

Celanex® 3316

Polybutylene Terephthalate

Celanese Corporation

Message:

Celanex 3316 is a non-exuding flame retarded (UL and CSA approved V-0 at 1/32 inch and 5V at 1/16 inch), 30% fiberglass reinforced polybutylene terephthalate which has an excellent balance of mechanical properties and processability. It is well suited for electrical connector applications where its UL approved 50% regrind use capability allows maximum use of purchased product.

General Information			
UL YellowCard	E42337-234663	E42337-234678	E42337-234679
	E45575-239391	E45575-239392	
Filler / Reinforcement	Glass fiber reinforced material, 30% filler by weight		
Additive	Flame retardancy		
Features	Workability, good		
	Flame retardancy		
Uses	Electrical/Electronic Applications		
	Connector		
RoHS Compliance	Contact manufacturer		
Multi-Point Data	Isothermal Stress vs. Strain (ISO 11403-1)		
	Shear Stress vs. Shear Rate (ISO 11403-1)		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.66	g/cm ³	ASTM D792, ISO 1183
Melt Volume-Flow Rate (MVR) (250°C/2.16 kg)	7.00	cm ³ /10min	ISO 1133
Molding Shrinkage			
Flow	0.30 - 0.50	%	ASTM D955
Vertical flow direction	0.80 - 1.3	%	ISO 294-4
Flow direction	0.10 - 0.80	%	ISO 294-4
Water Absorption (Equilibrium, 23°C, 50% RH)	0.16	%	ISO 62
Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness (M-Scale)	89		ISO 2039-2
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
23°C	9650	MPa	ASTM D638
--	10700	MPa	ISO 527-2/1A/1
Tensile Strength			
Fracture, 23°C	134	MPa	ASTM D638

Fracture	135	MPa	ISO 527-2/1A/5
Tensile Elongation			
Fracture, 23°C	2.5	%	ASTM D638
Fracture	2.5	%	ISO 527-2/1A/5
Flexural Modulus (23°C)	10300	MPa	ISO 178
Flexural Stress (23°C)	200	MPa	ISO 178
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength			ISO 179/1eA
-30°C	8.5	kJ/m ²	ISO 179/1eA
23°C	8.5	kJ/m ²	ISO 179/1eA
Charpy Unnotched Impact Strength			ISO 179/1eU
-30°C	42	kJ/m ²	ISO 179/1eU
23°C	59	kJ/m ²	ISO 179/1eU
Notched Izod Impact (23°C)	7.7	kJ/m ²	ISO 180/1A
Thermal	Nominal Value	Unit	Test Method
Heat Deflection Temperature			
0.45 MPa, not annealed	220	°C	ISO 75-2/B
0.45 MPa, annealed	221	°C	ASTM D648
1.8 MPa, not annealed	206	°C	ASTM D648
1.8 MPa, not annealed	208	°C	ISO 75-2/A
8.0 MPa, not annealed	165	°C	ISO 75-2/C
Vicat Softening Temperature	225	°C	ISO 306/B50
Melting Temperature ¹	225	°C	ISO 11357-3, ASTM D3418
Linear thermal expansion coefficient			ISO 11359-2
Flow	2.5E-5	cm/cm/°C	ISO 11359-2
Lateral	7.7E-5	cm/cm/°C	ISO 11359-2
Electrical	Nominal Value	Unit	Test Method
Surface Resistivity	1.0E+15	ohms	IEC 60093
Volume Resistivity			
--	2.0E+16	ohms · cm	ASTM D257
--	1.0E+15	ohms · cm	IEC 60093
Dielectric Strength			
-- ²	20	kV/mm	ASTM D149
--	34	kV/mm	IEC 60243-1
Dielectric Constant			
1 MHz	3.50		ASTM D150
100 Hz	3.60		IEC 60250
1 MHz	2.90		IEC 60250
Dissipation Factor			
1 MHz	0.020		ASTM D150
100 Hz	3.3E-3		IEC 60250
1 MHz	0.015		IEC 60250

Arc Resistance	106	sec	ASTM D495
Comparative Tracking Index	250	V	IEC 60112, ASTM D3638
Flammability	Nominal Value	Unit	Test Method
Flame Rating			UL 94
0.380 mm	V-0		UL 94
1.50 mm	5VA		UL 94
Oxygen Index	30	%	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	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	250 - 255	°C	
Processing (Melt) Temp	235 - 255	°C	
Mold Temperature	65.0 - 93.0	°C	
Injection Rate	Moderate-Fast		
Back Pressure	0.00 - 0.345	MPa	
Injection instructions			
Manifold Temperature: 250 to 260°CZone 4 Temperature: 240 to 255°CFeed Temperature: 230 to 240°C			
NOTE			
1.	10°C/min		
2.	Method A (short time)		

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