

Celanex® 4016

Polybutylene Terephthalate

Celanese Corporation

Message:

Non-exuding, unfilled, flame retardant polybutylene terephthalate which has an excellent balance of mechanical properties and processability. Celanex 4016 is well suited for applications requiring improved toughness.

General Information			
UL YellowCard	E45575-239396		
Additive	Impact modifier		
Features	Impact modification		
	Workability, good		
	Good toughness		
	Flame retardancy		
RoHS Compliance	Contact manufacturer		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.45	g/cm ³	ASTM D792, ISO 1183
Molding Shrinkage			
Flow	2.4 - 2.8	%	ASTM D955
Vertical flow direction	1.7 - 1.9	%	ISO 294-4
Flow direction	1.7 - 1.9	%	ISO 294-4
Water Absorption (Equilibrium, 23°C, 50% RH)	0.16	%	ISO 62
Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness (M-Scale)	60		ISO 2039-2
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
23°C	2550	MPa	ASTM D638
--	2800	MPa	ISO 527-2/1A/1
Tensile Strength			
Yield, 23°C	50.3	MPa	ASTM D638
Yield	55.0	MPa	ISO 527-2/1A/50
Fracture, 23°C	35.5	MPa	ASTM D638
Tensile Elongation			
Yield, 23°C	3.5	%	ASTM D638
Yield	3.7	%	ISO 527-2/1A/50
Fracture, 23°C	37	%	ASTM D638
Fracture	38	%	ISO 527-2/1A/50
Nominal Tensile Strain at Break	38	%	ISO 527-2/1A/50
Flexural Modulus (23°C)	2630	MPa	ISO 178

Flexural Stress (23°C)	76.0	MPa	ISO 178
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength			ISO 179/1eA
-30°C	8.1	kJ/m ²	ISO 179/1eA
23°C	8.1	kJ/m ²	ISO 179/1eA
Charpy Unnotched Impact Strength			ISO 179/1eU
-30°C	110	kJ/m ²	ISO 179/1eU
23°C	250	kJ/m ²	ISO 179/1eU
Notched Izod Impact (23°C)	7.7	kJ/m ²	ISO 180/1A
Unnotched Izod Impact Strength (23°C)	No Break		ISO 180/1U
Thermal	Nominal Value	Unit	Test Method
Heat Deflection Temperature			
0.45 MPa, not annealed	159	°C	ISO 75-2/B
0.45 MPa, annealed	156	°C	ASTM D648
1.8 MPa, not annealed	62.8	°C	ASTM D648
1.8 MPa, not annealed	62.0	°C	ISO 75-2/A
Glass Transition Temperature ¹	48.0	°C	ISO 11357-2
Melting Temperature ²	225	°C	ISO 11357-3, ASTM D3418
Linear thermal expansion coefficient			ISO 11359-2
Flow	1.0E-4	cm/cm/°C	ISO 11359-2
Lateral	1.0E-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			
-- ³	> 28	kV/mm	ASTM D149
--	50	kV/mm	IEC 60243-1
Dielectric Constant			
1 MHz	3.40		ASTM D150
100 Hz	3.10		IEC 60250
1 MHz	3.10		IEC 60250
Dissipation Factor			
1 MHz	0.010		ASTM D150
1 MHz	0.020		IEC 60250
Arc Resistance	80.0	sec	ASTM D495
Comparative Tracking Index	250	V	IEC 60112, ASTM D3638
Flammability	Nominal Value	Unit	Test Method
Flame Rating (0.850 mm)	V-0		UL 94
Injection	Nominal Value	Unit	Test Method
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	Fast	
Back Pressure	0.00 - 0.345	MPa

Injection instructions

Manifold Temperature: 250 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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Recommended distributors for this material

Susheng Import & Export Trading Co.,Ltd.

Tel: +86 21 5895 8519

Phone: +86 13424755533

Email: sales@su-jiao.com

No. 215, Lianhe North Road, Fengxian District, Shanghai, China

