PNA-97310 ™ series

6-57622
Rev 3.3

DEFINITION

PNA-97310™ series is a very fast curing UV material which can be used in the protecting of and or an adhesive in high reliability applications. PNA-97310 series resin is extremely moisture resistant. This product exhibits low shrinkage during cure and essentially no outgassing after cure. Adhesion is excellent to metals, most engineered plastics, and glass. A secondary heat cure mechanism will cure any shadowed areas that the UV cannot reach. Its low viscosity allows for easy dispense in a variety of machine configurations.

PRODUCT DESCRIPTION

Appearance	Liquid
Odor	Pine like
Color (May be modified to meet your requirements)	Clear Amber

Property	Result			Methods
Viscosity	**PNA-97310**	250 mPa·s	thixotropic index 1	Brookfield RVT, Spindle 14, Small Sample Adaptor, 10 rpm, 25°C
	PNA-97310-X1	5,000 mPa's	thixotropic index 4.5	
	PNA-97310-X2	8,500 mPa's	thixotropic index 5.2	

Other information	
Work life time @ 25 ± 2ºC	3 Months
Depth of cure	Greater than 1/8 inch
Full Cure Time @ 25°C	18 seconds with 100mW flood UV curing system at a six inch distance from bulb
Mix Ratio	Single component.
Possible curing cycles	• 18 seconds at 100 mW/cm^2 • 5 seconds at 7 watt/cm² (1/8" depth) • 125° C / 20 min after UV exposure • 100°C / 30 min after UV exposure
Specific gravity @ 25ºC (g/cm³)	1.1
Storage stability (25 ± 2ºC)	3 Months

PROTAVIC AMERICA, INC.
TEL: & FAX: 800.807.2294 / INT'L: 978.372.2016
WWW.PROTAVICAMERIA.COM

APPLICATION PROPERTIES

- **PNA-97310 ™ series**, when fully cured, is highly resistant to moisture, hot water, steam, hot antifreeze solutions, automotive fluids, detergents, gasoline, hydraulic fluids, plasticizers, cleaning agents, mild acids, and bases.

- **PNA-97310™ series** is highly resistant to vibration and can be thermal cycled between –40 and 170°C.

TYPICAL PROPERTIES OF CURED PNA-97310™

The properties set out below were determined following measurements carried out in the laboratory over a small number of tests. 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 their own tests to determine whether the **PNA-97310™ series** resin can be used for the particular application the user has in mind.

PHYSICO-CHEMICAL PROPERTIES

Properties	**Methods**	**Units**	**Typical values**
Cure 18 seconds at 100mW			
Shore D hardness	ASTM D2240	-----	60
Refractive Index at 25C			1.5105
Modulus	Tested at 25C	MPa	2500 est.
Moisture resistance	24 hours, 25C water immersion	Weight gain	0.3%

. Influence of light intensity

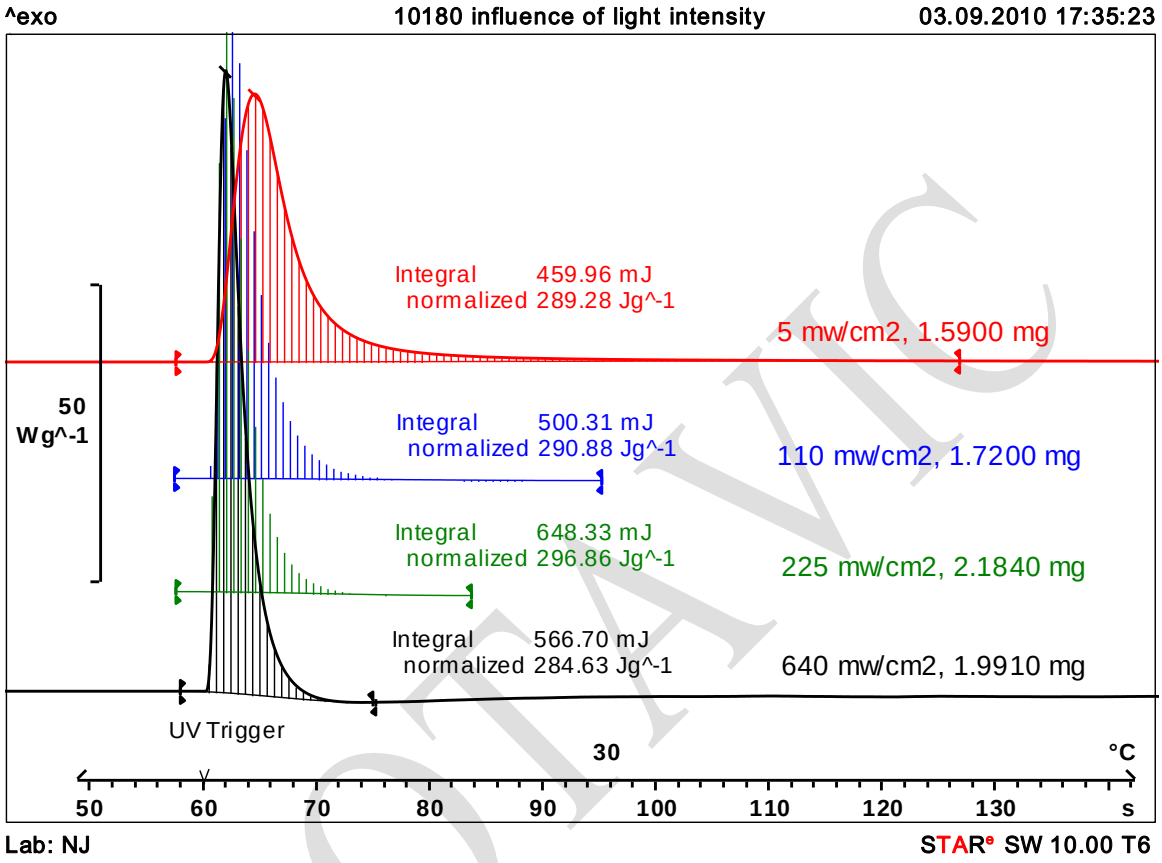

Figure 3: UV-curing under different light intensities.

The influence of the light intensity on the UV-curing was studied. For each light intensity 2 or 3 measurements were conducted and good reproducibility was observed.

With increasing light intensity, the curing peak gets sharper and narrower, also the baseline drift before and after the UV trigger gets more significant, which could be related to the more significant strain built by the faster curing processes. Under light intensity of 110 mW/cm^2, the curing process is practically complete after 18 s. Under light intensity of 225 and 640 mW/cm^2, this time corresponds to 15 s and 12 s respectively. Under a very weak light intensity such as 5 mW/cm^2, up to a point of 130 s (UV exposure of 70 s), the reaction still proceeds though very slowly. Surface cure may suffer at lower intensity. The enthalpy of curing (peak integral) is not significantly influenced by the light intensity, no clear tendency was observed.

PRECAUTIONS IN USE

Refer to the attached material safety data sheet.

PACKAGING

PNA-97310™ is available in syringes. For sizes and part numbers, contact Protavic America, Inc.

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.

PROTAVIC AMERICA, INC.
TEL: & FAX: 800.807.2294 / INT'L: 978.372.2016
WWW.PROTAVICAMERIA.COM