

## DEFINITION

**PROTAVIC® PNE 90295** is a fluid UV epoxy resin designed for fill application in dam and fill smart card encapsulation.

## PRODUCT DESCRIPTION

Appearance	Liquid	
Colour	Off-white	
<b>Guaranteed specification</b>	<b>Standard</b>	<b>Method</b>
Viscosity CP51 at 25°C and 100 rpm	2 500 ± 300 mPa.s	NFT 51211
<b>Other informations</b>	<b>Typical Values</b>	<b>Methods</b>
Thixotropic Index (10 / 100 rpm)	1.1	NFT 51211
Density	1.4 approx.	
Solvent	0 %	TGA 1
Filler particle size	< 80 µm	ISO 1524
Filler content	48 % typical	TGA 1
Energy required to cure a 500 µm thickness fill	3 – 4 J/cm <sup>2</sup>	R 1001
Curing time of 500 µm thickness fill (at 120 mW/cm <sup>2</sup> UV A – metal halide bulb)	30 seconds approx.	R 1001

## APPLICATION PROPERTIES

The rheological behaviour of **PROTAVIC® PNE 90295** is suited for the fill application. It is strongly recommended to use **PROTAVIC® PNE 90295** (fill) with **PROTAVIC® PNE 90595** (dam). Both products are very similar in composition, thus they are chemically compatible and cure together in same UV step.

After curing under ultraviolet radiations, **PROTAVIC® PNE 90295** exhibits good adhesion on many smart card substrates such as glass fiber epoxy.

After polymerisation, **PROTAVIC® PNE 90295** provides good environmental protection.

## USING PROTAVIC® PNE 90295

### 1 - Application process and rheological properties

**PROTAVIC® PNE 90295** should be protected from light before use.

During conditioning from storage temperature (<+5°C) to room temperature, homogenize **PROTAVIC® PNE 90295** by tumbling at 1-2 rpm during 6 hours.

**PROTAVIC® PNE 90295** can be easily applied with a micro-dispenser.

The rheological behaviour of **PROTAVIC® PNE 90295** provides good filling of small cavities.

## **2 - UV polymerisation**

**PROTAVIC® PNE 90295** fast cures to tack-free material under UV radiation. Typical UV-curing conditions are 30 seconds at 120 mW/cm<sup>2</sup> UV A with metal halide bulb. If these conditions are not available a thermal post cure at 80-120°C during 15-30 minutes can allow to reach optimum properties.

### **TYPICAL PROPERTIES OF CURED PROTAVIC PNE 90295**

<b>PROPERTIES</b>	<b>TYPICAL VALUES</b>	<b>METHODS</b>
Shore D hardness	80 approx.	NFT 51109
Modulus at 25°C	5.1 GPa	DMA
Tg	57°C	DMA
Coefficient of thermal expansion from 30 to 150°C	100 ppm/°C	TMA 1
Water absorption by immersion 15 hours at RT	0.5 %	R1005

### **STORAGE CONDITIONS**

It is recommended to store **PROTAVIC® PNE 90295** in its original sealed container, protected from moisture and light at a temperature below 5°C. Under these conditions, the maximum period of storage is 6 months. The product is stable at room temperature but as a filler settling can occurs, it is necessary to homogenize the **PROTAVIC® PNE 90295** before use.

### **PRECAUTIONS OF USE**

Refer to enclosed safety data sheet.

### **PACKAGING**

**PROTAVIC® PNE 90295** packaging on demand.

### **DISCLAIMER**

The data contained herein are furnished for information only and are believed to be reliable. We cannot assume responsibility for the results obtained by others over whose methods we have no control. It is the user's responsibility to determine suitability for the user's purpose of any production methods mentioned herein and to adopt such precautions as may be advisable for the protection of property and of persons against any hazards that may be involved in the handling and use thereof. In light of the foregoing, **Protavic International specifically disclaims all warranties expressed or implied, including warranties of merchantability or fitness for a particular purpose, arising from sale or use of Protavic International's products. Protavic International specifically disclaims any liability for consequential or incidental damages of any kind, including lost profits.** The discussion herein of various processes or compositions is not to be interpreted as representation that they are free from domination of patents owned by others or as a license under any Protavic International patents that may cover such processes or compositions. We recommend that each prospective user tests his proposed application before repetitive use, using this data as a guide. This product may be covered by one or more European or foreign patents or patent applications.