

# CALIBRE™ MEGARAD™ 2081-22

## Polycarbonate Resin

### Overview

CALIBRE™ MEGARAD™ 2081-22 Polycarbonate resin is a high-flow resin designed for injection molded medical parts. It is stabilized to reduce color shift associated with exposure to high energy radiation (gamma or electron-beam). It is available in light purple transparent color designation FC030006.

Main Characteristics:

- Stabilized for high-energy radiation
- Transparent
- Contains mold release
- Tested under ISO 10993 and USP

Applications:

- Medical applications

Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Density	1.20 g/cm <sup>3</sup>	1.20 g/cm <sup>3</sup>	ASTM D792 ISO 1183
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	22 g/10 min	22 g/10 min	ASTM D1238 ISO 1133
Molding Shrinkage - Flow	5.0E-3 to 7.0E-3 in/in	0.50 to 0.70 %	ASTM D955
Water Absorption (24 hr, 73°F (23°C))	0.15 %	0.15 %	ISO 62
Mechanical	Nominal Value (English)	Nominal Value (SI)	Test Method
Tensile Modulus	334000 psi	2300 MPa	ISO 527-1/1
Tensile Strength			
Yield <sup>1</sup>	8990 psi	62.0 MPa	ASTM D638
Yield	8990 psi	62.0 MPa	ISO 527-2/50
Break <sup>1</sup>	9860 psi	68.0 MPa	ASTM D638
Break	9860 psi	68.0 MPa	ISO 527-2/50
Tensile Elongation			
Yield <sup>1</sup>	6.0 %	6.0 %	ASTM D638
Break <sup>1</sup>	120 %	120 %	ASTM D638
Break	120 %	120 %	ISO 527-2/50
Flexural Modulus			
--	350000 psi	2410 MPa	ASTM D790
-- <sup>2</sup>	348000 psi	2400 MPa	ISO 178
Flexural Strength			
--	14000 psi	96.5 MPa	ASTM D790
-- <sup>2</sup>	14100 psi	97.0 MPa	ISO 178
Impact	Nominal Value (English)	Nominal Value (SI)	Test Method
Notched Izod Impact (73°F (23°C))	14 ft-lb/in	750 J/m	ASTM D256
Thermal	Nominal Value (English)	Nominal Value (SI)	Test Method
Deflection Temperature Under Load			
264 psi (1.8 MPa), Unannealed	252 °F	122 °C	ASTM D648
264 psi (1.8 MPa), Unannealed	244 °F	118 °C	ISO 75-2/A
Vicat Softening Temperature			
--	288 °F	142 °C	ASTM D1525 <sup>3</sup>
--	279 °F	137 °C	ISO 306/B50
CLTE - Flow (-40 to 176°F (-40 to 80°C))	3.8E-5 in/in/°F	6.8E-5 cm/cm/°C	ASTM D696

<b>Electrical</b>	<b>Nominal Value (English)</b>	<b>Nominal Value (SI)</b>	<b>Test Method</b>
Electric Strength	430 V/mil	17 kV/mm	IEC 60243-1
<b>Optical</b>	<b>Nominal Value (English)</b>	<b>Nominal Value (SI)</b>	<b>Test Method</b>
Refractive Index	1.586	1.586	ASTM D542 ISO 489
Light Transmittance	71.0 to 85.0 %	71.0 to 85.0 %	ASTM D1003
Haze	< 2.00 %	< 2.00 %	ASTM D1003
<b>Injection</b>	<b>Nominal Value (English)</b>	<b>Nominal Value (SI)</b>	
Drying Temperature	248 °F	120 °C	
Drying Time	4.0 hr	4.0 hr	
Processing (Melt) Temp	500 to 536 °F	260 to 280 °C	
Mold Temperature	158 to 194 °F	70 to 90 °C	