Selector Guide

This Selector Guide is a quick index of our standard resins and reinforcements. Product data sheets that provide detailed information about specific prepreg systems are available on the web at
www.parkelectro.com

PARK ELECTROCHEMICAL CORP.
Advanced Material Technologies

Nelcote™ Advanced Composite Prepregs for Critical Applications

Aircraft primary and secondary structures, interiors, VLJs, UAVs

Ablative materials for rocket nozzles, motors and heat shields and thermal insulation

RF and microwave materials for radomes, reflectors and signature control structures.

Nelcote™ Advanced Composite Materials

Application: Aircraft Primary and Secondary Structures

Materials Features and Applications	Reinforcements --- Product Forms	Cure Temp °C / °F	Dry Tg by DMA °C / °F	Autoclave Cure	Vacuum Cure	Press Molding
E-761 250°F (125°C) Cure Epoxy Prepreg Self adhesive prepreg for sandwich applications. Flame retardant (per FAR25.853) with good RF properties. Wide process latitude. Wet service temperature up to 160°F *Applications: Aircraft and mass-transit interiors, Aircraft structures, Radomes*	Fiberglass, Carbon, Aramid (including Kevlar®), Spectra®, Quartz (including Astroquartz) --- Fabric	120 / 250	115 / 240	X	X	X
E-765 250°F (125°C) Cure Epoxy Prepreg Toughened epoxy for aerospace structures. Wide processing window. Wet service temperature up to 180°F. FAA accepted AGATE design allowables database available *Applications: Aircraft primary and secondary structures, Radomes*	Fiberglass, Carbon, Spectra®, Quartz (including Astroquartz) --- Fabric, Uni-tape	120-149 250-300	165 / 330	X	X	X
E-746 350°F (180°C) Cure Epoxy Prepreg Modified epoxy resin system. Excellent mechanical properties after long-term high temperature exposure. Good RF properties. Meets requirement of Mil-R-9300B Type II. Service temperatures up to 500°F after post-cure *Applications: Aircraft structures, Radomes, Nacelles, Inlet ducts, Fairings*	Fiberglass, Quartz (including Astroquartz) --- Fabric	177 / 350	170 / 340	X		
E-752 350°F (180°C) Cure Epoxy Prepreg Tough, 350°F cure system designed for aerospace primary structures. High service temperature and moisture resistance. Wet service temperature up to 250°F. FAA approved NCAMP design allowables database in process. *Applications: Aircraft structures*	Fiberglass, Carbon --- Fabric, Uni-tape	132-185 270-365	190 / 375	X	X	X

Application: Aircraft and Mass Transit Interiors

F-529 Halogen-Free Phenolic Prepreg Halogen-free prepreg for interior applications. Excellent FST and heat-release properties. White appearance after cure. Self-adhesive for sandwich structures *Applications: Aircraft and mass-transit interiors*	Fiberglass, Carbon --- Fabric	120-149 250-300	N/A	X	X	X
E-761 250°F (125°C) Cure Epoxy Prepreg Self adhesive prepreg for sandwich applications. Flame retardant (per FAR25.853) with good RF properties. Wide process latitude. Wet service temperature up to 160°F *Applications: Aircraft and mass-transit interiors, Aircraft structures, Radomes*	Fiberglass, Carbon, Aramid (including Kevlar®), Spectra®, Quartz (including Astroquartz) --- Fabric	120 / 250	115 / 240	X	X	X
E-766B 250°F (125°C) Cure Epoxy Prepreg Toughened, low tack epoxy. Self-adhesive prepreg for sandwich applications. Flame retardant. Controlled flow properties. Service temperature up to 160°F *Applications: Sandwich panels, Radomes*	Fiberglass, Carbon, Aramid (including Kevlar®) --- Fabric	120-149 250-300	93 / 200	X	X	X

Application: High Temperature and Specialty

V-303 Non-MDS Polyimide Prepreg Non-MDA condensation polyimide resin system. Very high service temperature *Applications: Aircraft structures, Radomes*	Fiberglass, Quartz (including Astroquartz), Carbon --- Fabric	177 / 350	315 / 600	X		X
V-341 Polybutidiene Prepreg Very low loss prepreg for critical RF applications. Self adhesive for foam core sandwich panels. Excellent chemical and fungus resistance *Applications: High performance radomes, Reflectors, Antennas*	Fiberglass, Quartz (including Astroquartz) --- Fabric	177 / 350	93 / 200	X		X
V-376 Cyanate Ester Excellent RF properties (low loss). Low moisture absorption. Self adhesive prepreg for sandwich applications. Ideal alternative to BMI and polyimide systems *Applications: High performance radomes, Reflectors, Antennas*	Fiberglass, Quartz (including Astroquartz) --- Fabric	177 / 350	204 / 400	X		X
S-860 Silicone Prepreg Silicone resin system with excellent high temperature properties *Applications: High performance radomes*	Fiberglass --- Fabric	177 / 350	260 / 500	X		X

