CALIBRE™ MEGARAD™ 2091-15
Polycarbonate Resin

Overview

CALIBRE™ MEGARAD™ 2091 Polycarbonate Resins are designed for single use medical devices (SUDs) that require gamma and electron-beam irradiation and an accelerated schedule for delivery of post-radiated products to customers - potentially 10 to 21 days sooner than currently available radiation-stabilized polycarbonate resins, depending on irradiation conditions. In addition, the resins are meant for applications that require 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
- Mold Release
- Improved Color Compensation

Applications

- Medical Applications

Physical	Nominal Value	(English)	Nominal Value	(SI)	Test Method
Density	1.20	g/cm³	1.20	g/cm³	ASTM D792 ISO 1183/B
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	0.32	%	0.32	%	
Mechanical	**Nominal Value**	**(English)**	**Nominal Value**	**(SI)**	**Test Method**
Tensile Modulus					
-- [1]	334000	psi	2300	MPa	ASTM D638
--	334000	psi	2300	MPa	ISO 527-2/1
Tensile Strength					
Yield [2]	9000	psi	62.1	MPa	ASTM D638
Yield	8990	psi	62.0	MPa	ISO 527-2/50
Break [2]	9900	psi	68.3	MPa	ASTM D638
Break	9860	psi	68.0	MPa	ISO 527-2/50
Tensile Elongation					
Yield [2]	6.0	%	6.0	%	ASTM D638
Yield	6.0	%	6.0	%	ISO 527-2/50
Break [2]	150	%	150	%	ASTM D638
Break	150	%	150	%	ISO 527-2/50
Flexural Strength					
-- [3]	14000	psi	96.5	MPa	ASTM D790
-- [4, 5]	14200	psi	98.0	MPa	ISO 178
Taber Abrasion Resistance	45	%	45	%	ASTM D1044

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
73°F (23°C)	36	ft·lb/in²	75	kJ/m²	ISO 180/A
Unnotched Izod Impact (73°F (23°C))	No Break		No Break		ASTM D256 ISO 180
Instrumented Dart Impact [6]					ASTM D3763
73°F (23°C), Total Energy	720	in·lb	81.3	J	
Tensile Impact Strength	180	ft·lb/in²	378	kJ/m²	ASTM D1822
Hardness	**Nominal Value**	**(English)**	**Nominal Value**	**(SI)**	**Test Method**
Rockwell Hardness (R-Scale)	118		118		ASTM D785

Notes

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

[1] 0.039 in/min (1.0 mm/min)

[2] 2.0 in/min (50 mm/min)

[3] Method I (3 point load), 0.079 in/min (2.0 mm/min)

[4] 0.079 in/min (2.0 mm/min)

[5] 3-points

[6] 11.1 ft/sec (3.39 m/sec)

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