LNP™ THERMOCOMP™ Compound D451RCC

DESCRIPTION

LNP™ THERMOCOMP™ COMPOUND D451RCC is a compound based on Recycle Polycarbonate resin containing Glass Fiber, Flame Retardant. Added features of this material include high modulus, good flatness, good impact performance, Non-Brominated & Non-Chlorinated Flame Retardant. Post-Consumer Recycling (PCR) polycarbonate content up to 35%.

GENERAL INFORMATION	
Features	Flame Retardant, Mechanical Recycling, Dimensional stability, High stiffness/Strength
Fillers	Glass Fiber
Polymer Types	Polycarbonate (PC)
Processing Techniques	Injection Molding

INDUSTRY	SUB INDUSTRY
Consumer	Home Appliances, Commercial Appliance
Electrical and Electronics	Electrical Devices and Displays, Electrical Components and Infrastructure

TYPICAL PROPERTY VALUES

Revision 20260416

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL [1]			
Tensile Stress, brk, Type I, 5 mm/min	145	MPa	ASTM D638
Tensile Strain, brk, Type I, 5 mm/min	2.2	%	ASTM D638
Tensile Modulus, 5 mm/min	12100	MPa	ASTM D638
Flexural Strength, 1.3 mm/min, 50 mm span	203	MPa	ASTM D790
Flexural Modulus, 1.3 mm/min, 50 mm span	9820	MPa	ASTM D790
Tensile Stress, break, 5 mm/min	146	MPa	ISO 527
Tensile Strain, break, 5 mm/min	2.2	%	ISO 527
Tensile Modulus, 1 mm/min	12000	MPa	ISO 527
Flexural Strength, 2 mm/min	204	MPa	ISO 178
Flexural Modulus, 2 mm/min	10600	MPa	ISO 178
IMPACT [1]			
Izod Impact, notched, 23°C	146	J/m	ASTM D256
Izod Impact, notched, -30°C	124	J/m	ASTM D256
Izod Impact, unnotched, 23°C	540	J/m	ASTM D4812
Izod Impact, unnotched, -30°C	700	J/m	ASTM D4812
Izod Impact, notched 80*10*3 +23°C	15	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*3 -30°C	13	kJ/m²	ISO 180/1A
Izod Impact, unnotched 80*10*3 +23°C	45	kJ/m²	ISO 180/1U
Izod Impact, unnotched 80*10*3 -30°C	51	kJ/m²	ISO 180/1U
Izod Impact, notched 80*10*4 +23°C	15	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	12	kJ/m²	ISO 180/1A
Izod Impact, unnotched 80*10*4 +23°C	42	kJ/m²	ISO 180/1U

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Izod Impact, unnotched 80*10*4 -30°C	48	kJ/m²	ISO 180/1U
Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm	15	kJ/m²	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80*10*3 sp=62mm	14	kJ/m²	ISO 179/1eA
Charpy 23°C, Unnotch Edgew 80*10*3 sp=62mm	48	kJ/m²	ISO 179/1eU
Charpy -30°C, Unnotch Edgew 80*10*3 sp=62mm	55	kJ/m²	ISO 179/1eU
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	15	kJ/m²	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80*10*4 sp=62mm	13	kJ/m²	ISO 179/1eA
Charpy 23°C, Unnotch Edgew 80*10*4 sp=62mm	45	kJ/m²	ISO 179/1eU
Charpy -30°C, Unnotch Edgew 80*10*4 sp=62mm	54	kJ/m²	ISO 179/1eU
Instrumented Dart Impact Total Energy, 23°C	27	J	ASTM D3763
Instrumented Dart Impact Energy @ peak, 23°C	17	J	ASTM D3763
THERMAL [1]			
HDT, 0.45 MPa, 3.2 mm, unannealed	114	°C	ASTM D648
HDT, 1.82 MPa, 3.2mm, unannealed	110	°C	ASTM D648
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	117	°C	ISO 75/Bf
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	111	°C	ISO 75/Af
CTE, -40°C to 40°C, flow	1.58E-05	1/°C	ASTM E831
CTE, -40°C to 40°C, xflow	5.00E-05	1/°C	ASTM E831
CTE, 23°C to 80°C, flow	1.61E-05	1/°C	ASTM E831
CTE, 23°C to 80°C, xflow	5.88E-05	1/°C	ASTM E831
CTE, -40°C to 40°C, flow	1.66E-05	1/°C	ISO 11359-2
CTE, -40°C to 40°C, xflow	5.21E-05	1/°C	ISO 11359-2
CTE, 23°C to 80°C, flow	1.82E-05	1/°C	ISO 11359-2
CTE, 23°C to 80°C, xflow	6.21E-05	1/°C	ISO 11359-2
Vicat Softening Temp, Rate B/50	118	°C	ISO 306
Vicat Softening Temp, Rate B/120	119	°C	ISO 306
Relative Temp Index, Elec [2]	80	°C	UL 746B
Relative Temp Index, Mech w/impact [2]	80	°C	UL 746B
Relative Temp Index, Mech w/o impact [2]	80	°C	UL 746B
PHYSICAL [1]			
Specific Gravity	1.52	-	ASTM D792
Water Absorption, (23°C/24hrs)	0.02	%	ISO 62-1
Melt Flow Rate			
300°C/1.2 kgf	16	g/10 min	ASTM D1238
300°C/2.16 kgf	33	g/10 min	ASTM D1238
300°C/5.0 kgf	90	g/10 min	ASTM D1238
Melt Volume Rate			
300°C/1.2 kg	12	cm³/10 min	ASTM D1238
300°C/2.16 kg	21	cm³/10 min	ASTM D1238
300°C/5.0 kg	66	cm³/10 min	ASTM D1238
Mold Shrinkage, flow [3]	0.14	%	SABIC method
Mold Shrinkage, xflow [3]	0.25	%	SABIC method
ELECTRICAL [1]			
Surface Resistivity	1.E+16	Ω	ASTM D257
Volume Resistivity	1.E+16	Ω.cm	ASTM D257

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Dielectric Constant			
1.1 GHz	3.71	-	SABIC method
1.9 GHz	3.69	-	SABIC method
5 GHz	3.74	-	SABIC method
10 GHz	3.73	-	SABIC method
Dissipation Factor			
1.1 GHz	0.0068	-	SABIC method
1.9 GHz	0.0072	-	SABIC method
5 GHz	0.0075	-	SABIC method
10 GHz	0.0079	-	SABIC method
FLAME CHARACTERISTICS [2]			
UL Yellow Card Link	E207780-104562814	-	-
UL Recognized, 94V-0 Flame Class Rating	≥0.6	mm	UL 94
INJECTION MOLDING [4]			
Drying Temperature	110	°C	
Drying Time	3 – 6	Hrs	
Drying Time (Cumulative)	12	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	

(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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