CYCOLOY™ FR RESIN RCY6713

DESCRIPTION

CYCOLOY RCY6713 resin is based on high heat Polycarbonate (PC) with non-brominated and non-chlorinated flame retardant. It contains 30% post consumer recycle content with a UL-94 V0 rating @ 1.5 mm. This grade is suitable for thin wall applications that require high flow and high stiffness performance.

GENERAL INFORMATION	
Features	Thin Wall, Sustainable (Mechanical Recycling), Non Cl/Br flame retardant, High temperature resistance
Fillers	Unreinforced
Polymer Types	Polycarbonate (PC)
Processing Techniques	Injection Molding

INDUSTRY	SUB INDUSTRY
Consumer	Consumer Goods, Home Appliances, Commercial Appliance
Electrical and Electronics	Electronic Components
Industrial	Electrical

TYPICAL PROPERTY VALUES

Revision 20231109

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL [1]			
Tensile Stress, yld, Type I, 50 mm/min	60	MPa	ASTM D638
Tensile Stress, brk, Type I, 50 mm/min	54	MPa	ASTM D638
Tensile Strain, yld, Type I, 50 mm/min	5.5	%	ASTM D638
Tensile Strain, brk, Type I, 50 mm/min	76	%	ASTM D638
Tensile Modulus, 50 mm/min	2300	MPa	ASTM D638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	93	MPa	ASTM D790
Flexural Modulus, 1.3 mm/min, 50 mm span	2320	MPa	ASTM D790
Tensile Stress, yield, 5 mm/min	58	MPa	ISO 527
Tensile Stress, break, 5 mm/min	50	MPa	ISO 527
Tensile Strain, yield, 5 mm/min	5	%	ISO 527
Tensile Strain, break, 5 mm/min	72	%	ISO 527
Tensile Modulus, 1 mm/min	2300	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	90	MPa	ISO 178
Flexural Modulus, 2 mm/min	2300	MPa	ISO 178
IMPACT [1]			
Izod Impact, notched, 23°C	750	J/m	ASTM D256
Instrumented Dart Impact Total Energy, 23°C	70	J	ASTM D3763
Izod Impact, notched 80*10*3 +23°C	65	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*3 0°C	51	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*3 -30°C	17	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*4 +23°C	43	kJ/m²	ISO 180/1A

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Izod Impact, notched 80*10*4 0°C	15	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	13	kJ/m²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	48	kJ/m²	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80*10*4 sp=62mm	13	kJ/m²	ISO 179/1eA
THERMAL [1]			
HDT, 0.45 MPa, 3.2 mm, unannealed	126	°C	ASTM D648
HDT, 1.82 MPa, 3.2mm, unannealed	112	°C	ASTM D648
CTE, -40°C to 40°C, flow	7.74E-05	1/°C	ASTM E831
CTE, -40°C to 40°C, xflow	5.94E-05	1/°C	ASTM E831
CTE, 23°C to 60°C, flow	7.E-05	1/°C	ISO 11359-2
CTE, 23°C to 60°C, xflow	7.E-05	1/°C	ISO 11359-2
Ball Pressure Test, 125°C +/- 2°C	PASSES	-	IEC 60695-10-2
Vicat Softening Temp, Rate B/50	133	°C	ISO 306
Vicat Softening Temp, Rate B/120	135	°C	ISO 306
HDT/Be, 0.45MPa Edgew 120*10*4 sp=100mm	126	°C	ISO 75/Be
HDT/Ae, 1.8 MPa Edgew 120*10*4 sp=100mm	113	°C	ISO 75/Ae
Relative Temp Index, Elec [2]	60	°C	UL 746B
Relative Temp Index, Mech w/impact [2]	60	°C	UL 746B
Relative Temp Index, Mech w/o impact [2]	60	°C	UL 746B
PHYSICAL [1]			
Specific Gravity	1.19	-	ASTM D792
Mold Shrinkage, flow, 3.2 mm [3]	0.4 – 0.6	%	SABIC method
Melt Flow Rate, 260°C/2.16 kgf	6.3	g/10 min	ASTM D1238
Density	1.2	g/cm³	ISO 1183
Melt Volume Rate, MVR at 260°C/5.0 kg	16	cm³/10 min	ISO 1133
ELECTRICAL [2]			
Hot-Wire Ignition (HWI), PLC 2	≥3	mm	UL 746A
FLAME CHARACTERISTICS [2]			
UL Yellow Card Link	E207780-100960579	-	-
UL Recognized, 94V-1 Flame Class Rating	≥1	mm	UL 94
UL Recognized, 94V-0 Flame Class Rating	≥1.5	mm	UL 94
INJECTION MOLDING [4]			
Drying Temperature	90 – 100	°C	
Drying Time	2 – 4	Hrs	
Drying Time (Cumulative)	8	Hrs	
Maximum Moisture Content	0.04	%	
Melt Temperature	270 – 300	°C	
Nozzle Temperature	265 – 300	°C	
Front - Zone 3 Temperature	265 – 300	°C	
Middle - Zone 2 Temperature	260 – 300	°C	
Rear - Zone 1 Temperature	260 – 300	°C	
Mold Temperature	60 – 90	°C	
Back Pressure	0.3 – 0.7	MPa	
Screw Speed	40 – 70	rpm	
Shot to Cylinder Size	40 – 80	%	

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Vent Depth	0.038 – 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.

DISCLAIMER