LNP™ ELCRIN™ DC0051RC1

DESCRIPTION

LNP ELCRIN COMPOUND DC0051RC1 (experimental grade name as ER017296) is a compound based on Polycarbonate resin containing Carbon Fiber. Added features of this grade include: Flame Retardant, >75% PCR content.

GENERAL INFORMATION	
Features	Mechanical Recycling, Non Cl/Br flame retardant, Carbon fiber filled, Dimensional stability, High stiffness/Strength
Fillers	Carbon Fiber
Polymer Types	Polycarbonate (PC)
Processing Techniques	Injection Molding

INDUSTRY	SUB INDUSTRY
Electrical and Electronics	Mobile Phone - Computer - Tablets

TYPICAL PROPERTY VALUES

Revision 20250812

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL [1]			
Tensile Stress, brk, Type I, 5 mm/min	165	MPa	ASTM D638
Tensile Strain, brk, Type I, 5 mm/min	1.8	%	ASTM D638
Tensile Modulus, 5 mm/min	17500	MPa	ASTM D638
Flexural Strength, 1.3 mm/min, 50 mm span	231	MPa	ASTM D790
Flexural Modulus, 1.3 mm/min, 50 mm span	16800	MPa	ASTM D790
Tensile Stress, break, 5 mm/min	163	MPa	ISO 527
Tensile Strain, break, 5 mm/min	1.7	%	ISO 527
Tensile Modulus, 1 mm/min	18000	MPa	ISO 527
Flexural Strength, 2 mm/min	218	MPa	ISO 178
Flexural Modulus, 2 mm/min	16500	MPa	ISO 178
IMPACT [1]			
Izod Impact, notched, 23°C	50	J/m	ASTM D256
Izod Impact, notched, -30°C	43	J/m	ASTM D256
Izod Impact, unnotched, 23°C	350	J/m	ASTM D4812
Izod Impact, unnotched, -30°C	325	J/m	ASTM D4812
Izod Impact, notched 80*10*3 +23°C	5.9	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*3 -30°C	5.1	kJ/m²	ISO 180/1A
Izod Impact, unnotched 80*10*3 +23°C	23	kJ/m²	ISO 180/1U
Izod Impact, unnotched 80*10*3 -30°C	26	kJ/m²	ISO 180/1U
Izod Impact, notched 80*10*4 +23°C	6.1	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	5.3	kJ/m²	ISO 180/1A
Izod Impact, unnotched 80*10*4 +23°C	27	kJ/m²	ISO 180/1U
Izod Impact, unnotched 80*10*4 -30°C	29	kJ/m²	ISO 180/1U
Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm	5.6	kJ/m²	ISO 179/1eA

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Charpy -30°C, V-notch Edgew 80*10*3 sp=62mm	4.7	kJ/m²	ISO 179/1eA
Charpy 23°C, Unnotch Edgew 80*10*3 sp=62mm	24	kJ/m²	ISO 179/1eU
Charpy -30°C, Unnotch Edgew 80*10*3 sp=62mm	25	kJ/m²	ISO 179/1eU
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	5.9	kJ/m²	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80*10*4 sp=62mm	5	kJ/m²	ISO 179/1eA
Charpy 23°C, Unnotch Edgew 80*10*4 sp=62mm	29	kJ/m²	ISO 179/1eU
Charpy -30°C, Unnotch Edgew 80*10*4 sp=62mm	30	kJ/m²	ISO 179/1eU
Instrumented Dart Impact Total Energy, 23°C	13	J	ASTM D3763
Instrumented Dart Impact Energy @ peak, 23°C	10	J	ASTM D3763
THERMAL [1]			
HDT, 0.45 MPa, 3.2 mm, unannealed	100	°C	ASTM D648
HDT, 1.82 MPa, 3.2mm, unannealed	95	°C	ASTM D648
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	101	°C	ISO 75/Bf
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	96	°C	ISO 75/Af
CTE, -40°C to 40°C, flow	7.3E-06	1/°C	ASTM E831
CTE, -40°C to 40°C, xflow	6.2E-05	1/°C	ASTM E831
CTE, -40°C to 40°C, flow	7.4E-06	1/°C	ISO 11359-2
CTE, -40°C to 40°C, xflow	6.4E-05	1/°C	ISO 11359-2
Vicat Softening Temp, Rate B/50	104	°C	ASTM D1525
Vicat Softening Temp, Rate B/120	106	°C	ASTM D1525
Vicat Softening Temp, Rate B/50	104	°C	ISO 306
Vicat Softening Temp, Rate B/120	106	°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]			
Density	1.31	g/cm³	ASTM D792
Melt Volume Rate, MVR at 300°C/1.2 kg	20	cm³/10 min	ISO 1133
Melt Volume Rate, MVR at 300°C/2.16 kg	41	cm³/10 min	ISO 1133
Water Absorption, (23°C/24hrs)	0.09	%	ISO 62-1
Moisture Absorption, (23°C/50% RH/24hrs)	0.03	%	ISO 62-4
Mold Shrinkage, flow [3]	0.2 – 0.3	%	SABIC method
Mold Shrinkage, xflow [3]	0.4 – 0.5	%	SABIC method
ELECTRICAL [1]			
Surface Resistivity	1.0E+06 – 1.0E+07	Ω	ASTM D257
Volume Resistivity	1.0E+07 – 1.0E+08	Ω.cm	ASTM D257
FLAME CHARACTERISTICS [2]			
UL Yellow Card Link	E207780-104753223	-	-
UL Recognized, 94V-0 Flame Class Rating	≥0.8	mm	UL 94
INJECTION MOLDING [4]			
Drying Temperature	70 – 80	°C	
Drying Time	3 – 5	Hrs	
Drying Time (Cumulative)	12	Hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	275 – 330	°C	

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Nozzle Temperature	280 – 320	°C	
Front - Zone 3 Temperature	280 – 320	°C	
Middle - Zone 2 Temperature	270 – 310	°C	
Rear - Zone 1 Temperature	260 – 300	°C	
Mold Temperature	60 – 85	°C	
Back Pressure	0.2 – 0.3	MPa	
Screw Speed	30 – 60	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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