LNP™ THERMOCOMP™ COMPOUND ZKC0CXXD

DESCRIPTION

LNP THERMOCOMP ZKC0CXXD compound is based on Polyphenylene Ether / Polystyrene (PPE/PS) blend containing minerals and impact modifier. Added features of this grade include: High Dielectric Constant (Dk), Extremely Low Dissipation Factor (Df), and Good Thermal Performance.

GENERAL INFORMATION	
Features	Dielectrics, Low Moisture Absorption, Dimensional stability, No PFAS intentionally added
Fillers	Mineral
Polymer Types	Polyphenylene Ether + PS (PPE+PS)
Processing Techniques	Injection Molding

INDUSTRY	SUB INDUSTRY
Automotive	Automotive Interiors
Electrical and Electronics	Wireless Communication

TYPICAL PROPERTY VALUES

Revision 20241021

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL [1]			
Tensile Stress, yld, Type I, 5 mm/min	72	MPa	ASTM D638
Tensile Stress, brk, Type I, 5 mm/min	71	MPa	ASTM D638
Tensile Strain, yld, Type I, 5 mm/min	2.7	%	ASTM D638
Tensile Strain, brk, Type I, 5 mm/min	3.1	%	ASTM D638
Tensile Modulus, 5 mm/min	5000	MPa	ASTM D638
Flexural Strength, 1.3 mm/min, 50 mm span	127	MPa	ASTM D790
Flexural Modulus, 1.3 mm/min, 50 mm span	4690	MPa	ASTM D790
Tensile Stress, yield, 5 mm/min	72	MPa	ISO 527
Tensile Stress, break, 5 mm/min	69	MPa	ISO 527
Tensile Strain, yield, 5 mm/min	2.8	%	ISO 527
Tensile Strain, break, 5 mm/min	3.1	%	ISO 527
Tensile Modulus, 1 mm/min	5000	MPa	ISO 527
Flexural Strength, 2 mm/min	116	MPa	ISO 178
Flexural Modulus, 2 mm/min	4800	MPa	ISO 178
IMPACT [1]			
Izod Impact, notched, 23°C	57	J/m	ASTM D256
Izod Impact, notched, -30°C	46	J/m	ASTM D256
Izod Impact, unnotched, 23°C	478	J/m	ASTM D4812
Izod Impact, notched 80*10*4 +23°C	6.4	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	4.1	kJ/m²	ISO 180/1A
Izod Impact, unnotched 80*10*4 +23°C	35	kJ/m²	ISO 180/1U
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	5.5	kJ/m²	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80*10*4 sp=62mm	3.1	kJ/m²	ISO 179/1eA

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Charpy 23°C, Unnotch Edgew 80*10*4 sp=62mm	36.5	kJ/m²	ISO 179/1eU
THERMAL [1]			
HDT, 0.45 MPa, 3.2 mm, unannealed	161	°C	ASTM D648
HDT, 1.82 MPa, 3.2mm, unannealed	151	°C	ASTM D648
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	160	°C	ISO 75/Bf
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	151	°C	ISO 75/Af
CTE			
-40°C to 40°C, flow	5.3E-5	1/°C	ASTM E831
-40°C to 40°C, xflow	5.3E-5	1/°C	ASTM E831
-40°C to 90°C, flow	5.4E-5	1/°C	ASTM E831
-40°C to 90°C, xflow	5.6E-5	1/°C	ASTM E831
PHYSICAL [1]			
Specific Gravity	1.9	-	ASTM D792
Water Absorption, (23°C/24hrs)	0.08	%	ISO 62-1
Moisture Absorption, (23°C/50% RH/24hrs)	0.02	%	ISO 62-4
Melt Flow Rate, 300°C/5.0 kgf	9.6	g/10 min	ASTM D1238
Melt Volume Rate, MVR at 300°C/5.0 kg	5.8	cm³/10 min	ISO 1133
Mold Shrinkage, flow [2]	0.6 – 0.8	%	SABIC method
Mold Shrinkage, xflow [2]	0.6 – 0.8	%	SABIC method
ELECTRICAL [1]			
Dielectric Constant, 1.1 GHz	6.1	-	SABIC method
Dissipation Factor, 1.1 GHz	0.0008	-	SABIC method
Dielectric Constant, 1.9 GHz	6.1	-	SABIC method
Dissipation Factor, 1.9 GHz	0.0013	-	SABIC method
Dielectric Constant, 5 GHz	6.2	-	SABIC method
Dissipation Factor, 5 GHz	0.0018	-	SABIC method
INJECTION MOLDING [3]			
Drying Temperature	105 – 120	°C	
Drying Time	3 – 5	Hrs	
Melt Temperature	290 – 320	°C	
Nozzle Temperature	290 – 320	°C	
Front - Zone 3 Temperature	290 – 320	°C	
Middle - Zone 2 Temperature	280 – 310	°C	
Rear - Zone 1 Temperature	270 – 300	°C	
Mold Temperature	90 – 120	°C	
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) 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.

(3) 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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