



# PROTAVIC® ANE 90580

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## **DEFINITION**

The **PROTAVIC® ANE 90580** is a UV adhesive for opaque substrates. The **PROTAVIC® ANE 90580** is designed for sticking die or components by UV flash curing application.

## **PRODUCT DESCRIPTION**

Appearance	translucent liquid	
Odour	light	
Colour	colourless	
<b>Guaranteed specification</b>	<b>Standard</b>	<b>Method</b>
Plane cone viscosity at 25°C (mPa.s)	500 ± 100	NFT 51211
<b>Other information</b>		
Density	1.1 approximately	
Thixotropic index	> 3	
% active matter	100%	
Storage at +50°C	keep away from heat	
Storage at +20°C	3 months	
Storage at +0°C	6 months	
Storage at -20°C	1 year	

## **APPLICATION PROPERTIES**

The use of the UV adhesive **PROTAVIC® ANE 90580** is particularly recommended to stick either opaque or transparent components. Indeed, the **PROTAVIC® ANE 90580** adhesive can be pre-activated when exposed to UV light for a very short time (UV flash).

After exposure under UV radiation, the **PROTAVIC® ANE 90580** adhesive exhibits a good adhesion on most of the substrates, either plastic substrates such as PVC, polyamides, epoxy glass or mineral substrates as glass and alumina.

## **CONDITIONS OF USE**

### **1 - Application process and rheological properties**

Degrease very carefully substrates or components before bonding with non chlorinated solvents (which may encourage corrosion) and finish, if possible by degreasing in a solvent vapour at the end, to achieve optimal adhesion.

The **PROTAVIC® ANE 90580** can be easily applied with a micro-dispenser.

The rheological behaviour of **PROTAVIC® ANE 90580** is adapted for sticking applications. Depending on the size of the component or part to stick, the drops of **PROTAVIC® ANE 90580** will be applied either with simple-needle syringe or with multi-needle syringe.

## **2 - UV polymerisation**

The **PROTAVIC® ANE 90580** is able to polymerise either under UV radiation or under visible radiation. Wavelengths can vary from 250 to 580 nm.

It is strongly recommended to use either a UV lamp or a UV oven with a good ventilation in order to avoid a too high polymerisation temperature. Indeed, the optimum temperature is comprised between 20 to 45°C. Beyond, curing time could increase slightly.

### **Evolution of the polymerisation after UV exposure :**

The **PROTAVIC® ANE 90580** continues to polymerise after the UV exposure (this phenomena is called dark cure). So, it is strongly recommended to wait for at least 24 hours after UV exposure before testing the cured **PROTAVIC® ANE 90580**, in order to let it to reach its optimum properties.

### **Examples :**

Activation with a 5 mm diameter UV optical fiber (ELC 700 UV lamp from ELECTROLITE).

For such an application the maximum recommended drop height is about 1000 µm. The best results are obtained for about 600 µm and less drop height.

These following values are given for information and do not correspond to a guarantee.

The next table shows examples realised from 700 µm drop height.

<b>DISTANCE BETWEEN UV SOURCE AND SUBSTRATE</b>	<b>UV EXPOSURE TIME (SECONDS)</b>	<b>RESULTS</b>
0.4 cm	0.7 s	Good adhesion* thickness between stuck parts about 400 µm
1 cm	2 s	Good adhesion* thickness between stuck parts about 400 µm

\* *silicon die on epoxy glass substrates*

### **Sticking opaque part :**

The **PROTAVIC® ANE 9580** is particularly adapted for sticking opaque parts. Indeed, its strong reactivity allows it to be activated by a very short insulating time.

The principle of the UV sticking is the following :

- The **PROTAVIC® ANE 90580** is applied on the substrate.
- The **PROTAVIC® ANE 90580** is pre-activated : insulating under the UV lamp (short exposure time sufficient for polymerisation activation but the glue remains liquid a few seconds). The exposure time depends on the applied thickness and UV lamp power.
- Positioning the part to stick under a slight pressure on the liquid glue.
- Hardening of the glue without extra applied energy.

The next table shows examples realised from 200 µm drop height.

UV EXPOSURE TIME BETWEEN UV SOURCE AND SUBSTRATE
1.7 s Good adhesion* thickness between stuck parts about 100 µm
3.5 s Good adhesion* thickness between stuck parts about 100 µm

\* silicon die on epoxy glass substrates

**Remarks :**

Like every cationic UV adhesive the **PROTAVIC® ANE 90580** is sensitive to ambient relative humidity. Indeed, it is recommended to work into a controlled atmosphere. Relative humidity percentage recommended can vary from 40 to 50%. Of course it is possible to work at higher ambient relative humidity with a light reduction of the reactivity.

**TYPICAL PROPERTIES OF POLYMERIZED SYSTEM**

New properties have been determined in the application conditions. These values are not to be considered as a guarantee. The user must, in all cases,

**1) Adhesion :**

Adhesion has been evaluated by micro-shear measurement. A silicon die has been stacked on an epoxy glass substrate. Application and insulation condition are the following :

- UV source / substrate distance : 1 cm
- UV insulation time : 3.5 seconds
- Drop height : 200 µm
- Adhesion on epoxy glass : > 100 kg/cm<sup>2</sup>

**2) Physical properties**

TYPICAL PROPERTIES
Density 1.19 g/cm <sup>3</sup>
Short term modulus 1.6 GPa
Glass transition temperature 80°C

## **STORAGE CONDITIONS**

It is strongly recommended to keep away from light the **PROTAVIC® ANE 90580**. Furthermore, it is recommended to store the **PROTAVIC® ANE 90580** at temperature below 25°C.

The **PROTAVIC® ANE 90580** must be kept away from oxidative materials.

The storage stability at 20°C of the **PROTAVIC® ANE 90580** is about 3 months.

## **PRECAUTIONS IN USE**

Refer to the enclosed health and safety data sheet.

## **PACKAGING**

The **PROTAVIC® ANE 90580** is supplied in 30 g and 55 g syringes. Other packaging are available under request.

*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.*