

V-303 Polyimide Prepreg

Nelcote® V-303 is non-MDA condensation polyimide prepreg with a service temperature of 600°F.

Key Features & Benefits

- 600°F maximum service temperature
- Good electrical properties for RF applications

Product Forms

- Available on a wide variety of reinforcements, including fiberglass, quartz and carbon
- Solution coated fabrics up to 60 inches wide
- Compatible with Autoclave or Press Molding processes

Applications / Qualifications

- Radomes
- Bearings
- Insulation

Global Availability

For Information about Park's materials:

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Park's Advanced Composite Materials

Technical Datasheet Processing Guidelines

V-303 Polyimide Prepregs

Prepreg Physical Properties

Reinforcement	7781 E-glass
Fabric Area Weight (gsm)	300
Prepreg Resin Content (%)	29 - 35
Volatiles (550°F, 10 min) (%)	15 - 25
Flow (350°F, 50 psi) (%)	25 - 35
Gel Time (350°F) (sec)	85 - 95

Prepreg Storage Life

Out Life: 30 days @ 70°F
Shelf Life: 3 months @ 40°F
6 months @ 0°F

Note: The following guidelines are provided to assist Nelcote material users with general recommendations for successful processing. The recommendations are for general review purposes only and process adjustments may be required to achieve optimum results in your specific manufacturing environment.

Autoclave Cure Cycle

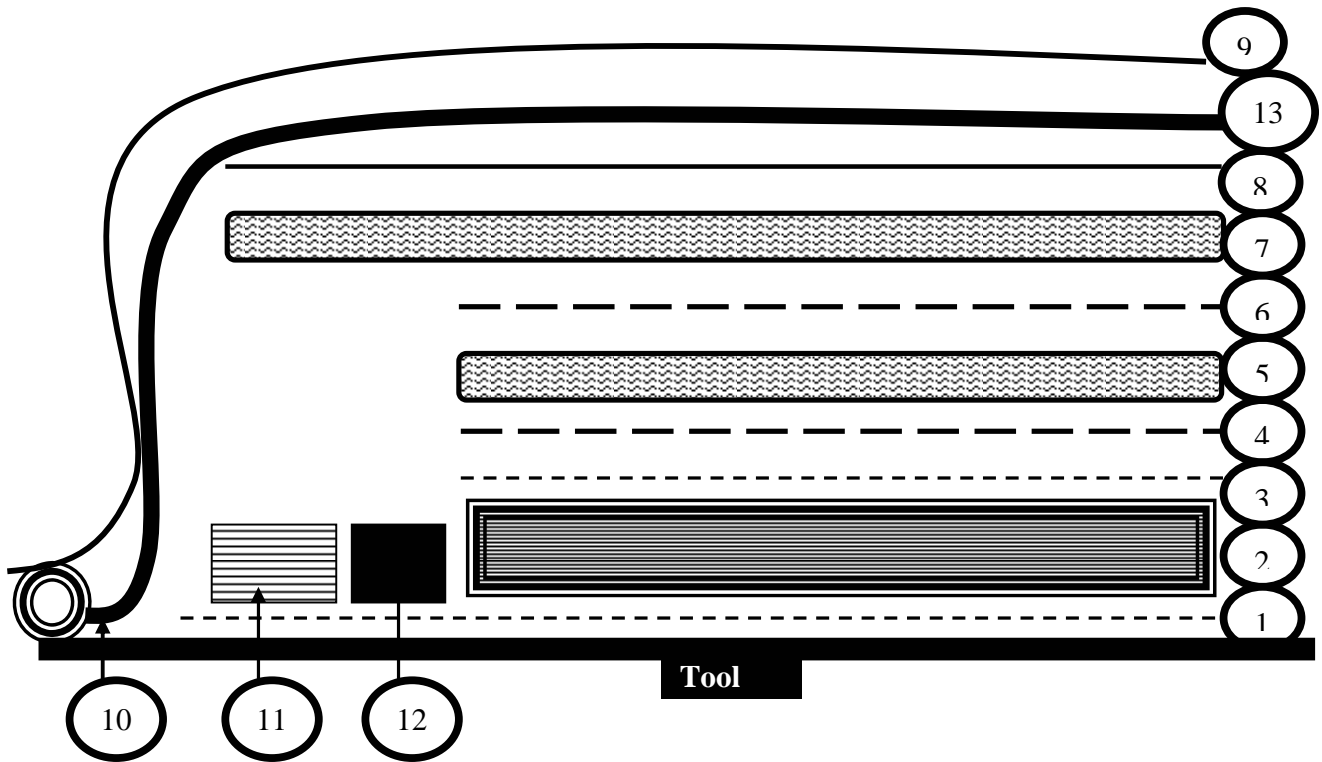
- Apply full vacuum, 27" minimum
- Heat to 160 ±5 °F at 1°F/min maximum
- Hold 1 hour at 160 ±5 ° F
- Heat to 230 ±5 °F at 1°F/min maximum
- Hold 2 hours at 230 ±5 ° F
- Heat to 270 ±5 °F at 1°F/min.
- Apply 45 psi and hold 2 hours at 270 ±5 °F
- Heat 3°F/min to 350 ±5 °F
- Hold 2 hour at 350±5° F
- Cool under pressure and vacuum to less than 150°F and remove part.

