LNP™ ELCRES™ EXL4312

DESCRIPTION

ELCRES EXL4312 is based on Polycarbonate (PC) siloxane copolymer resin containing 20% glass fiber, medium flow, impact modified, injection moldable grade. EXL4312 has good surface energy and high gloss and is good candidate for a broad range of applications that require a combination of stiffness and ductility.

GENERAL INFORMATION	
Features	Aesthetics/Visual effects, High stiffness/Strength, No PFAS intentionally added
Fillers	Glass Fiber
Polymer Types	Polycarbonate (PC)
Processing Techniques	Injection Molding

INDUSTRY	SUB INDUSTRY
Consumer	Commercial Appliance
Electrical and Electronics	Mobile Phone - Computer - Tablets
Industrial	Material Handling

TYPICAL PROPERTY VALUES

Revision 20241024

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL [1]			
Tensile Stress, brk, Type I, 5 mm/min	90	MPa	ASTM D638
Tensile Strain, brk, Type I, 5 mm/min	3.5	%	ASTM D638
Tensile Modulus, 5 mm/min	5500	MPa	ASTM D638
Flexural Strength, 1.3 mm/min, 50 mm span	140	MPa	ASTM D790
Flexural Modulus, 1.3 mm/min, 50 mm span	5400	MPa	ASTM D790
Tensile Stress, break, 5 mm/min	90	MPa	ISO 527
Tensile Strain, break, 5 mm/min	3.2	%	ISO 527
Tensile Modulus, 1 mm/min	5400	MPa	ISO 527
Flexural Strength, 2 mm/min	140	MPa	ISO 178
Flexural Modulus, 2 mm/min	5500	MPa	ISO 178
IMPACT [1]			
Izod Impact, notched, 23°C	150	J/m	ASTM D256
Izod Impact, notched, -20°C	100	J/m	ASTM D256
Izod Impact, unnotched, 23°C	780	J/m	ASTM D4812
THERMAL [1]			
HDT, 0.45 MPa, 3.2 mm, unannealed	144	°C	ASTM D648
HDT, 1.82 MPa, 3.2mm, unannealed	138	°C	ASTM D648
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	143	°C	ISO 75/Bf
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	137	°C	ISO 75/Af
CTE, -40°C to 40°C, flow	3.0E-05	1/°C	ASTM E831
CTE, -40°C to 40°C, xflow	9.0E-05	1/°C	ASTM E831

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
CTE, -40°C to 40°C, flow	3.0E-05	1/°C	ISO 11359-2
CTE, -40°C to 40°C, xflow	9.0E-05	1/°C	ISO 11359-2
PHYSICAL [1]			
Specific Gravity	1.3	-	ASTM D792
Density	1.3	g/cm³	ISO 1183
Melt Flow Rate, 300°C/1.2 kgf	16	g/10 min	ASTM D1238
Melt Volume Rate, MVR at 300°C/1.2 kg	12	cm³/10 min	ISO 1133
Mold Shrinkage, flow [2]	0.4 – 0.6	%	SABIC method
Mold Shrinkage, xflow [2]	0.4 – 0.6	%	SABIC method
ELECTRICAL [1]			
Dielectric Constant, 1.1 GHz	3.107	-	SABIC method
Dissipation Factor, 1.1 GHz	0.006	-	SABIC method
Dielectric Constant, 1.9 GHz	3.070	-	SABIC method
Dissipation Factor, 1.9 GHz	0.006	-	SABIC method
Dielectric Constant, 5 GHz	3.103	-	SABIC method
Dissipation Factor, 5 GHz	0.006	-	SABIC method
INJECTION MOLDING [3]			
Drying Temperature	110 – 120	°C	
Drying Time	3 – 6	Hrs	
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	110 – 140	°C	

(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) 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.

(3) 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.

DISCLAIMER