



PROTAVIC WORLDWIDE

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PROTAVIC® EM 580 UV

A 29939-08-03 A

DEFINITION

UV cross-linkable epoxy resin for rigid glob top, with improved resistance to moisture.

PRODUCT DESCRIPTION

Appearance	liquid	
Odour	slight	
Colour	grey	
Guaranteed specifications	Standards	Methods
Brookfield viscosity at 20°C (mPa.s)	10 000 ± 2 000	NFT 51210 (1 tr/min.)
Setting time under UV radiation (100 W lamp)	< 15 min.	R 9401
Other information		
% Active matter	100	
Density	1.50 approx.	
Energy needed for curing	10-15 J/cm ²	
Storage stability	3 months at 25°C	

APPLICATION PROPERTIES

The **PROTAVIC® EM 580 UV** system has a thixotropy which is suitable for producing "glob top". These "glob top" are used to protect electronic microcomponents which are not located in special cavities.

After curing under ultraviolet radiation, the **PROTAVIC® EM 580 UV** system adheres very well to the majority of plastic substrates such as polycarbonates, epoxy glass and PVC. The **PROTAVIC® EM 580 UV** system also adheres well to alumina.

Thanks to its high cross-linking density, the **PROTAVIC® EM 580 UV** system ensures good protection against moisture.

USING THE PRODUCT

1 - Application process

Whilst using the **PROTAVIC® EM 580 UV** system, it is essential to protect it from light, in order to prevent premature curing.

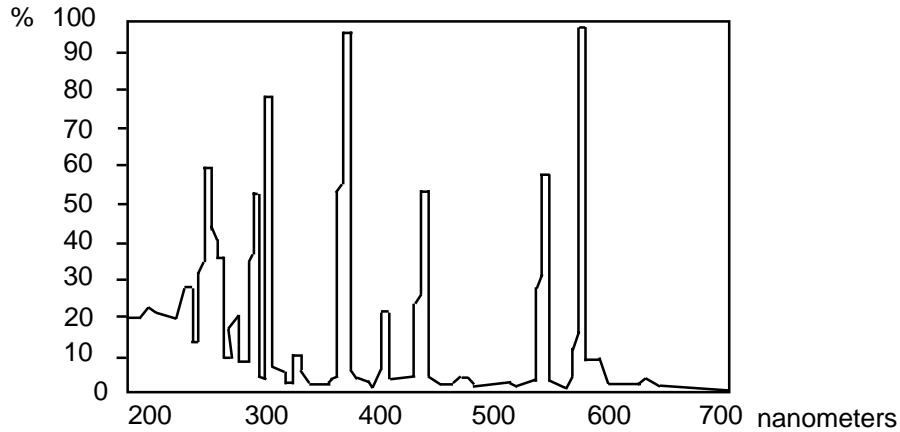
The **PROTAVIC® EM 580 UV** system is easy to apply using a microdispenser.

2 - Curing under UV radiation

The **PROTAVIC® EM 580 UV** system cures under ultraviolet radiation at a wavelength of between 250 and 400 nm with maximum absorption at 312 nm.

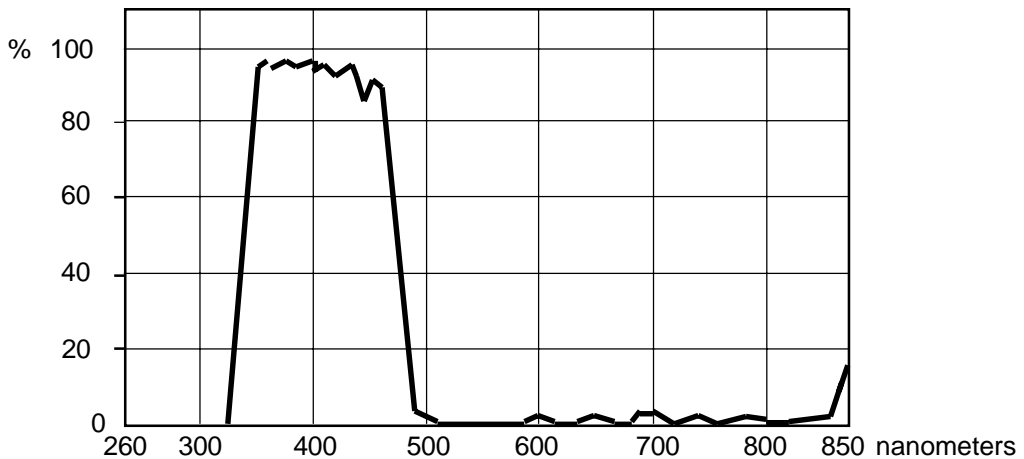
The energy needed for complete curing of the **PROTAVIC® EM 580 UV** system varies between 5 and 15 J/cm². Quite obviously this energy depends on the emission spectrum of the UV lamp used.