Oven post cure (free standing):

- 1 hour at 350±5°F
- 2 hours at 400±5°F
- 2 hours at 450±5°F
- 2 hours at 500±5°F
- 2 hours at 550±5°F
- 2 hours at 600±5°F

Note: There must be multiple vacuum ports on the lay-up to allow maximum efficiency in removing volatiles. Vacuum hoses should be 3/8" diameter minimum. Preferably, there should be a cold trap on the vacuum lines between the part and the vacuum pump to prevent degradation of the pump oil.

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1. Peel ply or porous Teflon coated glass, 1" larger than part
2. V-303 lay-up
3. Peel ply or porous Teflon coated glass, same size as part
4. Perforated release film, holes on 3" centers
5. Glass bleeder cloth, such as 7500 tooling cloth or 7781 [one ply bleeder for every 2-3 plies of prepreg]
6. Perforated release film, holes on 3" centers
7. Glass bleeder cloth, such as 7500 tooling cloth or 7781, 3 plies
8. Non-Porous Teflon
9. Vacuum bag
10. Bag Sealant
11. Edge breather -3plies of tooling cloth
12. Mold released steel dams – optional (not required)
13. Breather N-10

All test data provided are typical values and not intended to be specification values. For review of critical specification tolerances, please contact a Nelicote representative directly. Park reserves the right to change these typical values as a natural process of refining our testing equipment and techniques.

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Technical Datasheet

V-303 Polyimide Prepregs

Laminate Physical / Mechanical Properties

Reinforcement	7781 E-glass
Tensile Strength, 0° (Ksi) 75°F Dry ASTM-D-638 Type 1	61
Tensile Modulus, 0° (Msi) 75°F Dry ASTM-D-638 Type 1	3.7
Compressive Strength (Ksi) 75°F Dry ASTM-D-695	59
Compressive Modulus (Msi) 75°F Dry ASTM-D-695	4.1
Flexural Strength (Ksi) 75°F Dry ASTM-D-790	72
Flexural Modulus (Msi) 75°F Dry ASTM-D-790	3.4
Short Beam Shear (Ksi) 75°F Dry ASTM-D-790	4.1
Glass Transition by DMA	792°F / 422°C
Laminate Density	1.74

Park Electrochemical Corp. is a global advanced materials company which develops and manufactures Nelco® high-technology digital and RF/microwave printed circuit materials, Nelcote® advanced composite materials and Nova™ aerospace structures.

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