LNP™ ELCRES™ HPC17

DESCRIPTION

LNP ELCRES HPC17 resin is a High Heat Polycarbonate Copolymer Resin with Vicat of 170°C, specially targeted for healthcare applications. Subject to Healthcare Management of Change, Biocompatible according to ISO 10993 or USP Class VI. This resin is optimized to reduce tendency of yellowing of transparent resins within a broad processing window. It is available in limited colors.

TYPICAL PROPERTY VALUES

Revision 20200220

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL			
Tensile Stress, yld, Type I, 50 mm/min	75	MPa	ASTM D 638
Tensile Stress, brk, Type I, 50 mm/min	60	MPa	ASTM D 638
Tensile Strain, yld, Type I, 50 mm/min	7	%	ASTM D 638
Tensile Strain, brk, Type I, 50 mm/min	>40	%	ASTM D 638
Tensile Modulus, 5 mm/min	2500	MPa	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	120	MPa	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	2450	MPa	ASTM D 790
Tensile Stress, yield, 50 mm/min	75	MPa	ISO 527
Tensile Stress, break, 50 mm/min	60	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	6.5	%	ISO 527
Tensile Strain, break, 50 mm/min	>50	%	ISO 527
Tensile Modulus, 1 mm/min	2450	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	110	MPa	ISO 178
Flexural Modulus, 2 mm/min	2500	MPa	ISO 178
IMPACT			
Izod Impact, notched, 23°C	80	J/m	ASTM D 256
Izod Impact, notched, -30°C	75	J/m	ASTM D 256
Izod Impact, notched 80*10*3 +23°C	8	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*3 -30°C	7	kJ/m²	ISO 180/1A
Izod Impact, unnotched 80*10*3 +23°C	NB	kJ/m²	ISO 180/1U
Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm	10	kJ/m²	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80*10*3 sp=62mm	7	kJ/m²	ISO 179/1eA
Charpy 23°C, Unnotch Edgew 80*10*3 sp=62mm	NB	kJ/m²	ISO 179/1eU
THERMAL			
Tg (half width)	175	°C	SABIC method
Vicat Softening Temp, Rate B/120	172	°C	ASTM D 1525
HDT, 0.45 MPa, 3.2 mm, unannealed	165	°C	ASTM D 648
HDT, 1.82 MPa, 3.2mm, unannealed	152	°C	ASTM D 648
CTE, -40°C to 40°C, flow	6.00E-05	1/°C	ISO 11359-2
CTE, -40°C to 40°C, xflow	6.00E-05	1/°C	ISO 11359-2
Vicat Softening Temp, Rate B/120	172	°C	ISO 306
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	165	°C	ISO 75/Bf
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	152	°C	ISO 75/Af
Thermal Conductivity	0.2	W/m·°C	ISO 8302

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PHYSICAL			
Mold Shrinkage, flow, 3.2 mm	0.7 – 0.95	%	SABIC method
Mold Shrinkage, xflow, 3.2 mm	0.7 – 0.95	%	SABIC method
Specific Gravity	1.21	-	ASTM D 792
Melt Flow Rate, 330°C/2.16 kgf	33	g/10 min	ASTM D 1238
Melt Flow Rate, 350°C/2.16 kgf	60	g/10 min	ASTM D 1238
Density	1.21	g/cm³	ISO 1183
Water Absorption, (23°C/sat)	0.3	%	ISO 62
Moisture Absorption (23°C / 50% RH)	0.3	%	ISO 62
Melt Volume Rate, MVR at 330°C/2.16kg	30	cm³/10 min	ISO 1133
Melt Volume Rate, MVR at 350°C/2.16kg	55	cm³/10 min	ISO 1133
OPTICAL			
Refractive Index	1.602	-	ISO 489
Abbe number	30	-	ISO 489
Light Transmission, 1.0 mm	89	%	ASTM D1003
Light Transmission at 2.0 mm	88	%	ASTM D1003
Light Transmission at 3.0 mm	87	%	ASTM D1003
INJECTION MOLDING			
Drying Temperature	135	°C	
Drying Time	4 – 6	hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	300 – 355	°C	
Nozzle Temperature	295 – 350	°C	
Front - Zone 3 Temperature	300 – 355	°C	
Middle - Zone 2 Temperature	290 – 345	°C	
Rear - Zone 1 Temperature	280 – 335	°C	
Mold Temperature	110 – 160	°C	
Back Pressure	0.3 – 0.7	MPa	
Screw Speed	40 – 90	rpm	
Shot to Cylinder Size	40 – 60	%	
Vent Depth	0.025 – 0.08	mm	

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