

**Makrolon® Rx1851**

 Covestro - Polycarbonates - *Polycarbonate*
**General Information**
**Product Description**

MVR (300°C/1.2 kg) 23 cm³/10 min; medical devices; low viscosity; easy release; injection molding - melt temperature 280 - 320°C

**General**

Material Status	• Commercial: Active
Availability	• Africa & Middle East • Asia Pacific • Europe • Latin America • North America
Features	• Good Mold Release • Low Viscosity
Uses	• Medical Devices • Medical/Healthcare Applications
Agency Ratings	• ISO 10993 • USP Class VI
RoHS Compliance	• RoHS Compliant
Processing Method	• Injection Molding
ISO Designation	• ISO 7391-PC,MR(..)-24-9

**Properties <sup>1</sup>**

Physical	Nominal Value	Unit	Test Method
Density (73°F)	1.20	g/cm <sup>3</sup>	ISO 1183
Apparent (Bulk) Density <sup>2</sup>	0.66	g/cm <sup>3</sup>	ISO 60
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	24	g/10 min	ISO 1133
Melt Volume-Flow Rate (MVR) (300°C/1.2 kg)	23	cm <sup>3</sup> /10min	ISO 1133
Molding Shrinkage			
Across Flow	0.50 to 0.70	%	ISO 2577
Flow	0.50 to 0.70	%	ISO 2577
Across Flow : 536°F, 0.0787 in <sup>3</sup>	0.70	%	ISO 294-4
Flow : 536°F, 0.0787 in <sup>3</sup>	0.70	%	ISO 294-4
Water Absorption (Saturation, 73°F)	0.30	%	ISO 62
Water Absorption (Equilibrium, 73°F, 50% RH)	0.12	%	ISO 62
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus (73°F)	348000	psi	ISO 527-1/1
Tensile Stress			
Yield, 73°F	> 7250	psi	ISO 527-2/5
Yield, 73°F	9430	psi	ISO 527-2/50
Tensile Stress (Break, 73°F)	10200	psi	ISO 527-2/50
Tensile Strain (Yield, 73°F)	6.0	%	ISO 527-2/50
Tensile Strain (Break, 73°F)	120	%	ISO 527-2/50
Flexural Modulus <sup>4</sup> (73°F)	348000	psi	ISO 178
Flexural Stress <sup>4</sup>			ISO 178
73°F	14200	psi	
3.5% Strain, 73°F	11000	psi	
Flexural Strain at Flexural Strength <sup>5</sup> (73°F)	6.8	%	ISO 178
Impact	Nominal Value	Unit	Test Method
Charpy Unnotched Impact Strength			ISO 179/1eU
-22°F	No Break		
73°F	No Break		
Notched Izod Impact Strength <sup>6</sup>			ISO 180/A
-22°F, Complete Break	5.7	ft·lb/in <sup>2</sup>	



73°F, Partial Break	31 ft·lb/in <sup>2</sup>	
Multi-Axial Instrumented Impact Energy		ISO 6603-2
-22°F	47.9 ft·lb	
73°F	40.6 ft·lb	
Multi-Axial Instrumented Impact Peak Force		ISO 6603-2
-22°F	1390 lbf	
73°F	1170 lbf	
<b>Hardness</b>	<b>Nominal Value</b>	<b>Unit</b>
Ball Indentation Hardness	17000	psi
<b>Thermal</b>	<b>Nominal Value</b>	<b>Unit</b>
Deflection Temperature Under Load (66 psi, Unannealed)	273	°F
Deflection Temperature Under Load (264 psi, Unannealed)	250	°F
Vicat Softening Temperature		
--	288	°F
--	286	°F
Ball Pressure Test (275°F)	Pass	
CLTE - Flow (73 to 131°F)	3.6E-5	in/in/°F
CLTE - Transverse (73 to 131°F)	3.6E-5	in/in/°F
Thermal Conductivity <sup>7</sup> (73°F)	1.4	Btu·in/hr/ft <sup>2</sup> /°F
<b>Flammability</b>	<b>Nominal Value</b>	<b>Unit</b>
Oxygen Index <sup>8</sup>	27	%
Flash Ignition Temperature	896	°F
Self Ignition Temperature	1022	°F

### Processing Information

	Nominal Value	Unit
<b>Injection</b>		
Drying Temperature - Dry Air Dryer	248	°F
Drying Time - Dry Air Dryer	2.0 to 3.0	hr
Suggested Max Moisture	< 0.020	%
Suggested Shot Size	30 to 70	%
Rear Temperature	482 to 500	°F
Middle Temperature	518 to 536	°F
Front Temperature	536 to 554	°F
Nozzle Temperature	554 to 572	°F
Processing (Melt) Temp	536 to 608	°F
Mold Temperature	176 to 248	°F
Back Pressure	725 to 2180	psi
Vent Depth	9.8E-4 to 3.0E-3	in

#### Injection Notes

Hold Pressure (% of Injection Pressure): 50 - 75%  
 Peripheral Screw Speed: 0.05 - 0.2 m/s  
 Standard Melt Temperature: 300°C

#### Notes

<sup>1</sup> Typical properties: these are not to be construed as specifications.

<sup>2</sup> Pellets

<sup>3</sup> 60x60x2mm, MT 80°C, 500 bar

<sup>4</sup> 0.079 in/min

<sup>5</sup> 2.0 mm/min

<sup>6</sup> 3.0 mm

<sup>7</sup> Across Flow

<sup>8</sup> Procedure A