Nelcote™ Advanced Composite Materials

Application: Phenolic Ablative

Features	Reinforcements --- Product Forms	Cure Temp °C / °F	Dry Tg by DMA °C / °F	Autoclave Cure	Vacuum Cure	Press Molding
F-502 Phenolic Ablative Prepreg Combines high-strength and ablative properties for demanding applications. Low thermal expansion *Applications: Ablative rocket nozzles, Ducting, Secondary structures*	Fiberglass, Carbon, Quartz (including Astroquartz) --- Fabric, CMC / Biased Tape	163 / 325	260 / 500	X		X
F-554 Phenolic / Silica Ablative Prepreg High purity silica filled resin system coated on commercial or aerospace grade silica fabric. Combines higher strength and ablative properties for demanding applications. Low thermal expansion *Applications: Ablative rocket nozzles, Combustion chambers, Heat shields, Rocket motor throat sections, Exhaust gas management*	Silica --- Fabric, CMC / Biased Tape	127 / 260	260 / 500	X		X
F-555 Phenolic / Carbon Ablative Prepreg Carbon-loaded resin system. Combines high-strength and ablative properties for demanding applications. Low thermal expansion. Also available in a low density version *Applications: Ablative rocket nozzles, Combustion chambers, Heat shields, Rocket motor throat sections*	Carbonized Rayon (including C2 and NARC) --- Fabric, CMC / Biased Tape	177 / 350	260 / 500	X		X
F-557 Phenolic / Silica Ablative Prepreg High purity Silica filled resin system coated on commercial or aerospace grade silica fabric. Combines higher strength and ablative properties for demanding applications. Low thermal expansion *Applications: Ablative rocket nozzles, Combustion chambers, Heat shields, Rocket motor throat sections, Exhaust gas management*	Silica --- Fabric, CMC / Biased Tape	163 / 325	260 / 500	X		X
F-562 Modified Phenolic Ablative Prepreg Elastomer modified resin system coated on silica or carbonized rayon *Applications: Ablative rocket nozzles, Combustion chambers, Heat shields, Rocket motor throat sections, Exhaust gas management*	Carbonized Rayon (including C2 and NARC), Silica --- Fabric	163 / 325	260 / 500	X		X

Application: Polyester Prepreg

P-600 Polyester Prepreg General purpose polyester resin system. Non-styrenated / Low VOC. Good alternative to wet-layup processing *Applications: Aircraft structures, Industrial parts*	Fiberglass --- Fabric	82-120 180-250	71 / 160	X	X	X
P-601 Polyester Prepreg Polyester resin system designed for Woven roving applications. Non-styrenated / Low VOC. Good alternative to wet-layup processing *Applications: Radomes*	Fiberglass (18 oz woven roving), Polyester --- Fabric	82-120 180-250	71 / 160	X	X	X
P-650M Polyester Prepreg Modified diallyphthallate resin system. Excellent wet electrical properties. Non-styrenated / Low VOC *Applications: Aircraft structures, Radomes, Antenna, Embossing die fabrication*	Fiberglass --- Fabric	120-149 250-300	120 / 250	X	X	X
P-650R Polyester Prepreg Designed for optical clarity. Good mechanical and electrical properties. Non-styrenated / Low VOC *Applications: Optical clarity requirements, Aircraft lighting, etc.*	Fiberglass --- Fabric	120-149 250-300	120 / 250	X	X	X
P-670F Polyester Prepreg High temperature service. Flame retardant. Excellent electrical and mechanical properties. Non-styrenated / Low VOC *Applications: Aircraft structures, Radomes, Tooling*	Fiberglass --- Fabric	120-149 250-300	120 / 250	X	X	X
P-670I Polyester Prepreg High temperature service. Flame retardant. Excellent electrical and mechanical properties. Non-styrenated / Low VOC Antimony free *Applications: Aircraft structures, Radomes, Tooling*	Fiberglass --- Fabric	120-149 250-300	120 / 250	X	X	X

Nelcote™ RF / Microwave Prepreg Systems

Electromagnetic and Thermal Properties

Resin/Reinforcement	Cure Temp. ºF (ºC)	Dielectric Constant X-Band*	Loss Tangent X-Band*	Service Temp. ºF (ºC)
V-341 Polybutadiene / Quartz	350 (177)	3.1	0.001	200 (93)
V-376 Cyanate Ester / Quartz	350 (177)	3.2	0.005	400 (204)
V-376 Cyanate Ester / Fiberglass	350 (177)	4.0	0.011	400 (204)
E-761 Epoxy / Quartz	250 (121)	3.4	0.009	200 (93)
E-761 Epoxy / Spectra®	225 (107)	2.7	0.004	180 (82)
E-761 Epoxy / Fiberglass	250 (121)	4.2	0.013	200 (93)
E-746 Hi-Temp. Epoxy / Quartz	350 (177)	3.6	0.012	500 (260)
E-746 Hi-Temp. Epoxy / Fiberglass	350 (177)	4.2	0.016	500 (260)
E-765 Epoxy / Quartz	250 (121)	3.4	0.015	275 (135)
E-765 Epoxy / Fiberglass	250 (121)	4.5	0.020	275 (135)
P-670I Polyester / Fiberglass	250 (121)	4.0	0.014	250 (120)
P-615 SuperVue / Spectra	230 (110)	2.4	0.004	160 (71)
S-860 Silicone / Fiberglass	350 (177)	4.2	0.013	500 (260)

** Nominal electrical values, subject to fiber volume and test technique.*

Nelcote™ FAA Accepted Design Allowable Databases

Resin	Reinforcement	FAW (gsm)	CPT in. (mm)	FAA Database
E-765	3K Plain Weave T300 Carbon	195	0.009 (0.23)	AGATE
	6K Five Harness T300 Carbon	370	0.016 (0.41)	AGATE
	T700 Unidirectional Carbon	150	0.005 (0.13)	AGATE
	7781 Fiberglass	295	0.009 (0.23)	AGATE
E-752	3K Plain Weave G30-500 Carbon	195	0.009 (0.23)	NCAMP*
	AS7 Unidirectional Carbon	145	0.005 (0.13)	NCAMP*

** Full data release expected Q3 2008*

Manufacturing Aids

PeelCote® — Resin coated for use as first ply against mold surface, Reduces finish labor
Applications: Improve laminate surface, Prep for bonding/paint

CoreFix® — Disposable prepreg used to stabilize honeycomb materials during handling and machining. Several advantages versus traditional prepregs and double-backed tapes
Applications: Precision honeycomb machining aid

Important Notice:

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