LNP™ THERMOCOMP™ Compound ZKC04

DESCRIPTION

LNP THERMOCOMP ZKC04 compound is based on Polyphenylene Ether / Polystyrene (PPE/PS) blend containing 20% minerals and impact modifier. Added features of this grade include: High Dielectric Constant (Dk), Extremely Low Dissipation Factor (Df), Good Ductility and Good Thermal Performance.

GENERAL INFORMATION	
Features	Dielectrics, Impact resistant, No PFAS intentionally added
Fillers	Mineral
Polymer Types	Polyphenylene Ether + PS (PPE+PS)
Processing Techniques	Injection Molding

INDUSTRY	SUB INDUSTRY
Automotive	Automotive Interiors
Consumer	Personal Accessory
Electrical and Electronics	Mobile Phone - Computer - Tablets
Industrial	Electrical

TYPICAL PROPERTY VALUES

Revision 20261009

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL [1]			
Tensile Stress, yld, Type I, 50 mm/min	58	MPa	ASTM D638
Tensile Stress, brk, Type I, 50 mm/min	51	MPa	ASTM D638
Tensile Strain, yld, Type I, 50 mm/min	9	%	ASTM D638
Tensile Strain, brk, Type I, 50 mm/min	34	%	ASTM D638
Tensile Modulus, 50 mm/min	2290	MPa	ASTM D638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	86	MPa	ASTM D790
Flexural Stress, brk, 1.3 mm/min, 50 mm span	84	MPa	ASTM D790
Flexural Modulus, 1.3 mm/min, 50 mm span	2080	MPa	ASTM D790
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 [1]			
Izod impact, notched			
23°C	720	J/m	ASTM D256
-20°C	135	J/m	ASTM D256
80*10*4 +23°C	55	kJ/m²	ISO 180/1A

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
80*10*4 -20°C	13	kJ/m²	ISO 180/1A
THERMAL [1]			
HDT, 0.45 MPa, 3.2 mm, unannealed	174	°C	ASTM D648
HDT, 1.82 MPa, 3.2mm, unannealed	154	°C	ASTM D648
CTE, -40°C to 150°C, flow	6.5E-05	1/°C	ASTM E831
CTE, -40°C to 150°C, xflow	9.4E-05	1/°C	ASTM E831
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 [2]	65	°C	UL 746B
Relative Temp Index, Mech w/impact [2]	65	°C	UL 746B
Relative Temp Index, Mech w/o impact [2]	65	°C	UL 746B
PHYSICAL [1]			
Mold Shrinkage, flow [3]	0.7 – 0.9	%	SABIC method
Mold Shrinkage, xflow [3]	0.7 – 0.9	%	SABIC method
Melt Flow Rate			
300°C/5.0 kgf	11	g/10 min	ASTM D1238
300°C/10 kgf	33	g/10 min	ASTM D1238
Density	1.21	g/cm³	ISO 1183
Water Absorption, (23°C/24hrs)	0.05	%	ISO 62-1
Melt Volume Rate			
300°C/5.0 kg	10	cm³/10 min	ISO 1133
300°C/10.0 kg	31	cm³/10 min	ISO 1133
ELECTRICAL [1]			
Dielectric Constant			
1.1 GHz	3.04	-	SABIC method
1.9 GHz	3.05	-	SABIC method
5 GHz	3.06	-	SABIC method
10 GHz	3.06	-	SABIC method
Dissipation Factor			
1.1 GHz	0.0009	-	SABIC method
1.9 GHz	0.0011	-	SABIC method
5 GHz	0.0014	-	SABIC method
10 GHz	0.002	-	SABIC method
FLAME CHARACTERISTICS [2]			
UL Yellow Card Link	E207780-102475263	-	-
UL Recognized, 94HB Flame Class Rating	1	mm	UL 94
INJECTION MOLDING [4]			
Drying Temperature	105	°C	
Drying Time	3 – 5	Hrs	
Melt Temperature	295 – 320	°C	
Nozzle Temperature	290 – 320	°C	
Front - Zone 3 Temperature	300 – 320	°C	
Middle - Zone 2 Temperature	290 – 310	°C	
Rear - Zone 1 Temperature	280 – 300	°C	
Mold Temperature	90 – 120	°C	

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Back Pressure	0.3 – 0.9	MPa	
Screw Speed	50 – 150	rpm	

(1) The information stated on Technical Datasheets should be used as indicative only for material selection purposes and not be utilized as specification or used for part or tool design.

(2) 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.

(3) Measurements made from laboratory test coupon. Actual shrinkage may vary outside of range due to differences in processing conditions, equipment, part geometry and tool design. It is recommended that mold shrinkage studies be performed with surrogate or legacy tooling prior to cutting tools for new molded article.

(4) Injection Molding parameters are only mentioned as general guidelines. These may not apply or may need adjustment in specific situations such as low shot sizes, large part molding, thin wall molding and gas-assist molding.

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