For a high pressure mercury vapour UV lamp which has the following spectral distribution curve :



The exposure time needed to cure the **PROTAVIC® EM 580 UV** system is between 15 and 45 seconds.

For a high pressure mercury vapour UV lamp, with a power of between 7000 and 11000 mW/cm², which has the following spectral distribution curve :



The exposure time needed to cure the **PROTAVIC® EM 580 UV** system is about 2 seconds.

TYPICAL PROPERTIES OF THE CURED SYSTEM

The properties set out below were determined following measurements carried out in the laboratory on a limited number of samples.

These values are given by way of guidance, and do not constitute a guarantee.

It will be for the user, in all cases, to carry out his own tests to determine whether the **PROTAVIC® EM 580 UV** system can be used for his particular application.

Table no. 1 : physical properties

Shore D hardness	80 approx.
Tensile strength	300 kg/cm ² approx
Elongation on break	6 % approx.
Glass transition temperature Tg	65°C approx.
Coefficient of linear expansion at 20°C	35.10 ⁻⁶ °K ⁻¹
Coefficient of linear expansion at 80°C	125.10 ⁻⁶ °K ⁻¹

Table no. 2 : resistance to moisture

Product	PROTAVIC® E 585 UV	PROTAVIC® EM 580 UV
Shore D hardness	87	80
Shore D hardness after water absorption test*	57	68
% loss	30	15

* : The cured test-pieces were put into an autoclave for 5 hours where they were subject to :

- a pressure of 2.8 bars
- 100 % relative humidity
- a temperature of 140°C.

The **PROTAVIC® EM 580 UV** system, which is more impermeable to moisture, only lost 15% of its mechanical strength after the water absorption test, as against 30% in the case of the **PROTAVIC® E 585 UV** system.

Table no. 3 : moisture absorption

Product	PROTAVIC® E 585 UV	PROTAVIC® EM 580 UV
% water absorption test	3.50 %	2.20 %

Test derived from standard NFT 51-166

Conditions : 1 h 00 in boiling water.

Test-pieces : thickness 700 µm, diameter 30 mm.

The **PROTAVIC® EM 580 UV** system, which is more impermeable to moisture, absorbs about 35% less water than the **PROTAVIC® E 585 UV** system under these conditions.

STORAGE LIFE AND STORAGE CONDITIONS

Because of its reactivity to UV radiation, the **PROTAVIC® EM 580 UV** system should be stored away from light and heat (do not store at temperatures in excess of 30°C).

The **PROTAVIC® EM 580 UV** system should also be stored away from powerful oxidizing agents.

Under these conditions, the **PROTAVIC® EM 580 UV** system has a storage life of 3 months at 20°C.

PRECAUTIONS IN USE

Refer to the attached safety data sheet.

PACKAGING

The **PROTAVIC® EM 580 UV** system is supplied in 250 g tins.

The information contained in this data sheet corresponds to the present state of our knowledge ; it is intended for your guidance but we are not bound by it since we are not in a position to exercise control over the manner in which our products are used. Moreover, the attention of the user is drawn to the risks that could possibly occur should a product be used for an application other than that for which it is intended.