Choice of the roughness

Two roughness are proposed for HELIOPLATE© HD. It is worthwhile to precise from our point of view, the high roughness seems quite better to ensure a good spreading in most of the cases…

Nevertheless the COLIPA proposed a method for the UVA determination in 2006/2007 with the use of plates with a roughness of 2 microns. That is the only purpose of the 2 microns roughness quality HELIOPLATE© HD2 to keep within the adopted protocol.

Any other *in vitro* test based on the spreading of a product on a rough plate (such as SPF, Photo stability, Boots rate system etc…) must be done on the 6 microns grade (1).

Quantity applied will depend on the roughness. It is advisable to apply:

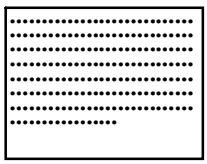
- ◊ around 0.75 mg/cm² for HELIOPLATE© HD2
- ◊ around 1.3 mg/cm² for HELIOPLATE© HD6

Application

Product is applied to the substrate by weight. Application rate is determined in such a way that the actual quantity of product left on the substrate before spreading is 0.75 mg/cm² for HELIOPLATE© HD2 and around 1.3 mg/cm² for HELIOPLATE© HD6.

To ensure the correct application rate ,the syringe has to be weighed before and after product application.

The amount of sunscreen product in the form of a large number of small drops of equal volume is applied by pipette and distributed evenly over the whole roughened PMMA surface of the plate (50 x 50 mm).

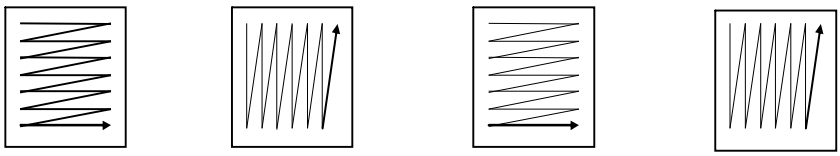


Spreading

Immediately after weighing, the sunscreen product is spread over the whole surface with a finger-cot "pre-saturated" with the product using light strokes. Spreading had to be completed as quickly as possible (less than 30 seconds). Then the sample was rubbed into the rough surface using stronger pressure. This also had to take 20 to 30 seconds. The sample thus obtained was allowed to settle for 15 minutes in the dark at room temperature to ensure self-leveling of the formula.

T = 0 s

t = 20 s



1 2 3 4

Measuring

A total of four to nine UV transmission spectra (from 290 to 400 nm in 1 nm increment steps) is recorded on each plate at different locations.

At least three different plates has to be used for each roughness class to give an average of the UV transmission data at each wavelength.

It is unadvised to clean the plate for any further re use

(1) Pissavini, M., Lutz, D. and al, Determination of the in vitroSPF, Cosm. & Toil., **118** (2003) 63-71.