

LNP™ NOVEL LOW WARP PRODUCTS

Issue Statement

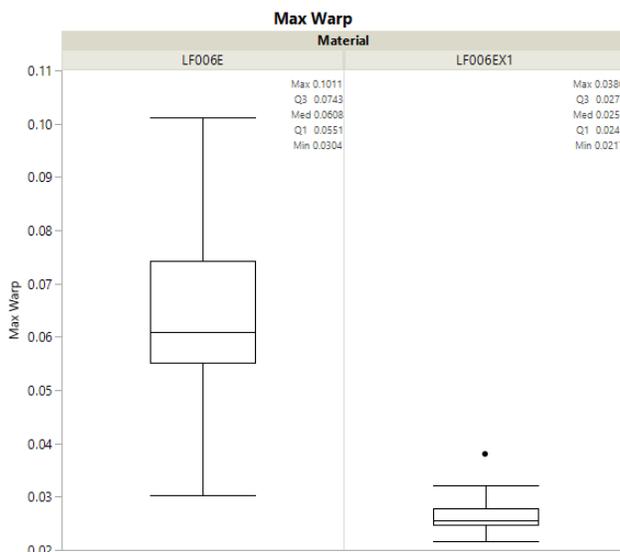
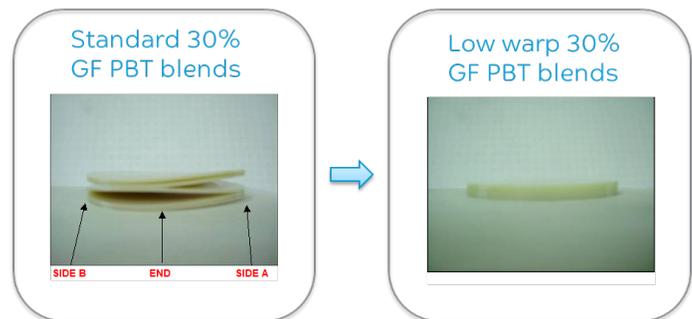
Warpage and lack of dimensional stability often observed at short glass filled products.

LNP Low Warp Technology

Utilize a new technology to improve warpage and dimensional stability, which now is applied to various base resins.

Value Propositions

- Improved dimensional stability
- Similar/improved mechanical property
- Reduced CTE
- Reduced potential secondary processing
- Circular economy-focused solutions available for PCR PC, iQ PBT based resins



LNP THERMOCOMP™ low warp PEEK compounds can provide excellent warpage control and have seen up to 40~70% reduction in warpage from LNP THERMOCOMP LF006EX1 in different environments and under different processing conditions.

Less Warpage

The average max warpage on the existing LNP THERMOCOMP LF006E parts was 0.061” vs. 0.026” for the new LNP THERMOCOMP LF006EX1 parts. LNP THERMOCOMP LF006E parts have up to 230% more warpage on average across the 120 parts measured.

Less Variation

The LNP THERMOCOMP LF006EX1 resin not only has less warpage, but more controlled warpage compared to the LF006E. This is shown by the standard deviation of the max warpage. (0.003” vs. 0.016”).

* The warpage study was conducted at SABIC technology lab. Please contact SABIC representative for detailed study on processing and test results

LNPT™ NOVEL LOW WARP PRODUCTS

LNPT™ Novel Low Warp Products:
Excellent Structural Performance with Low Warpage Performance

	Grade	Description	Potential Applications
PBT	WF006N WF006NIQ WF008NA WF009NA	<ul style="list-style-type: none"> Improved dimensional stability up to 40~60% reduction in warpage LNP chemically upcycled iQ PBT solution available Excellent impact performance Capable NMT application Good surface aesthetics and color ability 	PBT based LNP THERMOTUF™ compounds may be qualified to use in consumer electronics and consumer applications for combination of dimensional stability, mechanical performance and bonding strength.
PC	DF004PSi DX10311 DX10313 D151, D151RC D251, D251U, D251RC, D251RCC D351, D351RC D451, D451RC D551, D551RC	<ul style="list-style-type: none"> Improved dimensional stability Easy flow for thin wall application Offered Eco-FR (non-Br/CL) package Good surface aesthetics & color ability Good impact performance LNP mechanically cycled PCR-PC solution available 	PC based LNP THERMOCOMP™ compounds may be qualified to use in consumer electronics, industrial applications for combination of dimensional stability, thin wall and non-Br/Cl Eco FR systems.
PEI	EF004XXP	<ul style="list-style-type: none"> Improved dimensional stability High heat performance Good flow & chemical resistance 	PEI based LNP THERMOCOMP™ compound may be qualified to use in consumer electronics for combination of high heat and mechanical performance.
PEEK	LF004EX1 LF006EX1 LF008EX1	<ul style="list-style-type: none"> Improved dimensional stability up to 40~70% reduction in warpage High heat performance Good flow & chemical resistance Reduced potential secondary processing 	PEEK based LNP THERMOCOMP compound may be qualified to use in industrial, oil & gas applications for combination of high heat, chemical resistance and mechanical performance.

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