

# CALIBRE™ MEGARAD™ 2081-6LR Polycarbonate Resin

## Overview

CALIBRE™ MEGARAD™ 2081-6LR Polycarbonate resin was developed for medical applications requiring improved resistance to lipids over standard polycarbonate resins. When exposed to a 20% intralipid emulsion solution under strained conditions, CALIBRE MEGARAD 2081-6LR exhibits significant property retention compared to standard polycarbonate. It also provides end-users of radiation sterilized medical devices a color closer to the water-clear look of the natural resin. When exposed to high energy radiation (gamma or electron beam), CALIBRE MEGARAD 2081-6LR can reduce the color shift by 50% compared to general purpose polycarbonate resins.

CALIBRE MEGARAD 2081-6LR has been evaluated with respect to ISO 10993 (Biological Evaluation of Medical Devices) and is suitable for use in approved medical applications.

### Main Characteristics

- Improved lipid resistance
- Stabilized for high-energy radiation
- Transparent
- Contains mold release
- Tested under ISO 10993

### 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
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	6.0 g/10 min	6.0 g/10 min	ASTM D1238
Molding Shrinkage - Flow	5.0E-3 to 7.0E-3 in/in	0.50 to 0.70 %	ASTM D955
Water Absorption			ASTM D570
24 hr, 73°F (23°C)	0.15 %	0.15 %	
Equilibrium, 73°F (23°C), 50% RH	0.32 %	0.32 %	
Mechanical	Nominal Value (English)	Nominal Value (SI)	Test Method
Tensile Modulus <sup>1</sup>	340000 psi	2340 MPa	ASTM D638
Tensile Strength <sup>2</sup>			ASTM D638
Yield	9500 psi	65.5 MPa	
Break	9900 psi	68.3 MPa	
Tensile Elongation <sup>2</sup>			ASTM D638
Yield	6.0 %	6.0 %	
Break	130 %	130 %	
Flexural Modulus <sup>3</sup>	350000 psi	2410 MPa	ASTM D790
Flexural Strength <sup>3</sup>	14000 psi	96.5 MPa	ASTM D790
Taber Abrasion Resistance	45 %	45 %	ASTM D1044
Impact	Nominal Value (English)	Nominal Value (SI)	Test Method
Notched Izod Impact (73°F (23°C))	16 ft-lb/in	850 J/m	ASTM D256
Unnotched Izod Impact (73°F (23°C))	No Break	No Break	ASTM D256
Instrumented Dart Impact <sup>4</sup>			ASTM D3763
73°F (23°C), Total Energy	790 in-lb	89.3 J	
Tensile Impact Strength	270 ft-lb/in <sup>2</sup>	567 kJ/m <sup>2</sup>	ASTM D1822
Hardness	Nominal Value (English)	Nominal Value (SI)	Test Method
Rockwell Hardness (R-Scale)	118	118	ASTM D785

Thermal	Nominal Value (English)	Nominal Value (SI)	Test Method
Deflection Temperature Under Load			ASTM D648
66 psi (0.45 MPa), Annealed	293 °F	145 °C	
264 psi (1.8 MPa), Unannealed	265 °F	129 °C	
264 psi (1.8 MPa), Annealed	288 °F	142 °C	
Vicat Softening Temperature	304 °F	151 °C	ASTM D1525 <sup>5</sup>
CLTE - Flow	3.8E-5 in/in/°F	6.8E-5 cm/cm/°C	ASTM D696
Electrical	Nominal Value (English)	Nominal Value (SI)	Test Method
Volume Resistivity	2.0E+17 ohms-cm	2.0E+17 ohms-cm	ASTM D257
Dielectric Strength	420 V/mil	17 kV/mm	ASTM D149
Dielectric Constant			ASTM D150
60 Hz	3.00	3.00	
1 MHz	3.00	3.00	
Dissipation Factor			ASTM D150
50 Hz	1.0E-3	1.0E-3	
1 MHz	2.0E-3	2.0E-3	
Optical	Nominal Value (English)	Nominal Value (SI)	Test Method
Refractive Index	1.586	1.586	ASTM D542
Transmittance	85.0 %	85.0 %	ASTM D1003
Haze	1.00 %	1.00 %	ASTM D1003

### Notes

These are typical properties only and are not to be construed as specifications. Users should confirm results by their own tests.

<sup>1</sup> 0.039 in/min (1.0 mm/min)

<sup>2</sup> 2.0 in/min (50 mm/min)

<sup>3</sup> Method I (3 point load), 0.079 in/min (2.0 mm/min)

<sup>4</sup> 11.1 ft/sec (3.39 m/sec)

<sup>5</sup> Rate A (50°C/h), Loading 2 (50 N)



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