

CALIBRE™ 2061-15

Polycarbonate Resin

Trinseo

Message:

CALIBRE™ 2061-15 resin is suitable for steam and ethylene oxide sterilization required by the health care industry. CALIBRE 2061-15 provides exceptional clarity, heat resistance, impact strength, processability, and has low contamination levels. CALIBRE 2061-15 resin is compliant with ISO 10993 (Biological Evaluation of Medical Devices) and is suitable for use in approved medical applications. This product contains mold release.

Main Characteristics:

Tested under ISO 10993

Applications:

Medical applications

General Information			
UL YellowCard	E54680-101090285		
Additive	Mold Release		
Features	Ethylene Oxide Sterilizable		
	Good Processability		
	High Clarity		
	High Heat Resistance		
	High Impact Resistance		
	Steam Sterilizable		
Uses	Medical/Healthcare Applications		
Agency Ratings	ISO 10993 3		
Forms	Pellets		
Processing Method	Injection Molding		
Multi-Point Data	Specific Heat vs. Temperature (ASTM D3417)		
	Specific Volume vs Temperature (ISO 11403-2)		
	Tensile Stress vs. Strain (ASTM D638)		
	Thermal Conductivity vs. Temperature (ASTM E1530)		
	Viscosity vs. Shear Rate (ASTM D3835)		
Physical	Nominal Value	Unit	Test Method
Specific Gravity			
--	1.20	g/cm ³	ASTM D792, ISO 1183/A
--	1200	kg/m ³	ISO 1183 ¹
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	15	g/10 min	ASTM D1238, ISO 1133
Melt volume-flow rate (300°C/1.2 kg)	12.0	cm ³ /10min	ISO 1133 ²
Molding Shrinkage - Flow	0.50 to 0.70	%	ASTM D955, ISO 294-4
Water Absorption			ASTM D570, ISO 62
23°C, 24 hr	0.15	%	
Equilibrium, 23°C, 50% RH	0.32	%	

Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness			ASTM D785
M-Scale	73		
R-Scale	118		
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
-- ³	2210	MPa	ASTM D638
--	2300	MPa	ISO 527-2/50, ISO 527-2 ⁴
Tensile Strength			
Yield ⁵	62.1	MPa	ASTM D638
Yield	62.0	MPa	ISO 527-2/50
Yield	60.0	MPa	ISO 527-2 ⁶
Break ⁷	68.3	MPa	ASTM D638
Break	68.0	MPa	ISO 527-2/50
Tensile Elongation			
Yield ⁸	6.0	%	ASTM D638
Yield	6.0	%	ISO 527-2/50, ISO 527-2 ⁹
Break ¹⁰	150	%	ASTM D638
Break	150	%	ISO 527-2/50
Nominal strain at break	> 50	%	ISO 527-2 ¹¹
Flexural Modulus			
-- ¹²	2410	MPa	ASTM D790
-- ¹³	2400	MPa	ISO 178
Flexural Strength			
-- ¹⁴	96.5	MPa	ASTM D790
-- ¹⁵	98.0	MPa	ISO 178
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength			
23°C	25	kJ/m ²	ISO 179/1eA
-30°C	12.0	kJ/m ²	ISO 179/1eA ¹⁶
23°C	80.0	kJ/m ²	ISO 179/1eA ¹⁷
Charpy impact strength			ISO 179/1eU ¹⁸
-30°C	No Break		
23°C	No Break		
Notched Izod Impact			
23°C	750	J/m	ASTM D256
23°C	74	kJ/m ²	ISO 180/A
Unnotched Izod Impact (23°C)	No Break		ASTM D256, ISO 180
Instrumented Dart Impact ¹⁹ (23°C, Total Energy)	81.3	J	ASTM D3763
Tensile Impact Strength	378	kJ/m ²	ASTM D1822
Thermal	Nominal Value	Unit	Test Method

Deflection Temperature Under Load			
0.45 MPa, Annealed	139	°C	ASTM D648, ISO 75-2/B
0.45 MPa	144	°C	ISO 75-2 ²⁰
1.8 MPa, Unannealed	122	°C	ASTM D648
1.8 MPa, Unannealed	120	°C	ISO 75-2/A
1.8 MPa, Annealed	136	°C	ASTM D648, ISO 75-2/A
1.8 MPa	130	°C	ISO 75-2 ²¹
Vicat Softening Temperature			
--	148	°C	ASTM D1525 ²²
--	143	°C	ISO 306/B50
50°C/h, B (50N)	148	°C	ISO 306 ²³
CLTE - Flow			
-40 to 82°C	6.8E-5	cm/cm/°C	ASTM D696
--	7.0E-5	cm/cm/°C	ISO 11359-2 ²⁴
Electrical	Nominal Value	Unit	Test Method
Volume Resistivity			
--	2.0E+17	ohms · cm	ASTM D257
--	> 1.0E+13	ohms · m	IEC 60093 ²⁵
Dielectric Strength	17	kV/mm	ASTM D149, IEC 60243-1
Dielectric Constant			
60 Hz	3.00		ASTM D150
1 MHz	3.00		ASTM D150, IEC 60250 ²⁶
100 Hz	3.00		IEC 60250 ²⁷
Dissipation Factor			
50 Hz	1.0E-3		ASTM D150
1 MHz	2.0E-3		ASTM D150, IEC 60250 ²⁸
100 Hz	1.0E-3		IEC 60250 ²⁹
Flammability	Nominal Value	Unit	Test Method
Flame Rating			UL 94
1.50 mm ³⁰	HB		
3.00 mm	HB		
0.750 mm	V-2		
1.50 mm	V-2		
Oxygen index	26	%	ISO 4589-2 ³¹
Optical	Nominal Value	Unit	Test Method
Refractive Index	1.586		ASTM D542, ISO 489
Transmittance ³²	89.0	%	ASTM D1003
Haze ³³	1.0	%	ASTM D1003
NOTE			
1.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.		

2.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
3.	50 mm/min
4.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
5.	50 mm/min
6.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
7.	50 mm/min
8.	50 mm/min
9.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
10.	50 mm/min
11.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
12.	Method I (3 point load), 2.0 mm/min
13.	2.0 mm/min
14.	Method I (3 point load), 2.0 mm/min
15.	2.0 mm/min
16.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
17.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
18.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
19.	3.39 m/sec
20.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
21.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
22.	Rate A (50°C/h), Loading 2 (50 N)
23.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
24.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.

25.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
26.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
27.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
28.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
29.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
30.	This rating not intended to reflect hazards presented by this or any other material under actual fire conditions.
31.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
32.	Measured at 3.2mm thickness on un-colored resin.
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