LNP™ THERMOCOMP™ COMPOUND D451RC

DESCRIPTION

LNP* Thermocomp* D451RC (experimental grade name as EXTC8484) is a compound based on Recycle Polycarbonate resin containing Glass Fiber, Flame Retardant. Added features of this material include: high modulus, good flatness, good ductility, Non-Brominated & Non-Chlorinated Flame Retardant. Post-Consumer Recycling (PCR) polycarbonate content up to 35%.

TYPICAL PROPERTY VALUES

Revision 20191217

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL			
Flexural Modulus, 1.3 mm/min, 50 mm span	10100	MPa	ASTM D 790
Flexural Stress, yld, 1.3 mm/min, 50 mm span	190	MPa	ASTM D 790
Flexural Stress, brk, 1.3 mm/min, 50 mm span	186	MPa	ASTM D 790
Flexural Modulus, 2 mm/min	10700	MPa	ISO 178
Flexural Stress, yield, 2 mm/min	196	MPa	ISO 178
Flexural Stress, break, 2 mm/min	195	MPa	ISO 178
Tensile Modulus, 5 mm/min	12300	MPa	ASTM D 638
Tensile Stress, brk, Type I, 5 mm/min	145	MPa	ASTM D 638
Tensile Strain, brk, Type I, 5 mm/min	2.0	%	ASTM D 638
Tensile Modulus, 1 mm/min	11800	MPa	ISO 527
Tensile Stress, break, 5 mm/min	140	MPa	ISO 527
Tensile Strain, break, 5 mm/min	1.9	%	ISO 527
IMPACT			
Izod Impact, notched, 23°C	133	J/m	ASTM D 256
Izod Impact, notched, -30°C	115	J/m	ASTM D 256
Izod Impact, unnotched, 23°C	510	J/m	ASTM D 4812
Izod Impact, notched 80*10*4 +23°C	12	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	11	kJ/m²	ISO 180/1A
Izod Impact, unnotched 80*10*4 +23°C	34	kJ/m²	ISO 180/1U
Instrumented Impact Total Energy, 23°C	21	J	ASTM D 3763
THERMAL			
HDT, 1.82 MPa, 3.2mm, unannealed	110	°C	ASTM D 648
HDT, 0.45 MPa, 3.2 mm, unannealed	115	°C	ASTM D 648
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	112	°C	ISO 75/Af
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	118	°C	ISO 75/Bf
Vicat Softening Temp, Rate B/50	121	°C	ISO 306
Vicat Softening Temp, Rate B/120	123	°C	ISO 306
CTE, 23°C to 80°C, flow	1.7E-05	1/°C	ASTM E 831
CTE, 23°C to 80°C, xflow	6.6E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, flow	1.9E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, xflow	5.7E-05	1/°C	ASTM E 831
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

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
PHYSICAL			
Melt Flow Rate, 300°C/1.2 kgf	11	g/10 min	ASTM D 1238
Melt Flow Rate, 300°C/2.16 kgf	23	g/10 min	ASTM D 1238
Melt Flow Rate, 300°C/5.0 kgf	69	g/10 min	ASTM D 1238
Melt Volume Rate, MVR at 300°C/1.2 kg	8	cm³/10 min	ISO 1133
Melt Volume Rate, MVR at 300°C/2.16 kg	17	cm³/10 min	ISO 1133
Melt Volume Rate, MVR at 300°C/5.0 kg	51	cm³/10 min	ISO 1133
Mold Shrinkage, flow, 24 hrs	0.1 – 0.2	%	ASTM D 955
Mold Shrinkage, xflow, 24 hrs	0.1 – 0.2	%	ASTM D 955
Water Absorption, 23°C/24hrs	0.02	%	ISO 62-1
Density	1.52	g/cm³	ASTM D 792
ELECTRICAL			
Dielectric Constant, 1.1 GHz	3.73	-	SABIC method
Dielectric Constant, 1.9 GHz	3.74	-	SABIC method
Dielectric Constant, 5 GHz	3.77	-	SABIC method
Dielectric Constant, 10 GHz	3.79	-	SABIC method
Dissipation Factor, 1.1 GHz	0.0073	-	SABIC method
Dissipation Factor, 1.9 GHz	0.0075	-	SABIC method
Dissipation Factor, 5 GHz	0.0083	-	SABIC method
Dissipation Factor, 10 GHz	0.0084	-	SABIC method
Surface Resistivity	>1.0E+16	Ohm	ASTM D 257
Volume Resistivity	>1.0E+16	Ohm-cm	ASTM D 257
Comparative Tracking Index (UL) {PLC}	3	PLC Code	UL 746A
FLAME CHARACTERISTICS [1]			
UL Yellow Card Link	E207780-103195752	-	-
UL Recognized, 94V-0 Flame Class Rating	≥0.6	mm	UL 94
Glow Wire Ignitability Temperature, 2.0 mm	875	°C	IEC 60695-2-13
Glow Wire Ignitability Temperature, 1.0 mm	875	°C	IEC 60695-2-13
Glow Wire Ignitability Temperature, 1.6 mm	875	°C	IEC 60695-2-13
Glow Wire Flammability Index, 2.0 mm	960	°C	IEC 60695-2-12
Glow Wire Flammability Index, 1.0 mm	960	°C	IEC 60695-2-12
Glow Wire Flammability Index, 1.6 mm	960	°C	IEC 60695-2-12
INJECTION MOLDING			
Drying Temperature	110	°C	
Drying Time	3 – 6	hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	285 – 310	°C	
Nozzle Temperature	285 – 305	°C	
Front - Zone 3 Temperature	280 – 300	°C	
Middle - Zone 2 Temperature	270 – 290	°C	
Rear - Zone 1 Temperature	260 – 280	°C	
Mold Temperature	80 – 110	°C	
Back Pressure	0.1 – 0.3	MPa	
Screw Speed	50 – 90	rpm	

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(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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