



CYCOLOY™ Resin XCM851

Americas: COMMERCIAL

High heat PC/ABS blend offering high modulus / low CTE and good practical impact

TYPICAL PROPERTIES ¹	TYPICAL VALUE	Unit	Standard
MECHANICAL			
Tensile Stress, yld, Type I, 5 mm/min	610	kgf/cm ²	ASTM D 638
Tensile Stress, brk, Type I, 5 mm/min	350	kgf/cm ²	ASTM D 638
Tensile Strain, yld, Type I, 5 mm/min	4	%	ASTM D 638
Tensile Strain, brk, Type I, 5 mm/min	12	%	ASTM D 638
Tensile Modulus, 5 mm/min	48400	kgf/cm ²	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	1100	kgf/cm ²	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	46300	kgf/cm ²	ASTM D 790
Tensile Stress, yield, 5 mm/min	55	MPa	ISO 527
Tensile Stress, break, 5 mm/min	45	MPa	ISO 527
Tensile Strain, yield, 5 mm/min	4	%	ISO 527
Tensile Strain, break, 5 mm/min	10	%	ISO 527
Tensile Modulus, 1 mm/min	4600	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	100	MPa	ISO 178
Flexural Modulus, 2 mm/min	4400	MPa	ISO 178
IMPACT			
Izod Impact, notched, 23°C	10	cm-kgf/cm	ASTM D 256
Izod Impact, notched, -30°C	8	cm-kgf/cm	ASTM D 256
Instrumented Impact Total Energy, 23°C	611	cm-kgf	ASTM D 3763
Izod Impact, unnotched 80*10*3 +23°C	NB	kJ/m ²	ISO 180/1U
Izod Impact, notched 80*10*3 +23°C	12	kJ/m ²	ISO 180/1A
Izod Impact, notched 80*10*3 -30°C	9	kJ/m ²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm	15	kJ/m ²	ISO 179/1eA

(1) Typical values only. Variations within normal tolerances are possible for various colors. All values are measured after at least 48 hours storage at 23°C/50% relative humidity. All properties, except the melt volume and melt flow rates, are measured on injection molded samples. All samples tested under ISO test standards are prepared according to ISO 294.

(2) Only typical data for selection purposes. Not to be used for part or tool design.
(3) This rating is not intended to reflect hazards presented by this or any other material under actual fire conditions.

(4) Internal measurements according to UL standards.

(5) 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.

(6) Needs hard coat to consistently pass 60 sec Vertical Burn.

Source GMD, last updated:

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IMPACT			
Charpy 23°C, Unnotch Edgew 80*10*3 sp=62mm	NB	kJ/m ²	ISO 179/1eU
THERMAL			
Vicat Softening Temp, Rate B/50	138	°C	ASTM D 1525
HDT, 1.82 MPa, 3.2mm, unannealed	119	°C	ASTM D 648
CTE, -40°C to 40°C, flow	4.1E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, xflow	5.6E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, flow	4.1E-05	1/°C	ISO 11359-2
CTE, -40°C to 40°C, xflow	5.6E-05	1/°C	ISO 11359-2
Vicat Softening Temp, Rate B/50	139	°C	ISO 306
Vicat Softening Temp, Rate B/120	140	°C	ISO 306
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	122	°C	ISO 75/Af
PHYSICAL			
Specific Gravity	1.3	-	ASTM D 792
Mold Shrinkage, flow, 3.2 mm (5)	0.3 - 0.5	%	SABIC Method
Melt Flow Rate, 260°C/5.0 kgf	12	g/10 min	ASTM D 1238
Density	1.3	g/cm ³	ISO 1183
Water Absorption, (23°C/sat)	0.2	%	ISO 62
Moisture Absorption (23°C / 50% RH)	0.01	%	ISO 62
Melt Volume Rate, MVR at 260°C/5.0 kg	9	cm ³ /10 min	ISO 1133

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PROCESSING PARAMETERS	TYPICAL VALUE	Unit
Injection Molding		
Drying Temperature	120 - 110	°C
Drying Time	2 - 6	hrs
Maximum Moisture Content	0.02	%
Melt Temperature	270 - 300	°C
Nozzle Temperature	260 - 290	°C
Front - Zone 3 Temperature	270 - 300	°C
Middle - Zone 2 Temperature	265 - 290	°C
Rear - Zone 1 Temperature	260 - 270	°C
Mold Temperature	60 - 100	°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
Sheet Extrusion		
Drying Temperature	120 - 120	°C
Drying Time	2 - 6	hrs
Drying Time (Cumulative)	8	hrs
Maximum Moisture Content	0.02	%
Melt Temperature	250 - 270	°C
Barrel - Zone 1 Temperature	195 - 205	°C
Barrel - Zone 2 Temperature	200 - 220	°C
Barrel - Zone 3 Temperature	220 - 240	°C
Barrel - Zone 4 Temperature	230 - 260	°C
Adapter Temperature	230 - 260	°C
Die Temperature	230 - 245	°C
Roll Stack Temp - Top	100 - 110	°C
Roll Stack Temp - Middle	110 - 120	°C
Roll Stack Temp - Bottom	145 - 155	°C

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