



## NANOPREG SERIES – Phenolic Based Prepregs (NKP1983)

NKP1983 is a phenolic based prepreg product produced from a MIL-R-9299 phenolic resin matrix and different types of plain weave tapes. The material is designed to meet and/or exceed the thermal and insulation requirements of the applications where extended exposure at temperatures up to 500°F are required.

### Where to use:

Composite laminates have been made from NKP1983 conforming to the all requirements of Class A and Class B of the US MIL-R-9299C specification.

### Properties:

Reinforcement Type	High Silica	Carbon
Fabric Area Weight (g/m <sup>2</sup> )	300 - 550	300 - 550
Prepreg Resin Content (%)	38 - 42	38 - 42
Resin Flow (150 psi) (%)	6 - 15	6 - 15
Volatiles (275°F, 8 min) (%)	max. 4	max. 4
Filler Content (%)	1 - 3	1 - 3
Per Ply Widths (cm)	2.5 - 20	2.5 - 20

### Storage and Shelf Life:

Do not expose direct sunlight.  
2 weeks at 25°C. 6 months at - 18 °C

### Cure Schedule:

Pressing Conditions	Vacuum Bag	3.5-21 kgf/cm <sup>2</sup>
	eg 0.7-3.5 kgf/cm <sup>2</sup>	
	30 min @ 90°C	11 min @ 165°C
	30 min up to 160°C	
Post cure	30 min @ 160°C	
	8 hours @ 160°C	24 hours @ 150°C
	5 hours @ 190°C	24 hours @ 180°C
	2 hours @ 260°C	2 hours @ 260°C
	2 hours @ 315°C	2 hours @ 315°C



**Mechanical properties of NKP1983 laminates**

The following results are representative of laboratory data on 3 mm laminates made to conform to the requirements of Grade A and Grade B of MIL-R-9299C. Laminates were made using high silica glass cloth prepreps at laminating pressure of 14-21 kgf/cm<sup>2</sup>.

	NKP1983	
	Strength	Modulus of Elasticity
FLEXURAL, FLATWISE (lbf/in <sup>2</sup> )	21.000	2.6 x 10 <sup>6</sup>
ULTIMATE TENSILE STRENGTH (lbf/in <sup>2</sup> )	12.000	2 x 10 <sup>6</sup>
ULTIMATE COMPRESSIVE STRENGTH EDGEWISE (lbf/in <sup>2</sup> )	35.000	-