

Celanex® 7716

Polybutylene Terephthalate

Celanese Corporation

Message:

Celanex 7716 is a 35% glass/mineral reinforced, non exuding, flame retarded polybutylene terephthalate which has an excellent balance of mechanical properties and processability. Celanex 7716 is well suited for electrical applications where warp resistance or very flat surfaces are required.

General Information			
UL YellowCard	E45575-239414		
Filler / Reinforcement	Glass \mineral, 35% filler by weight		
Additive	Flame retardancy		
Features	Bending resistance		
	Workability, good		
	Flame retardancy		
Uses	Electrical/Electronic Applications		
RoHS Compliance	Contact manufacturer		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.69	g/cm ³	ASTM D792, ISO 1183
Molding Shrinkage			
Flow	0.20 - 0.50	%	ASTM D955
Vertical flow direction	0.60 - 0.80	%	ISO 294-4
Flow direction	0.25 - 0.45	%	ISO 294-4
Water Absorption (Equilibrium, 23°C, 50% RH)	0.10	%	ISO 62
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus	10800	MPa	ISO 527-2/1A/1
Tensile Strength			
Fracture, 23°C	77.2	MPa	ASTM D638
Fracture	83.0	MPa	ISO 527-2/1A/5
Tensile Strain (Break)	1.6	%	ISO 527-2/1A/5
Flexural Modulus (23°C)	11700	MPa	ISO 178
Flexural Stress (23°C)	140	MPa	ISO 178
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength			ISO 179/1eA
-30°C	5.0	kJ/m ²	ISO 179/1eA
23°C	5.0	kJ/m ²	ISO 179/1eA
Charpy Unnotched Impact Strength			ISO 179/1eU
-30°C	21	kJ/m ²	ISO 179/1eU
23°C	22	kJ/m ²	ISO 179/1eU
Notched Izod Impact			ISO 180/1A

-30°C	4.5	kJ/m ²	ISO 180/1A
23°C	4.9	kJ/m ²	ISO 180/1A
Unnotched Izod Impact Strength (23°C)	19	kJ/m ²	ISO 180/1U
Thermal	Nominal Value	Unit	Test Method
Heat Deflection Temperature			
0.45 MPa, not annealed	222	°C	ISO 75-2/B
0.45 MPa, annealed	214	°C	ASTM D648
1.8 MPa, not annealed	191	°C	ASTM D648
1.8 MPa, not annealed	194	°C	ISO 75-2/A
Glass Transition Temperature ¹	60.0	°C	ISO 11357-2
Melting Temperature ²	225	°C	ISO 11357-3, ASTM D3418
Linear thermal expansion coefficient			ISO 11359-2
Flow	3.1E-5	cm/cm/°C	ISO 11359-2
Lateral	4.6E-5	cm/cm/°C	ISO 11359-2
Electrical	Nominal Value	Unit	Test Method
Surface Resistivity	5.0E+16	ohms	IEC 60093
Volume Resistivity			
--	1.0E+16	ohms·cm	ASTM D257
--	2.0E+16	ohms·cm	IEC 60093
Dielectric Strength			
-- ³	26	kV/mm	ASTM D149
--	24	kV/mm	IEC 60243-1
Dielectric Constant			
1 MHz	3.60		ASTM D150
100 Hz	4.20		IEC 60250
1 MHz	3.90		IEC 60250
Dissipation Factor			
1 MHz	0.010		ASTM D150
1 MHz	0.019		IEC 60250
Arc Resistance	124	sec	ASTM D495
Comparative Tracking Index			
--	200	V	IEC 60112
--	250	V	ASTM D3638
Flammability	Nominal Value	Unit	Test Method
Flame Rating (0.900 mm)	V-0		UL 94
Injection	Nominal Value	Unit	
Drying Temperature	120 - 130	°C	
Drying Time	4.0	hr	
Suggested Max Moisture	0.020	%	
Suggested Max Regrind	50	%	
Hopper Temperature	20.0 - 50.0	°C	
Rear Temperature	230 - 240	°C	

Middle Temperature	235 - 250	°C
Front Temperature	235 - 250	°C
Nozzle Temperature	240 - 255	°C
Processing (Melt) Temp	235 - 255	°C
Mold Temperature	65.0 - 96.0	°C
Injection Rate	Moderate-Fast	
Back Pressure	0.00 - 0.345	MPa

Injection instructions

Manifold Temperature: 255 to 260°C Zone 4 Temperature: 240 to 255°C Feed Temperature: 230 to 240°C

NOTE

1.	10°C/min
2.	10°C/min
3.	Method A (short time)

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