

CELANEX® 1400FC | PBT | Unfilled

Description

Celanex 1400FC is a general purpose, unreinforced polybutylene terephthalate with a good balance of mechanical properties and processability for use in food contact applications. Celanex 1400FC is a high flow material.

Physical properties	Value	Unit	Test Standard
Density	1310	kg/m ³	ISO 1183
Mold shrinkage - parallel	1.8-2.0	%	ISO 294-4

Mechanical properties	Value	Unit	Test Standard
Tensile modulus (1mm/min)	2700	MPa	ISO 527-2/1A
Tensile stress at yield (50mm/min)	60	MPa	ISO 527-2/1A
Tensile strain at yield (50mm/min)	4	%	ISO 527-2/1A
Nominal strain at break (50mm/min)	38	%	ISO 527-2/1A
Flexural modulus (23°C)	2200	MPa	ISO 178
Flexural strength (23°C)	80	MPa	ISO 178
Notched impact strength (Izod) @ 23°C	3.7	kJ/m ²	ISO 180/1A
Rockwell hardness	72	M-Scale	ISO 2039-2

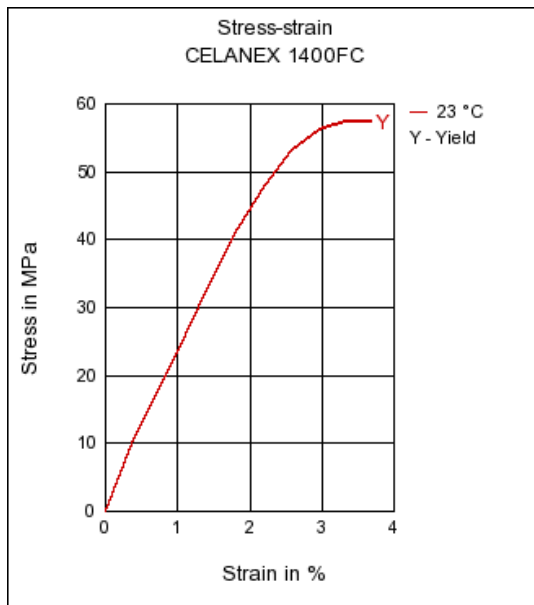
Thermal properties	Value	Unit	Test Standard
Melting temperature (10°C/min)	225	°C	ISO 11357-1,-2,-3
Glass transition temperature (10°C/min)	60	°C	ISO 11357-1,-2,-3
DTUL @ 1.8 MPa	58	°C	ISO 75-1/-2
DTUL @ 0.45 MPa	142	°C	ISO 75-1/-2
Coeff.of linear therm. expansion (parallel)	1.1	E-4/°C	ISO 11359-2
Flammability at thickness h	HB	class	UL94
thickness tested (h)	0.75	mm	UL94

Electrical properties	Value	Unit	Test Standard
Relative permittivity - 1 MHz	3.2	-	IEC 60250
Dissipation factor - 1 MHz	200	E-4	IEC 60250
Volume resistivity	1E13	Ohm*m	IEC 60093
Surface resistivity	1E15	Ohm	IEC 60093
Electric strength	15	kV/mm	IEC 60243-1

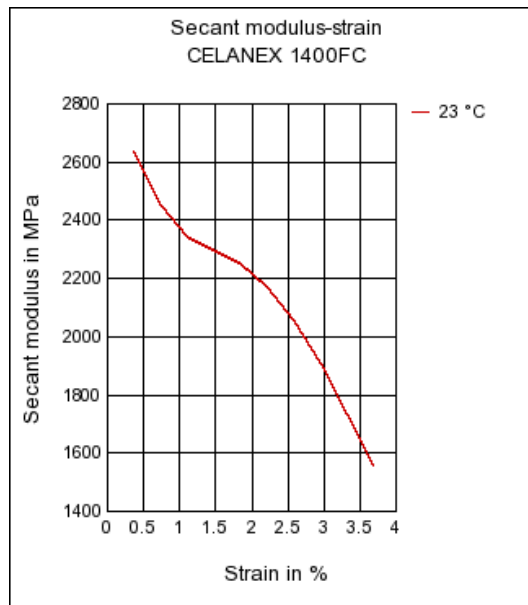
Test specimen production	Value	Unit	Test Standard
Processing conditions acc. ISO	7792-2	-	Internal
Injection molding melt temperature	243	°C	ISO 294
Injection molding mold temperature	82	°C	ISO 294
Injection molding flow front velocity	300	mm/s	ISO 294
Injection molding hold pressure	48	MPa	ISO 294

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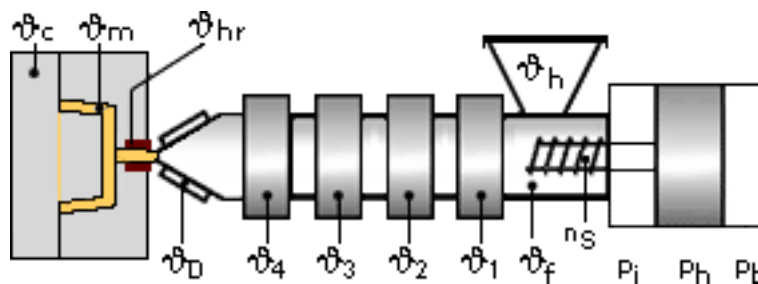
Stress-strain



Secant modulus-strain



Typical injection moulding processing conditions



Pre Drying:

Necessary low maximum residual moisture content: 0.02%

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.

For subsequent storage of the material in the dryer until processed (<= 60 h) it is necessary to lower the temperature to 100° C.

Drying time: 4 h

Drying temperature: 120 - 130 °C

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Temperature:

	°Manifold	°Mold	°Melt	°Nozzle	°Zone4	°Zone3	°Zone2	°Zone1	°Feed	°Hopper
min (°C)	250	65	235	250	240	235	235	230	230	20
max (°C)	260	93	260	260	260	250	250	240	240	50

Speed:

Injection speed: medium-fast

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General Disclaimer

NOTICE TO USERS: Values shown are based on testing of laboratory test specimens and represent data that fall within the standard range of properties for natural material. These values alone do not represent a sufficient basis for any part design and are not intended for use in establishing maximum, minimum, or ranges of values for specification purposes. Colorants or other additives may cause significant variations in data values.

Properties of molded parts can be influenced by a wide variety of factors including, but not limited to, material selection, additives, part design, processing conditions and environmental exposure. Any determination of the suitability of a particular material and part design for any use contemplated by the users and the manner of such use is the sole responsibility of the users, who must assure themselves that the material as subsequently processed meets the needs of their particular product or use.

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We strongly recommend that users seek and adhere to the manufacturer's current instructions for handling each material they use, and entrust the handling of such material to adequately trained personnel only. Please call the telephone numbers listed (+49 (0) 69 30516299 for Europe and +1 859-372-3244 for the Americas) for additional technical information. Call Customer Services for the appropriate Materials Safety Data Sheets (MSDS) before attempting to process our products.

The products mentioned herein are not intended for use in medical or dental implants.

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