

DEFINITION

PROTAVIC® PNE 90595 is a high thixotropy UV epoxy resin designed for dam application in dam and fill smart card encapsulation.

PRODUCT DESCRIPTION

Appearance	Paste	
Colour	Off-white	
Guaranteed specification	Standard	Method
Viscosity CP51 at 25°C and 5 rpm	16 000 ± 3 000 mPa.s	NFT 51211
Other informations	Typical Values	Methods
Thixotropic Index (0.5 / 5 rpm)	4.3	NFT 51211
Density	1.4 approx.	
Solvent	0 %	TGA 1
Filler particle size	< 80 µm	ISO 1524
Filler content	49 % typical	TGA 1
Energy required to cure a 500 µm thickness fill	3 – 4 J/cm ²	R 1001
Curing time of 500 µm thickness dam (at 120 mW/cm ² UV A – metal halide bulb)	30 seconds approx.	R 1001

APPLICATION PROPERTIES

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

After curing under ultraviolet radiation, **PROTAVIC® PNE 90595** exhibits good adhesion on many smart card substrates such as glass fiber epoxy.

After polymerisation, **PROTAVIC® PNE 90595** provides good environmental protection.

USING PROTAVIC® PNE 90595

1 - Application process and rheological properties

PROTAVIC® PNE 90595 should be protected from light before use.

PROTAVIC® PNE 90595 can be easily applied with a micro-dispenser.

The rheological behaviour of **PROTAVIC® PNE 90595** provides a geometrically stable dam after dispensing (and before polymerisation).

2 - UV polymerisation

PROTAVIC® PNE 90595 fast cures to tack-free material under UV radiation. Typical UV-curing conditions are 30 seconds at 120 mW/cm² 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 90595

PROPERTIES	TYPICAL VALUES	METHODS
Shore D hardness	50 approx.	NFT 51109
Modulus at 25°C	0.3 GPa	DMA
Tg	24°C	DMA
Coefficient of thermal expansion from 30 to 150°C	160 ppm/°C	TMA 1
Water absorption by immersion 15 hours at RT	0.5 %	R1005

STORAGE CONDITIONS

PROTAVIC® PNE 90595 can be stored at room temperature but it is recommended to store it in original sealed container protected from moisture and light at temperature below 5°C to get a maximum period of storage (6 months).

PRECAUTIONS OF USE

Refer to enclosed safety data sheet.

PACKAGING

PROTAVIC® PNE 90595 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.