

CALIBRE™ 2060-6

Trinseo - Polycarbonate Resin

General Information

Product Description

CALIBRE™ 2060-6 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 2060-6 provides exceptional clarity, heat resistance, impact strength, and processability, and has low contamination levels. The CALIBRE 2000 series of resins have been evaluated by certain biocompatibility tests based on on ISO 10993-1 (Biological Evaluation of Medical Devices) and are suitable for use in approved medical applications.

Main Characteristics:

- Tested under ISO 10993 and USP
- FDA 21 CFR 177.1580

Applications:

- Medical applications
- Injection or Extrusion Applications

General

Features	<ul style="list-style-type: none"> • Biocompatible • Ethylene Oxide Sterilizable • Good Processability 	<ul style="list-style-type: none"> • High Clarity • High Heat Resistance • High Impact Resistance 	<ul style="list-style-type: none"> • Steam Sterilizable
Uses	<ul style="list-style-type: none"> • Medical/Healthcare Applications 		
Agency Ratings	<ul style="list-style-type: none"> • ISO 10993¹ 		
Appearance	<ul style="list-style-type: none"> • Clear/Transparent 		
Forms	<ul style="list-style-type: none"> • Pellets 		
Processing Method	<ul style="list-style-type: none"> • Film Extrusion 	<ul style="list-style-type: none"> • Injection Molding 	

Properties²

Physical	Nominal Value	Unit	Test Method
Density / Specific Gravity	1.20		ASTM D792
Density	1.20	g/cm ³	ISO 1183
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	6.0	g/10 min	ASTM D1238
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	6.0	g/10 min	ISO 1133
Molding Shrinkage - Flow	5.0E-3 to 7.0E-3	in/in	ASTM D955
Molding Shrinkage - Flow	0.50 to 0.70	%	ISO 294-4
Water Absorption (Saturation, 73°F)	0.32	%	ISO 62
Water Absorption (Equilibrium, 73°F, 50% RH)	0.12	%	ISO 62
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus ³	350000	psi	ASTM D638
Tensile Modulus	334000	psi	ISO 527-1/1
Tensile Strength ⁴ (Yield)	8700	psi	ASTM D638
Tensile Stress (Yield)	8700	psi	ISO 527-2/50
Tensile Strength ⁴ (Break)	10400	psi	ASTM D638
Tensile Stress (Break)	10400	psi	ISO 527-2/50
Tensile Elongation ⁴ (Yield)	6.0	%	ASTM D638
Tensile Elongation ⁴ (Break)	140	%	ASTM D638
Tensile Strain (Break)	150	%	ISO 527-2/50

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Mechanical	Nominal Value	Unit	Test Method
Flexural Modulus	350000	psi	ASTM D790
Flexural Modulus ⁵	348000	psi	ISO 178
Flexural Strength	14000	psi	ASTM D790
Flexural Stress ⁵	14100	psi	ISO 178
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength			ISO 179/1eA
-22°F	6.7	ft·lb/in ²	
73°F	26	ft·lb/in ²	
Notched Izod Impact (73°F)	17	ft·lb/in	ASTM D256
Notched Izod Impact Strength (73°F)	44	ft·lb/in ²	ISO 180/1A
Instrumented Dart Impact ⁶ (73°F, Total Energy)	800	in·lb	ASTM D3763
Tensile Impact Strength	280	ft·lb/in ²	ASTM D1822
Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness			ASTM D785
M-Scale	73		
R-Scale	118		
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load (66 psi, Unannealed)	293	°F	ASTM D648
Deflection Temperature Under Load			ASTM D648
264 psi, Unannealed	264	°F	
Deflection Temperature Under Load			ISO 75-2/A
264 psi, Unannealed	259	°F	
Deflection Temperature Under Load (264 psi, Annealed)	288	°F	ASTM D648
Vicat Softening Temperature	304	°F	ASTM D1525 ⁷
CLTE - Flow (-40 to 176°F)	3.8E-5	in/in/°F	ASTM D696
CLTE - Flow	3.9E-5	in/in/°F	ISO 11359-2
Optical	Nominal Value	Unit	Test Method
Refractive Index	1.586		ASTM D542
Refractive Index	1.586		ISO 489
Light Transmittance	87.0 to 91.0	%	ASTM D1003
Haze	< 1.00	%	ASTM D1003

Processing Information

Injection	Nominal Value	Unit
Drying Temperature	248	°F
Drying Time	4.0	hr
Processing (Melt) Temp	554 to 626	°F
Mold Temperature	176 to 230	°F

Notes

¹ Biocompatibility testing following ISO Guidelines 10993 has been completed on select classic resins in this series. Please consult Trinseo for details. ISO guidelines include a sensitization test.

² Typical properties: these are not to be construed as specifications.

³ 0.039 in/min

⁴ 2.0 in/min

⁵ 0.079 in/min

⁶ 11.1 ft/sec

⁷ Rate B (120°C/h), Loading 1 (10 N)