

# 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
<b>MECHANICAL <sup>(1)</sup></b>			
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
<b>IMPACT <sup>(1)</sup></b>			
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/m <sup>2</sup>	ISO 180/1A
Izod Impact, notched 80*10*3 0°C	51	kJ/m <sup>2</sup>	ISO 180/1A
Izod Impact, notched 80*10*3 -30°C	17	kJ/m <sup>2</sup>	ISO 180/1A
Izod Impact, notched 80*10*4 +23°C	43	kJ/m <sup>2</sup>	ISO 180/1A

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Izod Impact, notched 80*10*4 0°C	15	kJ/m <sup>2</sup>	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	13	kJ/m <sup>2</sup>	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	48	kJ/m <sup>2</sup>	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80*10*4 sp=62mm	13	kJ/m <sup>2</sup>	ISO 179/1eA
<b>THERMAL <sup>(1)</sup></b>			
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 <sup>(2)</sup>	60	°C	UL 746B
Relative Temp Index, Mech w/impact <sup>(2)</sup>	60	°C	UL 746B
Relative Temp Index, Mech w/o impact <sup>(2)</sup>	60	°C	UL 746B
<b>PHYSICAL <sup>(1)</sup></b>			
Specific Gravity	1.19	-	ASTM D792
Mold Shrinkage, flow, 3.2 mm <sup>(3)</sup>	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/cm <sup>3</sup>	ISO 1183
Melt Volume Rate, MVR at 260°C/5.0 kg	16	cm <sup>3</sup> /10 min	ISO 1133
<b>ELECTRICAL <sup>(2)</sup></b>			
Hot-Wire Ignition (HWI), PLC 2	≥3	mm	UL 746A
<b>FLAME CHARACTERISTICS <sup>(2)</sup></b>			
UL Yellow Card Link	<a href="#">E207780-100960579</a>	-	-
UL Recognized, 94V-1 Flame Class Rating	≥1	mm	UL 94
UL Recognized, 94V-0 Flame Class Rating	≥1.5	mm	UL 94
<b>INJECTION MOLDING <sup>(4)</sup></b>			
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

Any sale by SABIC, its subsidiaries and affiliates (each a "seller"), is made exclusively under seller's standard conditions of sale (available upon request) unless agreed otherwise in writing and signed on behalf of the seller. While the information contained herein is given in good faith, SELLER MAKES NO WARRANTY, EXPRESS OR IMPLIED, INCLUDING MERCHANTABILITY AND NONINFRINGEMENT OF INTELLECTUAL PROPERTY, NOR ASSUMES ANY LIABILITY, DIRECT OR INDIRECT, WITH RESPECT TO THE PERFORMANCE, SUITABILITY OR FITNESS FOR INTENDED USE OR PURPOSE OF THESE PRODUCTS IN ANY APPLICATION. Each customer must determine the suitability of seller materials for the customer's particular use through appropriate testing and analysis. No statement by seller concerning a possible use of any product, service or design is intended, or should be construed, to grant any license under any patent or other intellectual property right.