

Celanex® 2002

Polybutylene Terephthalate

Celanese Corporation

Message:

Celanex 2002 is a general purpose, unreinforced polybutylene terephthalate with a good balance of mechanical properties and processability. Celanex 2002 is a medium flow material.

General Information			
Features	Workability, good		
	Medium liquidity		
	General		
Uses	General		
RoHS Compliance	Contact manufacturer		
Processing Method	Injection molding		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.31	g/cm ³	ASTM D792, ISO 1183
Melt Mass-Flow Rate (MFR)	20	g/10 min	ASTM D1238
Melt Volume-Flow Rate (MVR) (250°C/2.16 kg)	18.0	cm ³ /10min	ISO 1133
Molding Shrinkage			
Flow	1.8 - 2.0	%	ASTM D955
Vertical flow direction	1.8 - 2.0	%	ISO 294-4
Flow direction	1.8 - 2.0	%	ISO 294-4
Water Absorption (Equilibrium, 23°C, 50% RH)	0.19	%	ISO 62
Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness (M-Scale)	78		ISO 2039-2
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
-40°C	3100	MPa	ASTM D638
23°C	3170	MPa	ASTM D638
80°C	469	MPa	ASTM D638
121°C	296	MPa	ASTM D638
--	2600	MPa	ISO 527-2/1A/1
Tensile Strength			
Yield, -40°C	101	MPa	ASTM D638
Yield, 0°C	75.8	MPa	ASTM D638
Yield, 23°C	55.8	MPa	ASTM D638
Yield, 80°C	24.8	MPa	ASTM D638
Yield, 121°C	17.9	MPa	ASTM D638

Yield	60.0	MPa	ISO 527-2/1A/50
Fracture	35.0	MPa	ISO 527-2/1A/50
50% strain	30.0	MPa	ISO 527-2/1A/50
Tensile Elongation			
Yield, -40°C	7.2	%	ASTM D638
Yield, 0°C	4.4	%	ASTM D638
Yield, 23°C	3.2	%	ASTM D638
Yield, 80°C	17	%	ASTM D638
Yield, 121°C	23	%	ASTM D638
Yield	4.0	%	ISO 527-2/1A/50
Fracture, 23°C	200	%	ASTM D638
Fracture	220	%	ISO 527-2/1A/50
Nominal Tensile Strain at Break	> 50	%	ISO 527-2/1A/50
Flexural Modulus (23°C)	2500	MPa	ISO 178
Flexural Stress (23°C)	80.0	MPa	ISO 178
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength			ISO 179/1eA
-30°C	6.0	kJ/m ²	ISO 179/1eA
23°C	6.0	kJ/m ²	ISO 179/1eA
Charpy Unnotched Impact Strength			ISO 179/1eU
-30°C	190	kJ/m ²	ISO 179/1eU
23°C	No Break		ISO 179/1eU
Notched Izod Impact (23°C)	5.0	kJ/m ²	ISO 180/1A
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
0.45 MPa, not annealed	160	°C	ASTM D648
0.45 MPa, not annealed	150	°C	ISO 75-2/B
1.8 MPa, not annealed	55.0	°C	ASTM D648, ISO 75-2/A
Glass Transition Temperature	60.0	°C	ISO 11357-2
Vicat Softening Temperature	190	°C	ISO 306/B50
Melting Temperature	225	°C	ISO 11357-3, ASTM D3418
Linear thermal expansion coefficient			ISO 11359-2
Flow	1.1E-4	cm/cm/°C	ISO 11359-2
Lateral	1.4E-4	cm/cm/°C	ISO 11359-2
Electrical	Nominal Value	Unit	Test Method
Surface Resistivity	1.0E+15	ohms	IEC 60093
Volume Resistivity			
--	1.0E+16	ohms · cm	ASTM D257
--	1.0E+15	ohms · cm	IEC 60093
Dielectric Strength			
-- ¹	17	kV/mm	ASTM D149
--	23	kV/mm	IEC 60243-1

Dielectric Constant			
1 MHz	3.20		ASTM D150
100 Hz	4.00		IEC 60250
1 MHz	3.50		IEC 60250
Dissipation Factor			IEC 60250
100 Hz	1.4E-3		IEC 60250
1 MHz	0.022		IEC 60250
Comparative Tracking Index	600	V	IEC 60112
Flammability	Nominal Value	Unit	Test Method
Flame Rating (0.710 mm)	HB		UL 94
Oxygen Index	22	%	ISO 4589-2
Injection	Nominal Value	Unit	
Drying Temperature	120 - 130	°C	
Drying Time	4.0	hr	
Suggested Max Moisture	0.020	%	
Suggested Max Regrind	25	%	
Hopper Temperature	20.0 - 50.0	°C	
Rear Temperature	230 - 240	°C	
Middle Temperature	235 - 250	°C	
Front Temperature	235 - 250	°C	
Nozzle Temperature	250 - 260	°C	
Processing (Melt) Temp	235 - 260	°C	
Mold Temperature	65.0 - 93.0	°C	
Injection Rate	Moderate-Fast		
Injection instructions			
Feed Temperature: 230 to 240°CZone 4 Temperature: 240 to 260°CManifold Temperature: 250 to 260°C			
NOTE			
1.	Method A (short time)		

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