Celanex® 4016

Ticona - Polybutylene Terephthalate

Monday, June 17, 2013

General Information

Product Description

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

Material Status	• Commercial: Active		
Availability	• Africa & Middle East • Asia Pacific	• Europe • Latin America	• North America • South America
Additive	• Impact Modifier		
Features	• Flame Retardant • Good Processability	• Good Toughness • Impact Modified	
RoHS Compliance	• Contact Manufacturer		
Automotive Specifications	• CHRYSLER MS-DB400 CPN3945 Color: Color As Noted On Drawing • CHRYSLER MS-DB400 CPN3946 Color: Color As Noted On Drawing		

ASTM & ISO Properties [1]

Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.45		ASTM D792
Density	1.45	g/cm³	ISO 1183
Molding Shrinkage - Flow	0.024 to 0.028	in/in	ASTM D955
Molding Shrinkage			ISO 294-4
Across Flow	1.7 to 1.9	%	
Flow	1.7 to 1.9	%	
Water Absorption (Equilibrium, 73°F, 50% RH)	0.16	%	ISO 62

Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus (73°F)	370000	psi	ASTM D638
Tensile Modulus	406000	psi	ISO 527-2/1A/1
Tensile Strength (Yield, 73°F)	7300	psi	ASTM D638
Tensile Stress (Yield)	7980	psi	ISO 527-2/1A/50
Tensile Strength (Break, 73°F)	5150	psi	ASTM D638
Tensile Elongation (Yield, 73°F)	3.5	%	ASTM D638
Tensile Strain (Yield)	3.7	%	ISO 527-2/1A/50
Tensile Elongation (Break, 73°F)	37	%	ASTM D638
Tensile Strain (Break)	38	%	ISO 527-2/1A/50
Nominal Tensile Strain at Break	38	%	ISO 527-2/1A/50
Flexural Modulus (73°F)	381000	psi	ISO 178
Flexural Strength (73°F)	11000	psi	ISO 178

Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength			ISO 179/1eA
-22°F	3.9	ft·lb/in²	
73°F	3.9	ft·lb/in²	
Charpy Unnotched Impact Strength			ISO 179/1eU
-22°F	50	ft·lb/in²	
73°F	120	ft·lb/in²	

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Impact	Nominal Value	Unit	Test Method
Notched Izod Impact Strength (73°F)	3.7	ft·lb/in²	ISO 180/1A
Unnotched Izod Impact Strength (73°F)	No Break		ISO 180/1U
Hardness	**Nominal Value**	**Unit**	**Test Method**
Rockwell Hardness (M-Scale)	60		ISO 2039-2
Thermal	**Nominal Value**	**Unit**	**Test Method**
Heat Deflection Temperature (66 psi, Unannealed)	318	°F	ISO 75-2/B
Deflection Temperature Under Load (66 psi, Annealed)	313	°F	ASTM D648
Deflection Temperature Under Load			ASTM D648
264 psi, Unannealed	145	°F	
Heat Deflection Temperature (264 psi, Unannealed)	144	°F	ISO 75-2/A
Glass Transition Temperature [2]	118	°F	ISO 11357-2
Peak Melting Temperature	437	°F	ASTM D3418
Melting Temperature [2]	437	°F	ISO 11357-3
CLTE - Flow	0.000056	in/in/°F	ISO 11359-2
CLTE - Transverse	0.000056	in/in/°F	ISO 11359-2
Electrical	**Nominal Value**	**Unit**	**Test Method**
Surface Resistivity	1.0E+15	ohm	IEC 60093
Volume Resistivity	1.0E+16	ohm·cm	ASTM D257
Volume Resistivity	1.0E+15	ohm·cm	IEC 60093
Dielectric Strength [3]	> 700	V/mil	ASTM D149
Electric Strength	1300	V/mil	IEC 60243-1
Dielectric Constant (1 MHz)	3.40		ASTM D150
Relative Permittivity			IEC 60250
100 Hz	3.10		
1 MHz	3.10		
Dissipation Factor (1 MHz)	0.010		ASTM D150
Dissipation Factor (1 MHz)	0.020		IEC 60250
Arc Resistance	80.0	sec	ASTM D495
Comparative Tracking Index	250	V	ASTM D3638
Comparative Tracking Index	250	V	IEC 60112
Flammability	**Nominal Value**	**Unit**	**Test Method**
Flame Rating (0.0335 in)	V-0		UL 94

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	68.0 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 491	°F
Processing (Melt) Temp	455 to 491	°F
Mold Temperature	149 to 199	°F
Injection Rate	Fast	
Back Pressure	0.00 to 50.0	psi

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Injection Notes

Manifold Temperature: 250 to 260°C
Zone 4 Temperature: 240 to 255°C
Feed Temperature: 230 to 240°C

Notes

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

[2] 10°C/min

[3] Method A (Short-Time)

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