

CELANEX® 2001FC

unreinforced, hydrolytically more stable, PBT polymer extrusion grade, for use in food contact applications
Celanex 2001FC is a high viscosity, unreinforced polybutylene terephthalate resin with improved hydrolysis resistance, developed for use in films, sheet, profiles, rods and tubes with food contact compliance. Celanex 2001FC exhibits the high melt strength required for these kind of extrusion applications.

Product information

Part Marking Code	> PBT <	ISO 11469
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Rheological properties

Melt volume-flow rate	6.5 cm ³ /10min	ISO 1133
Melt mass-flow rate	7.5 g/10min	ISO 1133
Temperature	250 °C	
Load	2.16 kg	
Melt mass-flow rate, Temperature	250 °C	
Melt mass-flow rate, Load	2.16 kg	
Moulding shrinkage range, parallel	1.8 - 2.0 %	ISO 294-4, 2577
Moulding shrinkage range, normal	1.8 - 2.0 %	ISO 294-4, 2577

Typical mechanical properties

Tensile Modulus	2600 MPa	ISO 527-1/-2
Yield stress, 50mm/min	60 MPa	ISO 527-1/-2
Yield strain, 50mm/min	6 %	ISO 527-1/-2
Stress at 50% strain	33 MPa	ISO 527-1/-2
Stress at break, 50mm/min	37 MPa	ISO 527-1/-2
Nominal strain at break	>50 %	ISO 527-1/-2
Strain at break, 50mm/min	200 %	ISO 527-1/-2
Flexural Modulus	2500 MPa	ISO 178
Flexural Strength	80 MPa	ISO 178
Charpy impact strength, 23°C	NB kJ/m ²	ISO 179/1eU
Charpy impact strength, -30°C	NB kJ/m ²	ISO 179/1eU
Charpy notched impact strength, 23°C	7 kJ/m ²	ISO 179/1eA
Charpy notched impact strength, -30°C	4.2 kJ/m ²	ISO 179/1eA
Izod notched impact strength, 23°C	5.5 kJ/m ²	ISO 180/1A
Hardness, Rockwell, M-scale	72	ISO 2039-2
Shore D hardness, 15s	79	ISO 48-4 / ISO 868

Thermal properties

Melting temperature, 10°C/min	225 °C	ISO 11357-1/-3
Glass transition temperature, 10°C/min	60 °C	ISO 11357-1/-3
Temp. of deflection under load, 1.8 MPa	50 °C	ISO 75-1/-2
Temp. of deflection under load, 0.45 MPa	150 °C	ISO 75-1/-2
Vicat softening temperature, 50°C/h, 50N	185 °C	ISO 306
Coeff. of linear therm. expansion, parallel	130 E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal	100 E-6/K	ISO 11359-1/-2

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Electrical properties

Relative permittivity, 100Hz	3	IEC 62631-2-1
Relative permittivity, 1MHz	3.2	IEC 62631-2-1
Dissipation factor, 1MHz	200 E-4	IEC 62631-2-1
Volume resistivity	>1E13 Ohm.m	IEC 62631-3-1
Surface resistivity	>1E15 Ohm	IEC 62631-3-2
Electric strength	15 kV/mm	IEC 60243-1
Comparative tracking index	PLC 0 PLC	UL 746A

Other properties

Humidity absorption, 2mm	0.2 %	Sim. to ISO 62
Water absorption, 2mm	0.45 %	Sim. to ISO 62
Density	1310 kg/m ³	ISO 1183

Injection

Drying Temperature	120 - 130 °C
Drying Time, Dehumidified Dryer	4 h
Processing Moisture Content	0.02 %
Max. mould temperature	65 - 93 °C
Injection speed	medium-fast

Characteristics

Food contact	FDA 21 CFR
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Processing Texts

Pre-drying	To avoid hydrolytic degradation during processing, CELANEX resins have to be dried to a moisture level equal to or less than 0.02%. Drying should be done in a dehumidifying hopper dryer capable of dewpoints <-40°F (-40°C) at 250°F (121°C) for 4 hours.
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Longer pre-drying times/storage	For subsequent storage of the material in the dryer until processed (<= 60 h) it is necessary to lower the temperature to 100° C.
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