.0231 | - |