

**Makrolon® Rx2440**

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

low viscosity; medical devices; suitable for sterilization with high-energy radiation in O2-free packaging

**General**

Material Status	<ul style="list-style-type: none"> <li>Commercial: Active</li> </ul>		
Availability	<ul style="list-style-type: none"> <li>Africa &amp; Middle East</li> <li>Asia Pacific</li> </ul>	<ul style="list-style-type: none"> <li>Europe</li> <li>Latin America</li> </ul>	<ul style="list-style-type: none"> <li>North America</li> </ul>
Features	<ul style="list-style-type: none"> <li>Low Viscosity</li> <li>Radiation Sterilizable</li> </ul>		
Uses	<ul style="list-style-type: none"> <li>Medical Devices</li> <li>Medical/Healthcare Applications</li> </ul>		
Agency Ratings	<ul style="list-style-type: none"> <li>ISO 10993</li> <li>USP Class VI</li> </ul>		
RoHS Compliance	<ul style="list-style-type: none"> <li>RoHS Compliant</li> </ul>		
ISO Designation	<ul style="list-style-type: none"> <li>ISO 7391-PC,M,(,)-18-5</li> </ul>		

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

Physical	Nominal Value	Unit	Test Method
Density (73°F)	1.20	g/cm <sup>3</sup>	ISO 1183
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	20	g/10 min	ISO 1133
Melt Volume-Flow Rate (MVR) (300°C/1.2 kg)	19	cm <sup>3</sup> /10min	ISO 1133
Molding Shrinkage			ISO 2577
Across Flow	0.50 to 0.70	%	
Flow	0.50 to 0.70	%	
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)	9720	psi	ISO 527-2/50
Tensile Stress (Break, 73°F)	10200	psi	ISO 527-2/50
Tensile Strain (Yield, 73°F)	6.1	%	ISO 527-2/50
Tensile Strain (Break, 73°F)	120	%	ISO 527-2/50
Nominal Tensile Strain at Break (73°F)	> 50	%	ISO 527-2/50
Flexural Modulus <sup>2</sup> (73°F)	348000	psi	ISO 178
Flexural Stress <sup>2</sup>			ISO 178
73°F	14500	psi	
3.5% Strain, 73°F	10700	psi	
Flexural Strain at Flexural Strength <sup>3</sup> (73°F)	7.0	%	ISO 178
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength <sup>4</sup> (73°F, Partial Break)	33	ft·lb/in <sup>2</sup>	ISO 179/1eA
Charpy Unnotched Impact Strength (73°F)	No Break		ISO 179/1eU
Notched Izod Impact Strength <sup>4</sup> (73°F, Partial Break)	29	ft·lb/in <sup>2</sup>	ISO 180/A
Multi-Axial Instrumented Impact Energy			ISO 6603-2
-22°F	44.3	ft·lb	
73°F	40.6	ft·lb	
Multi-Axial Instrumented Impact Peak Force			ISO 6603-2
-22°F	1350	lbf	
73°F	1150	lbf	
Hardness	Nominal Value	Unit	Test Method
Ball Indentation Hardness	17100	psi	ISO 2039-1



Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load (66 psi, Unannealed)	270	°F	ISO 75-2/B
Deflection Temperature Under Load (264 psi, Unannealed)	248	°F	ISO 75-2/A
Vicat Softening Temperature			
--	284	°F	ISO 306/B120
--	282	°F	ISO 306/B50
CLTE - Flow (73 to 131°F)	3.6E-5	in/in/°F	ISO 11359-2
CLTE - Transverse (73 to 131°F)	3.6E-5	in/in/°F	ISO 11359-2

### Processing Information

Injection	Nominal Value	Unit
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

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

### Notes

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

<sup>2</sup> 0.079 in/min

<sup>3</sup> 2.0 mm/min

<sup>4</sup> 3.0 mm

