Fast Cure & Halogen Free FR Resin

FC903FR

HANKUK CARBON

FC903FR is a 150°C 4 minute curable non-halogen epoxy resin system. It has a flame retardant property satisfying UL 94 V-0. This resin system is particularly suitable for use in automotive exterior and electronics housing composite part manufacturing with high production rate.

COMPOSITE PROPERTIES

GLASS CLOTH

PROPERTY	EWR400	METHOD
0°, Tensile Strength	478 MPa	ASTM D 3039
0°, Tensile Modulus	24 GPa	
90°, Tensile Strength	387 MPa	
90°, Tensile Modulus	23 GPa	
0°, Compressive Strength	518 MPa	ASTM D 3410
0°, Compressive Modulus	25 GPa	
90°, Compressive Strength	455 MPa	
90°, Compressive Modulus	24 GPa	
0°, Flexural Strength	719 MPa	ASTM D 790
0°, Flexural Modulus	25 GPa	
In-plane Shear strength(G12)	78 MPa	ASTM D 3518
In-plane Shear 5% strength(G12)	59 MPa	
In-plane Shear modulus(G12)	3.6 GPa	
ILSS	50 MPa	SACMA 8R-94

※ The prepreg for mechanical testing is the glass cloth prepreg (FAW:400 gsm, R/C:40±2 wt.%).

THERMAL PROPERTIES

PROPERTY	VALUE
Tg by DMA, ℃	145

※ Tg defined by DMA after curing 15 minutes at 150℃

※ Thermal testing was measured by DMA at 40-250℃, 5℃/min

CURING CYCLE

PRESS MOLDING

Thickness of the parts	1 ~ 2mm
Cure process	Hot-in, Hot-out Press
Cure Pressure	10 ~ 20bar
Mold temperature	150℃
Cure time	4min

※ It may be necessary to optimize the pressure and time according to thickness of the parts.

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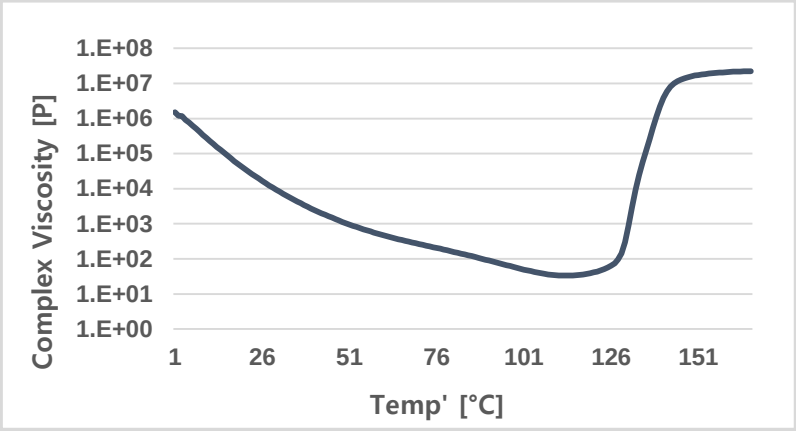
RHEOLOGY

HEATING RATE	MINIMUM VISCOSITY	TEMPERATURE AT MINIMUM VISCOSITY
3℃/min	33 Poise (3.3 Pa.s)	110℃ (230℉)



SHELF LIFE

STORAGE TEMPERATURE	SHELF LIFE
Room Temperature +25℃	1 month
Frozen -18℃	12 month

HANDING & USE

Prepreg which is impregnated with FC903FR resin system must be stored in a freezer. When material is removed from the freezer, it is essential that the roll be allowed to thaw and reach room temperature before the plastic bag is opened. For example, the thaw time for a 20 linear meter roll taken from -18℃(0℉)storage into a 21℃(70℉) room is typically between 4 and 6 hours. Condensation may form on the surface of the material if it is not fully thawed. Moisture within a curing laminate may be detrimental to final part quality and appearance. When materials are returned to the freezer, they must be resealed to prevent ingress of moisture

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