LNP™ ELCRIN™ EXL9414TRCG

DESCRIPTION

LNP ELCRIN EXL9414TRCG resin grade is a 21% PCR(Post Consumer Recycle) that incorporates renewable feedstock through ISCC+ mass-balance certification and contains halogen-free flame retardant polycarbonate featuring transparency, -40 degree C ductility and UL-94 V0 rating for injection molding applications. Excellent impact combined with good flow, all transparent colorability for aesthetics and thin wall flame retardant makes this product an excellent candidate for thin wall applications.

GENERAL INFORMATION	
Features	Flame Retardant, Mechanical Recycling, Bio-Renewable, Transparent/Translucent, Non halogenated flame retardant, Impact resistant, Low temperature impact, No PFAS intentionally added (PCR contains <50ppm total organic fluorine content)
Fillers	Unreinforced
Polymer Types	Polycarbonate (PC)
Processing Techniques	Injection Molding

INDUSTRY	SUB INDUSTRY
Consumer	Home Appliances
Electrical and Electronics	Mobile Phone - Computer - Tablets

TYPICAL PROPERTY VALUES

Revision 20261105

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL [1]			
Tensile Stress, yld, Type I, 50 mm/min	55	MPa	ASTM D638
Tensile Stress, brk, Type I, 50 mm/min	56	MPa	ASTM D638
Tensile Strain, yld, Type I, 50 mm/min	5.6	%	ASTM D638
Tensile Strain, brk, Type I, 50 mm/min	96	%	ASTM D638
Tensile Modulus, 50 mm/min	2110	MPa	ASTM D638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	86	MPa	ASTM D790
Flexural Modulus, 1.3 mm/min, 50 mm span	2160	MPa	ASTM D790
Tensile Stress, yield, 50 mm/min	56	MPa	ISO 527
Tensile Stress, break, 50 mm/min	54	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	5.4	%	ISO 527
Tensile Strain, break, 50 mm/min	95	%	ISO 527
Tensile Modulus, 1 mm/min	2170	MPa	ISO 527
IMPACT [1]			
Izod impact, notched			
23°C	785	J/m	ASTM D256
-30°C	311	J/m	ASTM D256
80*10*3 +23°C	58	kJ/m²	ISO 180/1A
80*10*3 -30°C	34	kJ/m²	ISO 180/1A
Instrumented Dart Impact Total Energy, 23°C	65	J	ASTM D3763
Izod Impact, Unnotched			
80*10*3 +23°C	NB	kJ/m²	ISO 180/1U

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
80*10*3 -30°C	NB	kJ/m²	ISO 180/1U
Charpy 23°C, Unnotch Edgew 80*10*3 sp=62mm	N	kJ/m²	ISO 179/1eU
Charpy -30°C, Unnotch Edgew 80*10*3 sp=62mm	N	kJ/m²	ISO 179/1eU
Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm	64	kJ/m²	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80*10*3 sp=62mm	24	kJ/m²	ISO 179/1eA
THERMAL (1)			
Vicat Softening Temp, Rate A/50	135	°C	ASTM D1525
Vicat Softening Temp, Rate B/50	129	°C	ISO 306
HDT, 1.82 MPa, 3.2mm, unannealed	110	°C	ASTM D648
CTE, -40°C to 95°C, flow	6.70E-05	1/°C	ASTM E831
CTE, -40°C to 95°C, xflow	8.00E-05	1/°C	ASTM E831
Relative Temp Index, Elec (2)	120	°C	UL 746B
Relative Temp Index, Mech w/impact (2)	110	°C	UL 746B
Relative Temp Index, Mech w/o impact (2)	120	°C	UL 746B
PHYSICAL (1)			
Specific Gravity	1.19	-	ASTM D792
Density	1.19	g/cm³	ASTM D792
Melt Flow Rate, 300°C/1.2 kgf	12	g/10 min	ASTM D1238
Melt Volume Rate, MVR at 300°C/1.2 kg	11	cm³/10 min	ISO 1133
Mold Shrinkage, flow, 3.2 mm (3)	0.4 – 0.8	%	SABIC method
Water Absorption, (23°C/saturated)	0.09	%	ISO 62-1
FLAME CHARACTERISTICS (2)			
UL Yellow Card Link	E207780-10258490	-	-
UL Recognized, 94V-0 Flame Class Rating	≥1.5	mm	UL 94
UL Recognized, 94V-2 Flame Class Rating	≥1	mm	UL 94
INJECTION MOLDING (4)			
Drying Temperature	120	°C	
Drying Time	3 – 4	Hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	295 – 315	°C	
Nozzle Temperature	290 – 310	°C	
Front - Zone 3 Temperature	295 – 315	°C	
Middle - Zone 2 Temperature	280 – 305	°C	
Rear - Zone 1 Temperature	270 – 295	°C	
Mold Temperature	70 – 120	°C	
Back Pressure	0.3 – 0.7	MPa	
Screw Speed	40 – 70	rpm	
Shot to Cylinder Size	40 – 60	%	
Vent Depth	0.025 – 0.076	mm	

(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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