

# CYCOLOY™ FR RESIN CY6310

REGION AMERICAS

## DESCRIPTION

CYCOLOY CY6310 Polycarbonate/Acrylonitrile Butadiene Styrene (PC/ABS) resin is a hydrolytically stable, impact modified grade that can be injection molded. This non-chlorinated, non-brominated flame retardant PC/ABS has a UL V0 & 5VA/B flame rating. CYCOLOY CY6310 resin is an excellent candidate for a wide variety of large size of applications including appliances, lighting, electrical and enclosures.

## TYPICAL PROPERTY VALUES

Revision 20171213

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
<b>MECHANICAL</b>			
Tensile Stress, yld, Type I, 50 mm/min	63	MPa	ASTM D 638
Tensile Stress, brk, Type I, 50 mm/min	50	MPa	ASTM D 638
Tensile Strain, yld, Type I, 50 mm/min	4.2	%	ASTM D 638
Tensile Strain, brk, Type I, 50 mm/min	>50	%	ASTM D 638
Tensile Modulus, 5 mm/min	2700	MPa	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	101	MPa	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	2700	MPa	ASTM D 790
Tensile Stress, yield, 50 mm/min	63	MPa	ISO 527
Tensile Stress, break, 50 mm/min	51	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	4.4	%	ISO 527
Tensile Strain, break, 50 mm/min	>50	%	ISO 527
Tensile Modulus, 1 mm/min	2700	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	91	MPa	ISO 178
Flexural Modulus, 2 mm/min	2650	MPa	ISO 178
<b>IMPACT</b>			
Izod Impact, notched, 23°C	600	J/m	ASTM D 256
Izod Impact, notched, -30°C	115	J/m	ASTM D 256
Multiaxial Impact	105	J	ISO 6603
Instrumented Impact Total Energy, 23°C	65	J	ASTM D 3763
Izod Impact, unnotched 80*10*3 +23°C	NB	kJ/m <sup>2</sup>	ISO 180/1U
Izod Impact, notched 80*10*3 +23°C	50	kJ/m <sup>2</sup>	ISO 180/1A
Izod Impact, notched 80*10*3 -30°C	13	kJ/m <sup>2</sup>	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm	55	kJ/m <sup>2</sup>	ISO 179/1eA

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Charpy -30°C, V-notch Edgew 80*10*3 sp=62mm	14	kJ/m <sup>2</sup>	ISO 179/1eA
Charpy 23°C, Unnotch Edgew 80*10*3 sp=62mm	NB	kJ/m <sup>2</sup>	ISO 179/1eU
<b>THERMAL</b>			
Vicat Softening Temp, Rate B/50	109	°C	ASTM D 1525
HDT, 0.45 MPa, 3.2 mm, unannealed	100	°C	ASTM D 648
HDT, 1.82 MPa, 3.2mm, unannealed	88	°C	ASTM D 648
CTE, -40°C to 40°C, flow	6.8E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, xflow	7.E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, flow	6.8E-05	1/°C	ISO 11359-2
CTE, -40°C to 40°C, xflow	7.E-05	1/°C	ISO 11359-2
Ball Pressure Test, 75°C +/- 2°C	Pass	-	IEC 60695-10-2
Ball Pressure Test, approximate maximum	95	°C	IEC 60695-10-2
Vicat Softening Temp, Rate B/50	109	°C	ISO 306
Vicat Softening Temp, Rate B/120	111	°C	ISO 306
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	90	°C	ISO 75/Af
Relative Temp Index, Elec	85	°C	UL 746B
Relative Temp Index, Mech w/impact	85	°C	UL 746B
Relative Temp Index, Mech w/o impact	85	°C	UL 746B
<b>PHYSICAL</b>			
Specific Gravity	1.17	-	ASTM D 792
Mold Shrinkage, flow, 3.2 mm (5)	0.4 – 0.6	%	SABIC method
Melt Flow Rate, 250°C/2.16 kgf	16	g/10 min	ASTM D 1238
Melt Flow Rate, 260°C/2.16 kgf	20	g/10 min	ASTM D 1238
Density	1.17	g/cm <sup>3</sup>	ISO 1183
Water Absorption, (23°C/sat)	0.6	%	ISO 62
Moisture Absorption (23°C / 50% RH)	0.2	%	ISO 62
Melt Volume Rate, MVR at 260°C/2.16 kg	19	cm <sup>3</sup> /10 min	ISO 1133
<b>ELECTRICAL</b>			
Hot Wire Ignition {PLC}	3	PLC Code	UL 746A
High Ampere Arc Ign, surface {PLC}	0	PLC Code	UL 746A
Volume Resistivity	>1.E+15	Ohm-cm	IEC 60093
Surface Resistivity, ROA	>1.E+15	Ohm	IEC 60093
Comparative Tracking Index	575	V	IEC 60112
<b>FLAME CHARACTERISTICS</b>			
UL Compliant, 94V-2 Flame Class Rating (3)(4)	0.75	mm	UL 94 by SABIC-IP
UL Compliant, 94V-0 Flame Class Rating (3)(4)	1.5	mm	UL 94 by SABIC-IP
UL Compliant, 94-5VA Rating (3)(4)	2.9	mm	UL 94 by SABIC-IP
UL Compliant, 94-5VB Rating (3)(4)	2.3	mm	UL 94 by SABIC-IP

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
UL Recognized, 94V-2 Flame Class Rating (3)	0.75	mm	UL 94
UL Recognized, 94V-0 Flame Class Rating (3)	1.5	mm	UL 94
UL Recognized, 94-5VA Rating (3)	2.9	mm	UL 94
UL Recognized, 94-5VB Rating (3)	2.3	mm	UL 94
Glow Wire Flammability Index 960°C, passes at	3	mm	IEC 60695-2-12
Oxygen Index (LOI)	30	%	ISO 4589
<b>INJECTION MOLDING</b>			
Drying Temperature	90 – 100	°C	
Drying Time	2 – 4	hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	250 – 280	°C	
Nozzle Temperature	230 – 270	°C	
Front - Zone 3 Temperature	240 – 280	°C	
Middle - Zone 2 Temperature	230 – 270	°C	
Rear - Zone 1 Temperature	210 – 240	°C	
Hopper Temperature	60 – 80	°C	
Mold Temperature	60 – 90	°C	

## 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.