CYCOLOY™ FR Resin RCM6123

DESCRIPTION

CYCOLOY RCM6123 resin is based on Polycarbonate + ABS (PC+ABS) blend containing mineral and is non-brominated and non-chlorinated flame retardant. It contains 30% post-consumer recycle content with a UL-94 V0 rating @ 1.2mm. This grade is suitable for thin wall applications that require high flow and high stiffness performance.

GENERAL INFORMATION	
Features	Thin Wall, Mechanical Recycling, Non Cl/Br flame retardant
Fillers	Mineral
Polymer Types	Polycarbonate + ABS (PC+ABS)
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 20241021

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL [1]			
Tensile Stress, yld, Type I, 5 mm/min	50	MPa	ASTM D638
Tensile Stress, brk, Type I, 5 mm/min	40	MPa	ASTM D638
Tensile Strain, yld, Type I, 5 mm/min	3.3	%	ASTM D638
Tensile Strain, brk, Type I, 5 mm/min	26	%	ASTM D638
Tensile Modulus, 5 mm/min	4400	MPa	ASTM D638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	97	MPa	ASTM D790
Flexural Modulus, 1.3 mm/min, 50 mm span	4300	MPa	ASTM D790
Tensile Stress, yield, 5 mm/min	55	MPa	ISO 527
Tensile Stress, break, 5 mm/min	35	MPa	ISO 527
Tensile Strain, yield, 5 mm/min	3.8	%	ISO 527
Tensile Strain, break, 5 mm/min	30	%	ISO 527
Tensile Modulus, 1 mm/min	4500	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	97	MPa	ISO 178
Flexural Modulus, 2 mm/min	4400	MPa	ISO 178
IMPACT [1]			
Izod Impact, notched, 23°C	60	J/m	ASTM D256
Instrumented Dart Impact Total Energy, 23°C	56	J	ASTM D3763
Izod Impact, notched 80*10*3 +23°C	5	kJ/m²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm	5	kJ/m²	ISO 179/1eA
THERMAL [1]			
HDT, 0.45 MPa, 3.2 mm, unannealed	91	°C	ASTM D648

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
HDT, 1.82 MPa, 3.2mm, unannealed	82	°C	ASTM D648
CTE, -40°C to 40°C, flow	4.2E-05	1/°C	ASTM E831
CTE, -40°C to 40°C, xflow	4.9E-05	1/°C	ASTM E831
CTE, 23°C to 80°C, flow	6.2E-05	1/°C	ISO 11359-2
CTE, 23°C to 80°C, xflow	7.8E-05	1/°C	ISO 11359-2
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	85	°C	ISO 75/Af
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	1.3	-	ASTM D792
Mold Shrinkage, flow, 3.2 mm [3]	0.3 – 0.4	%	SABIC method
Melt Flow Rate, 260°C/2.16 kgf	11	g/10 min	ASTM D1238
Density	1.3	g/cm³	ISO 1183
Moisture Absorption (23°C / 50% RH)	0.04	%	ISO 62
ELECTRICAL [2]			
Comparative Tracking Index (UL) {PLC}	2	PLC Code	UL 746A
Hot-Wire Ignition (HWI), PLC 3	≥3	mm	UL 746A
FLAME CHARACTERISTICS [2]			
UL Yellow Card Link	E207780-100634986	-	-
UL Recognized, 94V-0 Flame Class Rating	≥1.2	mm	UL 94
INJECTION MOLDING [4]			
Drying Temperature	80 – 90	°C	
Drying Time	3 – 4	Hrs	
Drying Time (Cumulative)	8	Hrs	
Maximum Moisture Content	0.04	%	
Melt Temperature	245 – 275	°C	
Nozzle Temperature	245 – 275	°C	
Front - Zone 3 Temperature	245 – 275	°C	
Middle - Zone 2 Temperature	220 – 265	°C	
Rear - Zone 1 Temperature	220 – 255	°C	
Mold Temperature	60 – 80	°C	
Back Pressure	0.3 – 0.7	MPa	
Screw Speed	40 – 70	rpm	
Shot to Cylinder Size	30 – 80	%	
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.

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