LNP™ THERMOCOMP™ COMPOUND ZKC04

DESCRIPTION

LNP™ THERMOCOMP™ ZKC04 is a compound based on PPO resin containing Mineral Filler, Impact Modifier. Added features of this material include: high dielectric constant (Dk), extremely low dissipation factor (Df), good ductility, and good thermal performance.

TYPICAL PROPERTY VALUES

Revision 20191216

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL			
Tensile Stress, yld, Type I, 50 mm/min	58	MPa	ASTM D 638
Tensile Stress, brk, Type I, 50 mm/min	51	MPa	ASTM D 638
Tensile Strain, yld, Type I, 50 mm/min	9	%	ASTM D 638
Tensile Strain, brk, Type I, 50 mm/min	34	%	ASTM D 638
Tensile Modulus, 50 mm/min	2290	MPa	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	86	MPa	ASTM D 790
Flexural Stress, brk, 1.3 mm/min, 50 mm span	84	MPa	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	2080	MPa	ASTM D 790
Tensile Stress, yield, 50 mm/min	57	MPa	ISO 527
Tensile Stress, break, 50 mm/min	49	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	8.9	%	ISO 527
Tensile Strain, break, 50 mm/min	33	%	ISO 527
Tensile Modulus, 1 mm/min	2240	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	93	MPa	ISO 178
Flexural Stress, break, 2 mm/min	91	MPa	ISO 178
Flexural Modulus, 2 mm/min	2210	MPa	ISO 178
IMPACT			
Izod Impact, notched, 23°C	720	J/m	ASTM D 256
Izod Impact, notched, -20°C	135	J/m	ASTM D 256
Izod Impact, notched 80*10*4 +23°C	55	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*4 -20°C	13	kJ/m²	ISO 180/1A
THERMAL			
HDT, 0.45 MPa, 3.2 mm, unannealed	174	°C	ASTM D 648
HDT, 1.82 MPa, 3.2mm, unannealed	154	°C	ASTM D 648
CTE, -40°C to 150°C, flow	6.5E-05	1/°C	ASTM E 831
CTE, -40°C to 150°C, xflow	9.4E-05	1/°C	ASTM E 831
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	175	°C	ISO 75/Bf
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	155	°C	ISO 75/Af
Relative Temp Index, Elec [1]	65	°C	UL 746B
Relative Temp Index, Mech w/impact [1]	65	°C	UL 746B
Relative Temp Index, Mech w/o impact [1]	65	°C	UL 746B
PHYSICAL			
Mold Shrinkage, flow, 24 hrs	0.7 – 0.9	%	ISO 294
Mold Shrinkage, xflow, 24 hrs	0.7 – 0.9	%	ISO 294
Melt Flow Rate, 300°C/5.0 kgf	11	g/10 min	ASTM D 1238

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Melt Flow Rate, 300°C/10 kgf	33	g/10 min	ASTM D 1238
Density	1.21	g/cm³	ISO 1183
Water Absorption, 23°C/24hrs	0.05	%	ISO 62-1
Melt Volume Rate, MVR at 300°C/5.0 kg	10	cm³/10 min	ISO 1133
Melt Volume Rate, MVR at 300°C/10.0 kg	31	cm³/10 min	ISO 1133
ELECTRICAL			
Dielectric Constant, 1.1 GHz	3.04	-	SABIC method
Dielectric Constant, 1.9 GHz	3.05	-	SABIC method
Dielectric Constant, 5 GHz	3.06	-	SABIC method
Dielectric Constant, 10 GHz	3.06	-	SABIC method
Dissipation Factor, 1.1 GHz	0.0009	-	SABIC method
Dissipation Factor, 1.9 GHz	0.0011	-	SABIC method
Dissipation Factor, 5 GHz	0.0014	-	SABIC method
Dissipation Factor, 10 GHz	0.002	-	SABIC method
FLAME CHARACTERISTICS (1)			
UL Yellow Card Link	E207780-102475263	-	-
UL Recognized, 94HB Flame Class Rating	1	mm	UL 94
INJECTION MOLDING			
Drying Temperature	105	°C	
Drying Time	3 – 5	hrs	
Melt Temperature	295 – 305	°C	
Nozzle Temperature	290 – 295	°C	
Front - Zone 3 Temperature	300 – 305	°C	
Middle - Zone 2 Temperature	290 – 295	°C	
Rear - Zone 1 Temperature	280 – 285	°C	
Mold Temperature	90	°C	
Back Pressure	9	MPa	
Screw Speed	100	rpm	

(1) UL Ratings shown on the technical datasheet might not cover the full range of thicknesses and colors. For details, please see the UL Yellow Card.

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