TRINSEO™

CALIBRE™ 2060-3
Polycarbonate Resin

Overview

CALIBRE™ 2060-3 Polycarbonate resin is used in medical applications involving steam or ethylene oxide sterilization - though suitability for use in these applications is dependent upon autoclave cycle times and temperatures. CALIBRE 2060-3 provides exceptional clarity, heat resistance, impact strength and has low contamination levels. The CALIBRE 2000 series of resins have been evaluated with respect to ISO 10993-1 (Biological Evaluation of Medical Devices) and are suitable for use in approved medical applications.

Main Characteristics

- Tested under ISO 10993
- FDA 21 CFR 177.1580
- Lipid resistance

Applications

- Medical application
- Injection or extrusion applications

Physical	Nominal Value	(English)	Nominal Value	(SI)	Test Method
Density	1.20	g/cm³	1.20	g/cm³	ASTM D792 ISO 1183
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	3.5	g/10 min	3.5	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					ISO 62
Saturation, 73°F (23°C)	0.32	%	0.32	%	
Equilibrium, 73°F (23°C), 50% RH	0.12	%	0.12	%	
Mechanical	**Nominal Value**	**(English)**	**Nominal Value**	**(SI)**	**Test Method**
Tensile Modulus					
-- [1]	360000	psi	2480	MPa	ASTM D638
--	334000	psi	2300	MPa	ISO 527-1/1
Tensile Strength					
Yield [2]	8700	psi	60.0	MPa	ASTM D638
Yield	8700	psi	60.0	MPa	ISO 527-2/50
Break [2]	10400	psi	72.0	MPa	ASTM D638
Break	10400	psi	72.0	MPa	ISO 527-2/50
Tensile Elongation					
Yield [2]	6.0	%	6.0	%	ASTM D638
Break [2]	140	%	140	%	ASTM D638
Break	150	%	150	%	ISO 527-2/50
Flexural Modulus					
--	350000	psi	2410	MPa	ASTM D790
-- [3]	348000	psi	2400	MPa	ISO 178
Flexural Strength					
--	14000	psi	96.5	MPa	ASTM D790
-- [3]	14100	psi	97.0	MPa	ISO 178

Impact	Nominal Value	(English)	Nominal Value	(SI)	Test Method
Charpy Notched Impact Strength					ISO 179/1eA
-22°F (-30°C)	6.7	ft·lb/in²	14	kJ/m²	
73°F (23°C)	26	ft·lb/in²	55	kJ/m²	
Notched Izod Impact					
73°F (23°C)	18	ft·lb/in	960	J/m	ASTM D256
73°F (23°C)	44	ft·lb/in²	93	kJ/m²	ISO 180/1A
Instrumented Dart Impact					ASTM D3763
73°F (23°C), Total energy	830	in·lb	93.8	J	
Tensile Impact Strength	300	ft·lb/in²	630	kJ/m²	ASTM D1822
Hardness	**Nominal Value**	**(English)**	**Nominal Value**	**(SI)**	**Test Method**
Rockwell Hardness					ASTM D785
M-Scale	74		74		
R-Scale	118		118		
Thermal	**Nominal Value**	**(English)**	**Nominal Value**	**(SI)**	**Test Method**
Deflection Temperature Under Load					
66 psi (0.45 MPa), Annealed	295	°F	146	°C	ASTM D648 ISO 75-2/B
264 psi (1.8 MPa), Unannealed	270	°F	132	°C	ASTM D648
264 psi (1.8 MPa), Unannealed	266	°F	130	°C	ISO 75-2/A
264 psi (1.8 MPa), Annealed	289	°F	143	°C	ASTM D648 ISO 75-2/A
Vicat Softening Temperature	304	°F	151	°C	ASTM D1525 [4]
CLTE - Flow					
-40 to 176°F (-40 to 80°C)	3.8E-5	in/in/°F	6.8E-5	cm/cm/°C	ASTM D696
--	3.9E-5	in/in/°F	7.0E-5	cm/cm/°C	ISO 11359-2
Optical	**Nominal Value**	**(English)**	**Nominal Value**	**(SI)**	**Test Method**
Refractive Index	1.586		1.586		ASTM D542 ISO 489
Light Transmittance	87.0 to 91.0	%	87.0 to 91.0	%	ASTM D1003
Haze	< 1.00	%	< 1.00	%	ASTM D1003

Injection	Nominal Value	(English)	Nominal Value	(SI)
Drying Temperature	248	°F	120	°C
Drying Time	4.0	hr	4.0	hr
Processing (Melt) Temp	554 to 626	°F	290 to 330	°C
Mold Temperature	176 to 230	°F	80 to 110	°C