LNP™ THERMOCOMP™ COMPOUND DX14354X

DESCRIPTION

LNP Thermocomp compound DX14354X is an improved flow, colorable compound based on PC copolymer resin developed for applications that require Laser Direct Structuring (LDS) for antenna, or electronic circuit manufacturing. Thermocomp compound DX14354X helps customers to improve productivity with stable plating and RF performance, excellent impact strength and surface finish.

TYPICAL PROPERTY VALUES

Revision 20191217

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL			
Tensile Stress, yld, Type I, 50 mm/min	54	MPa	ASTM D 638
Tensile Stress, brk, Type I, 50 mm/min	49	MPa	ASTM D 638
Tensile Strain, yld, Type I, 50 mm/min	5	%	ASTM D 638
Tensile Strain, brk, Type I, 50 mm/min	70	%	ASTM D 638
Tensile Modulus, 50 mm/min	2500	MPa	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	85	MPa	ASTM D 790
Flexural Stress, brk, 1.3 mm/min, 50 mm span	83	MPa	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	2500	MPa	ASTM D 790
Tensile Stress, yield, 50 mm/min	54	MPa	ISO 527
Tensile Stress, break, 50 mm/min	47	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	5	%	ISO 527
Tensile Strain, break, 50 mm/min	80	%	ISO 527
Tensile Modulus, 1 mm/min	2460	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	86	MPa	ISO 178
Flexural Modulus, 2 mm/min	2560	MPa	ISO 178
IMPACT			
Izod Impact, notched, 23°C	750	J/m	ASTM D 256
Izod Impact, notched 80*10*3 +23°C	60	kJ/m²	ISO 180/1A
THERMAL			
Vicat Softening Temp, Rate A/50	128	°C	ASTM D 1525
Vicat Softening Temp, Rate B/50	128	°C	ASTM D 1525
HDT, 1.82 MPa, 3.2mm, unannealed	111	°C	ASTM D 648
CTE, -40°C to 40°C, flow	5.7E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, xflow	6.E-05	1/°C	ASTM E 831
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	113	°C	ISO 75/Af
Relative Temp Index, Elec [1]	80	°C	UL 746B
Relative Temp Index, Mech w/impact [1]	80	°C	UL 746B
Relative Temp Index, Mech w/o impact [1]	80	°C	UL 746B
PHYSICAL			
Density	1.29	g/cm³	ASTM D 792
Mold Shrinkage, flow, 24 hrs	0.5 – 0.7	%	ASTM D 955
Mold Shrinkage, xflow, 24 hrs	0.5 – 0.7	%	ASTM D 955
Moisture Absorption (23°C / 50% RH)	0.05	%	ISO 62
Melt Volume Rate, MVR at 260°C/5.0 kg	25	cm³/10 min	ISO 1133

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Melt Volume Rate, MVR at 280°C/2.16 kg	27	cm³/10 min	ISO 1133
Melt Volume Rate, MVR at 280°C/21.6 kg	22	cm³/10 min	ISO 1133
ELECTRICAL			
Volume Resistivity	1.2E+16	Ohm-cm	ASTM D 257
Surface Resistivity	1.2E+16	Ohm	ASTM D 257
Relative Permittivity, 1 GHz	3.1	-	ASTM D 150
Dissipation Factor, 1 GHz	0.006	-	ASTM D 150
Dielectric Constant, 1.1 GHz	3.06	-	SABIC method
Dielectric Constant, 1.9 GHz	3.08	-	SABIC method
Dielectric Constant, 5 GHz	3.08	-	SABIC method
Dissipation Factor, 1.1 GHz	0.0063	-	SABIC method
Dissipation Factor, 1.9 GHz	0.0061	-	SABIC method
Dissipation Factor, 5 GHz	0.0059	-	SABIC method
FLAME CHARACTERISTICS (1)			
UL Yellow Card Link	E207780-102180157	-	-
UL Recognized, 94V-1 Flame Class Rating	≥1	mm	UL 94
AFTER 40 CYCLES, SIMILAR TO USCAR-2, CLASS III			
Tensile Strain, brk, Type I, 50 mm/min	70	%	ASTM D 638
AFTER 40 CYCLES, SIMILAR TO USCAR-2, CLASS IV			
Tensile Stress, brk, Type I, 50 mm/min	44	MPa	ASTM D 638
INJECTION MOLDING			
Drying Temperature	110 – 120	°C	
Drying Time	2 – 4	hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	250 – 270	°C	
Nozzle Temperature	240 – 260	°C	
Front - Zone 3 Temperature	245 – 265	°C	
Middle - Zone 2 Temperature	240 – 255	°C	
Rear - Zone 1 Temperature	230 – 245	°C	
Hopper Temperature	40 – 60	°C	
Mold Temperature	40 – 100	°C	

(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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