Celanex® 3316

Celanese Corporation - Polybutylene Terephthalate

Monday, November 4, 2019

General Information

Product Description

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			
Material Status	• Commercial: Active		
Availability	• Africa & Middle East • Asia Pacific	• Europe • Latin America	• North America
Filler / Reinforcement	• Glass Fiber, 30% Filler by Weight		
Additive	• Flame Retardant		
Features	• Flame Retardant	• Good Processability	• Non-Exuding
Uses	• Connectors		
RoHS Compliance	• Contact Manufacturer		
Automotive Specifications	• ASTM D5927 TPES013 G30 Color: Black • ASTM D5927 TPES013 G30 Color: Natural	• GM GMP.PBT.029 Color: Black • GM GMP.PBT.029 Color: Natural	

ASTM & ISO Properties [1]

Physical	Nominal Value	Unit	Test Method
Density	1.66	g/cm³	ISO 1183
Melt Mass-Flow Rate (MFR) (250°C/2.16 kg)	12	g/10 min	ISO 1133
Melt Volume-Flow Rate (MVR) (250°C/2.16 kg)	7.00	cm³/10min	ISO 1133
Molding Shrinkage			ISO 294-4
Across Flow	0.80 to 1.1	%	
Flow	0.30 to 0.50	%	
Water Absorption (Saturation, 73°F)	0.40	%	ISO 62
Water Absorption (Equilibrium, 73°F, 50% RH)	0.16	%	ISO 62
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Modulus	1.55E+6	psi	ISO 527-2/1A
Tensile Stress (Break)	19600	psi	ISO 527-2/1A/5
Tensile Strain (Break)	2.5	%	ISO 527-2/1A/5
Flexural Modulus (73°F)	1.49E+6	psi	ISO 178
Flexural Stress (73°F)	29000	psi	ISO 178
Impact	**Nominal Value**	**Unit**	**Test Method**
Charpy Notched Impact Strength			ISO 179/1eA
-22°F	4.0	ft·lb/in²	
73°F	4.0	ft·lb/in²	
Charpy Unnotched Impact Strength			ISO 179/1eU
-22°F	20	ft·lb/in²	
73°F	28	ft·lb/in²	
Notched Izod Impact Strength (73°F)	3.7	ft·lb/in²	ISO 180/1A
Hardness	**Nominal Value**	**Unit**	**Test Method**
Rockwell Hardness (M-Scale)	89		ISO 2039-2

Celanex® 3316

Celanese Corporation - Polybutylene Terephthalate

Hardness	Nominal Value	Unit	Test Method
Shore Hardness (Shore D, 15 sec)	85		ISO 868
Thermal	**Nominal Value**	**Unit**	**Test Method**
Heat Deflection Temperature (66 psi, Unannealed)	428	°F	ISO 75-2/B
Heat Deflection Temperature (264 psi, Unannealed)	406	°F	ISO 75-2/A
Heat Deflection Temperature (1160 psi, Unannealed)	329	°F	ISO 75-2/C
Vicat Softening Temperature	437	°F	ISO 306/B50
Melting Temperature [2]	437	°F	ISO 11357-3
CLTE - Flow	1.4E-5	in/in/°F	ISO 11359-2
CLTE - Transverse	4.3E-5	in/in/°F	ISO 11359-2
Electrical	**Nominal Value**	**Unit**	**Test Method**
Surface Resistivity	1.0E+15	ohms	IEC 60093
Volume Resistivity	1.0E+15	ohms·cm	IEC 60093
Electric Strength	860	V/mil	IEC 60243-1
Relative Permittivity			IEC 60250
100 Hz	3.60		
1 MHz	2.90		
Dissipation Factor			IEC 60250
100 Hz	3.3E-3		
1 MHz	0.015		
Comparative Tracking Index	250	V	IEC 60112
Flammability	**Nominal Value**	**Unit**	**Test Method**
Flame Rating			UL 94
0.015 in	V-0		
0.06 in	5VA		
Oxygen Index	30	%	ISO 4589-2

Processing Information

Injection	Nominal Value	Unit
Drying Temperature	248 to 266	°F
Drying Time	4.0	hr
Suggested Max Moisture	0.020	%
Suggested Max Regrind	50	%
Hopper Temperature	68 to 122	°F
Rear Temperature	446 to 464	°F
Middle Temperature	455 to 482	°F
Front Temperature	455 to 482	°F
Nozzle Temperature	482 to 500	°F
Processing (Melt) Temp	455 to 491	°F
Mold Temperature	149 to 199	°F
Injection Rate	Moderate-Fast	
Back Pressure	0.00 to 50.0	psi

Injection Notes

Die Temperature: 250 to 255°C
Feed Temperature: 230 to 240°C
Zone 4 Temperature: 240 to 255°C

Notes

[1] Typical properties: these are not to be construed as specifications.

[2] 10°C/min