High Tg Resin System

B3HT

HANKUK CARBON

B3HT resin system is suitable for a composite material requiring high thermal properties. In particular, the Wet-Tg performance is excellent. B3HT resin system is very versatile and allows a range of cure temperature from 130℃ up to 180℃.

COMPOSITE PROPERTIES

12K Plain Weave

PROPERTY		T700S 12K Plain	METHOD
Tensile Strength	RT	882 MPa	ASTM D 3039
Tensile Modulus	RT	67 GPa	
Compressive Strength	RT	784 MPa	SACMA 1R-84
	ETW	545 MPa	
Compressive Modulus	RT	62 GPa	
	ETW	61 GPa	
In-plane Shear Strength	RT	92 MPa	ASTM D 5379
In-plane Shear Modulus	RT	4 GPa	
G_{IC}(DCB), in-lbf/in^2	RT	525 J/m^2	ASTM D 5528
G_{IIC}(ENF), in-lbf/in^2	RT	876 J/m^2	ASTM D 6671
CAI 270 in-lbf impact level	RT	166 MPa	ASTM D 7136

※ The prepreg for mechanical testing is the carbon fabric prepreg (FAW:600 gsm, R/C:39±2 wt.%).

※ ETW : 82℃ Ambient, Conditioned at 63℃ /85% RH until equilibrium.

THERMAL PROPERTIES

PROPERTY	VALUE
Tg (dry) by DMA , ℃	162
Tg (wet) by DMA , ℃	153
Tg by DSC, ℃	190

※ Wet condition : Exposure 24hour water boil

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

PROCESSING CONDITION

TEMPERATURE	CURING TIME
130℃	90min

※ B3HT resin system has good flexibility on curing and can be cured at temperature range from 130℃ to 180℃ as shown in below table.

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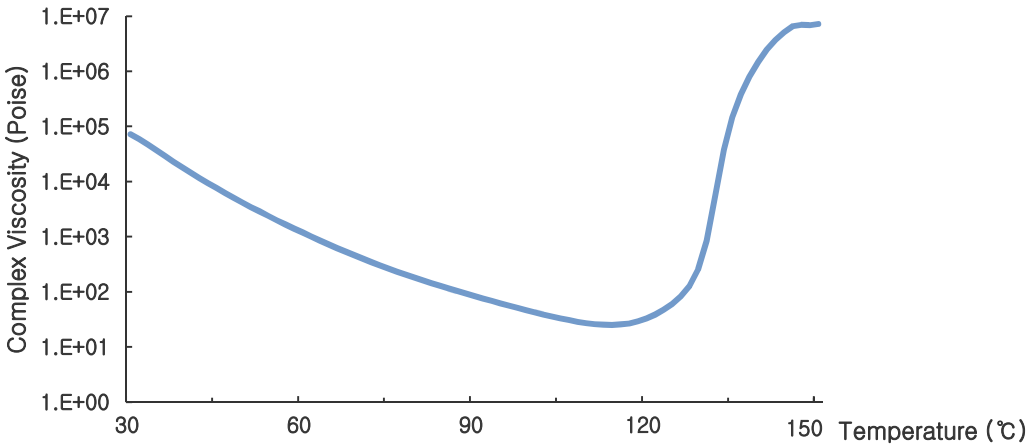
RHEOLOGY

HEATING RATE	MINIMUM VISCOSITY
3℃/min	25 Poise

The viscosity of B3HT was measured according to the rate of temperature rise of 3℃/min.



SHELF LIFE

STORAGE TEMPERATURE	SHELF LIFE
Room Temperature +21℃	1 month
Cold Storage -5℃	3 month
Frozen -21℃	12 month

HANDING & USE

Prepreg which is impregnated with B3HT 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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