

# CALIBRE™ MEGARAD™ 2091-15 Polycarbonate Resin

## Overview

CALIBRE™ MEGARAD™ 2091 Polycarbonate Resin is designed for medical devices that require oxygen-free gamma sterilization. Under these conditions, this material delivers an accelerated color recovery. In addition, the resins have a more water white appearance rather than the traditional purple tinted resin used to compensate for these sterilization methods. CALIBRE™ MEGARAD™ 2091-15 Polycarbonate Resin has undergone biocompatibility testing based on ISO 10993 standards (Biological Evaluation of Medical Devices) and is suitable for use in approved medical applications.

### Main Characteristics

- Tested under ISO 10993
- Contains mold Release
- Suitable for Oxygen-free radiation sterilization

### Applications

- Medical Applications
- Dialyzer

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)	15 g/10 min	15 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 ISO 294-4
Water Absorption			ASTM D570 ISO 62
24 hr, 73°F (23°C)	0.15 %	0.15 %	
Equilibrium, 73°F (23°C), 50% RH	0.12 %	0.12 %	
Mechanical	Nominal Value (English)	Nominal Value (SI)	Test Method
Tensile Modulus			
-- <sup>1</sup>	334000 psi	2300 MPa	ASTM D638
--	334000 psi	2300 MPa	ISO 527-1/1
Tensile Strength			
Yield <sup>2</sup>	8990 psi	62.0 MPa	ASTM D638
Yield	8990 psi	62.0 MPa	ISO 527-2/50
Break <sup>2</sup>	9860 psi	68.0 MPa	ASTM D638
Break	9860 psi	68.0 MPa	ISO 527-2/50
Tensile Elongation			
Yield <sup>2</sup>	6.0 %	6.0 %	ASTM D638
Yield	6.0 %	6.0 %	ISO 527-2/50
Break <sup>2</sup>	130 %	130 %	ASTM D638
Break	130 %	130 %	ISO 527-2/50
Flexural Modulus			
--	350000 psi	2410 MPa	ASTM D790
-- <sup>3</sup>	348000 psi	2400 MPa	ISO 178
Flexural Strength			
--	14000 psi	96.5 MPa	ASTM D790
-- <sup>3,4</sup>	14100 psi	97.0 MPa	ISO 178

<b>Impact</b>	<b>Nominal Value (English)</b>	<b>Nominal Value (SI)</b>	<b>Test Method</b>
Notched Izod Impact			
73°F (23°C)	14 ft-lb/in	750 J/m	ASTM D256
73°F (23°C)	36 ft-lb/in <sup>2</sup>	75 kJ/m <sup>2</sup>	ISO 180/1A
Instrumented Dart Impact <sup>5</sup>			ASTM D3763
73°F (23°C), Total Energy	720 in-lb	81.3 J	
Tensile Impact Strength	180 ft-lb/in <sup>2</sup>	378 kJ/m <sup>2</sup>	ASTM D1822
<b>Hardness</b>	<b>Nominal Value (English)</b>	<b>Nominal Value (SI)</b>	<b>Test Method</b>
Rockwell Hardness (R-Scale)	118	118	ASTM D785
<b>Thermal</b>	<b>Nominal Value (English)</b>	<b>Nominal Value (SI)</b>	<b>Test Method</b>
Deflection Temperature Under Load			
264 psi (1.8 MPa), Unannealed	252 °F	122 °C	ASTM D648
264 psi (1.8 MPa), Unannealed	248 °F	120 °C	ISO 75-2/A
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>Optical</b>	<b>Nominal Value (English)</b>	<b>Nominal Value (SI)</b>	<b>Test Method</b>
Light Transmittance	71.0 to 85.0 %	71.0 to 85.0 %	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	