PROTAVIC® EM 540 UV

A 29950-08-03 A

DEFINITION

Photopolymerizable epoxy resin for flexible "Glob top" which has good resistance to moisture.

PRODUCT DESCRIPTION

Appearance	slightly opalescent liquid
Odour	faint
Colour	colourless to slightly yellow

Guaranteed specification	Standard	Method
Plane cone Brookfield viscosity at 25°C (mPa.s)	2 500 ± 500	NFT 51211 at 105 rpm

Significant values (for guidance)	
Gardner colour	≤ 2
Density	1.1 approx.

Other information	
Energy needed for curing - lamp UV-A (temperature 60°C) - lamp UV-B (temperature 60°C)	 ≃ 5.5 J/cm² ≃ 2.25 J/cm²
Stability at 0°C	the product freezes
Stability at +50°C	keep away from heat
Storage stability	1 year at 20°C. Keep away from light and humidity

APPLICATION PROPERTIES

The **PROTAVIC® EM 540 UV** system has a thixotropic viscosity which is suitable for obtaining "Glob top" with relatively high thicknesses. These "Glob top" therefore are used to protect electronic microcomponents which are not housed in special cavities. The **PROTAVIC® EM 540 UV** system however remains suitable for filling some cavities thanks to its rheofluidizing character.

After curing under ultraviolet radiation, the **PROTAVIC® EM 540 UV** system adheres very well to the majority of plastic and mineral substrates.

The cured **PROTAVIC® EM 540 UV** system provides good protection against moisture.

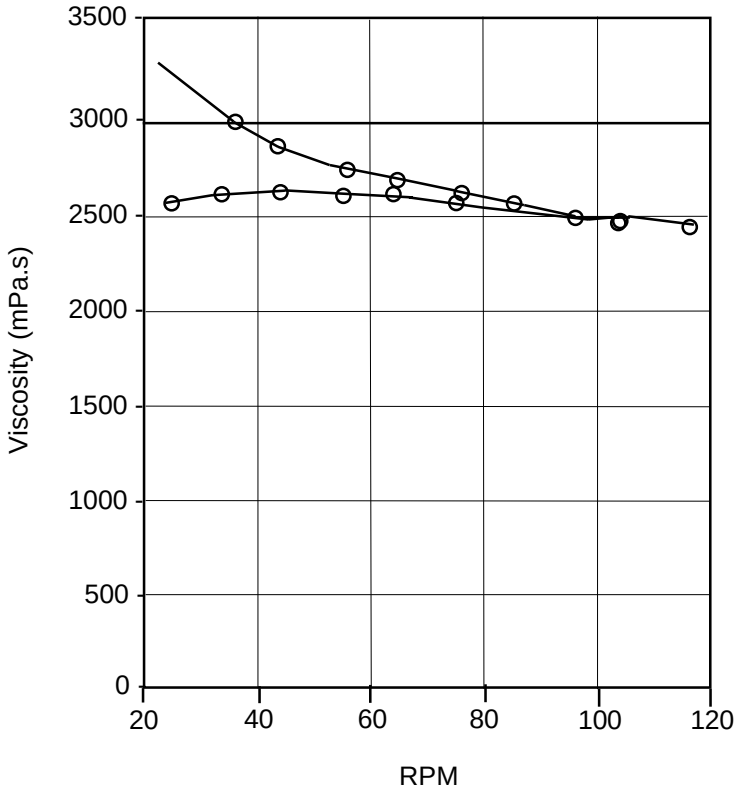
USING THE PRODUCT

1 - Application process

When using the **PROTAVIC® EM 540 UV** system it is absolutely essential to protect it from light in order to prevent the product inadvertently starting to cure.

The rheological behaviour of the **PROTAVIC® EM 540 UV** system allows it to be applied by micro dispenser in order to obtain "Glob top".

Graph no.1 plots variations in viscosity as a function of the cone speed (angle 1.5°).

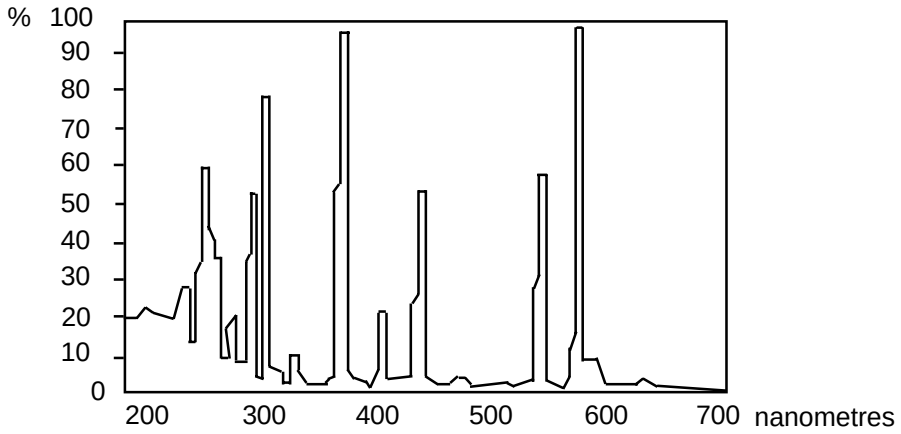


2 - Curing under ultraviolet radiation

The **PROTAVIC® EM 540 UV** system cures under ultraviolet radiation with a wavelength of between 250 and 400 nm and maximum absorption at 312 nm (UV-B type lamp).

The energy needed for fully curing the **PROTAVIC® EM 540 UV** system varies between 2 and 35 J/cm² depending on the intensity UV lamp.

For a high pressure mercury vapour lamp which has the following spectral distributions :



The exposure time needed to cure the **PROTAVIC® EM 540 UV** system is between 15 and 45 seconds.

For an ultraviolet device fitted with a light guide focused around 365 nm (effective insolation diameter : 0.5 to 1.2 mm for a power of 7 000 mW/cm²) the time needed for curing varies between 2 and 5 seconds.

TYPICAL PROPERTIES OF THE CURED SYSTEM

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

They are values 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 540 UV** system can be used for his own particular application.

Glass transition temperature Tg	< 0°C
Shore D hardness	40 approx.
Tensile strength	100 kg/cm² approx.
Elongation on break	60 % approx.

ASSESSMENT OF THE REABSORPTION OF MOISTURE

In accordance with the PROTEX R 9602 method derived from standard NFT 51-166.

Product	% water reabsorption
PROTAVIC® E 550 UV	3.8
PROTAVIC® EM 540 UV	0.9

STORAGE CONDITIONS

Because of its reactivity to ultraviolet radiation, the **PROTAVIC® EM 540 UV** system must be stored away from light and heat (do not store at temperatures in excess of 30°C).

The **PROTAVIC® EM 540 UV** system should also be stored away from powerful oxidizing agents.

Under these conditions, the **PROTAVIC® EM 540 UV** system has a storage stability at 20°C of 3 months.

PRECAUTIONS IN USE

Refer to enclosed safety data sheet.

PACKAGING

The **PROTAVIC® EM 540 UV** is supplied in 1 kg iron boxes.

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.