

Celanex® 3100-2

Polybutylene Terephthalate

Celanese Corporation

Message:

Celanex 3100 is a general purpose, 7.5% glass reinforced polybutylene terephthalate with a good balance of mechanical properties and processability. Celanex 3100 is a high flow material.

General Information			
UL YellowCard	E45575-239371		
Filler / Reinforcement	Glass fiber reinforced material, 7.5% filler by weight		
Features	Workability, good		
RoHS Compliance	Contact manufacturer		
Multi-Point Data	Shear Modulus vs. Temperature (ISO 11403-1)		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.35	g/cm ³	ASTM D792, ISO 1183
Melt Mass-Flow Rate (MFR)	17	g/10 min	ASTM D1238
Melt Volume-Flow Rate (MVR) (250°C/2.16 kg)	18.0	cm ³ /10min	ISO 1133
Molding Shrinkage			
Flow	0.60 - 1.0	%	ASTM D955
Vertical flow direction	1.0 - 1.4	%	ISO 294-4
Flow direction	0.60 - 1.0	%	ISO 294-4
Water Absorption (Equilibrium, 23°C, 50% RH)	0.20	%	ISO 62
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus (23°C)	3100	MPa	ASTM D638
Tensile Strength			
Yield, 23°C	79.3	MPa	ASTM D638
Fracture, 23°C	66.9	MPa	ASTM D638
Fracture	78.0	MPa	ISO 527-2/1A/5
Tensile Elongation			
Fracture, 23°C	8.5	%	ASTM D638
Fracture	8.0	%	ISO 527-2/1A/5
Flexural Modulus (23°C)	3550	MPa	ISO 178
Flexural Stress (23°C)	105	MPa	ISO 178
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength			ISO 179/1eA
-30°C	5.5	kJ/m ²	ISO 179/1eA
23°C	6.0	kJ/m ²	ISO 179/1eA
Charpy Unnotched Impact Strength			ISO 179/1eU
-30°C	190	kJ/m ²	ISO 179/1eU

23°C	No Break		ISO 179/1eU
Notched Izod Impact (23°C)	3.8	kJ/m ²	ISO 180/1A
Unnotched Izod Impact Strength (23°C)	23	kJ/m ²	ISO 180/1U
Thermal	Nominal Value	Unit	Test Method
Heat Deflection Temperature			
0.45 MPa, not annealed	206	°C	ISO 75-2/B
1.8 MPa, not annealed	143	°C	ISO 75-2/A
Glass Transition Temperature ¹	60.0	°C	ISO 11357-2
Vicat Softening Temperature	185	°C	ISO 306/B50
Melting Temperature ²	225	°C	ISO 11357-3, ASTM D3418
CLTE - Flow	1.3E-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+15	ohms · cm	ASTM D257
--	> 1.0E+13	ohms · cm	IEC 60093
Dielectric Strength			
-- ³	19	kV/mm	ASTM D149
--	23	kV/mm	IEC 60243-1
Relative Permittivity			
100 Hz	4.00		IEC 60250
1 MHz	3.60		IEC 60250
Dissipation Factor			
100 Hz	1.3E-3		IEC 60250
1 MHz	0.020		IEC 60250
Arc Resistance	130	sec	ASTM D495
Comparative Tracking Index	250	V	ASTM D3638
Flammability	Nominal Value	Unit	Test Method
Flame Rating (0.710 mm)	HB		UL 94
Oxygen Index	22	%	ISO 4589-2
Fill Analysis	Nominal Value	Unit	Test Method
Density of Melt	1.110	g/cm ³	Internal method
Ejection Temperature	219	°C	Internal method
Specific Heat Capacity of Melt	1970	J/kg/°C	Internal method
Thermal Conductivity of Melt	0.13	W/m/K	Internal method
Injection	Nominal Value	Unit	
Drying Temperature	120 - 130	°C	
Drying Time	4.0	hr	
Suggested Max Moisture	0.020	%	
Suggested Max Regrind	25	%	
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 - 260	°C
Processing (Melt) Temp	235 - 260	°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°C Zone 4 Temperature: 240 to 260°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

