Celanese
The chemistry inside innovation™

CELANEX® 3300-2FC

CELANEX® PBT

Celanex 3300-2FC is a general purpose, high flow, 30% glass reinforced, polybutylene terephthalate, containing an internal lubricant, that offers a superior combination of mechanical, electrical, and thermal properties for use in food contact applications. This grade provides excellent processability and good chemical resistance.

Product information

Resin Identification	PBT-GF30		ISO 1043
Part Marking Code	>PBT-GF30<		ISO 11469

Rheological properties

Melt volume-flow rate	16	cm^3/10min	ISO 1133
Temperature	482	°F	
Load	4.76	lb	
Viscosity number	2770	in^3/lb	ISO 307, 1628
Intrinsic viscosity	0.75		ISO 307, 1628
Molding shrinkage range, parallel	0.3 - 0.7	%	ISO 294-4, 2577
Molding shrinkage range, normal	0.7 - 1.1	%	ISO 294-4, 2577

Typical mechanical properties

Tensile modulus	1.44E6	psi	ISO 527-1/-2
Tensile stress at break, 5mm/min	20300	psi	ISO 527-1/-2
Tensile strain at break, 5mm/min	2.5	%	ISO 527-1/-2
Flexural modulus	1.41E6	psi	ISO 178
Flexural strength	30500	psi	ISO 178
Charpy impact strength, 23°C	21.4	ftlb/in^2	ISO 179/1eU
Charpy impact strength, -30°C	19	ftlb/in^2	ISO 179/1eU
Charpy notched impact strength, 23°C	4.28	ftlb/in^2	ISO 179/1eA
Charpy notched impact strength, -30°C	4.04	ftlb/in^2	ISO 179/1eA
Izod notched impact strength, 23°C	3.57	ftlb/in^2	ISO 180/1A
Izod impact strength, 23°C	11.4	ftlb/in^2	ISO 180/1U
Hardness, Rockwell, M-scale	90		ISO 2039-2

Thermal properties

Melting temperature, 10°C/min	437	°F	ISO 11357-1/-3
Glass transition temperature, 10°C/min	140	°F	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	401	°F	ISO 75-1/-2
Temperature of deflection under load, 0.45 MPa	437	°F	ISO 75-1/-2
Temperature of deflection under load, 8 MPa	302	°F	ISO 75-1/-2
Vicat softening temperature, 50°C/h 50N	428	°F	ISO 306
Coefficient of linear thermal expansion (CLTE), parallel	0.14	E-4/°F	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal	0.556	E-4/°F	ISO 11359-1/-2

Flammability

Burning Behav. at thickness h	HB	class	IEC 60695-11-10
Thickness tested	0.0280	in	IEC 60695-11-10
Oxygen index	20	%	ISO 4589-1/-2

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Electrical properties

Relative permittivity, 100Hz	4.5		IEC 62631-2-1
Relative permittivity, 1MHz	4.1		IEC 62631-2-1
Dissipation factor, 100Hz	22	E-4	IEC 62631-2-1
Dissipation factor, 1MHz	160	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	787	kV/in	IEC 60243-1

Physical/Other properties

Humidity absorption, 2mm	0.2	%	Sim. to ISO 62
Water absorption, 2mm	0.4	%	Sim. to ISO 62
Density	0.0552	lb/in^3	ISO 1183

Injection

Drying Recommended	yes	
Drying Temperature	248	°F
Drying Time, Dehumidified Dryer	4 - 6	h
Processing Moisture Content	≤0.02	%
Melt Temperature Optimum	482	°F
Min. melt temperature	464	°F
Max. melt temperature	500	°F
Max. screw tangential speed	0.1 - 0.3	m/s
Mold Temperature Optimum	176	°F
Min. mold temperature	140	°F
Max. mold temperature	266	°F

Characteristics

Processing	Injection Molding
Additives	Release agent

Additional information

Injection molding

To minimize the volatile content in the final product, dry the resin to ≤0.01% water content. In injection molding, use the lowest possible melt temperature (recommended 240 °C) and shortest feasible residence time (recommended 2-3 minutes). Store the parts in a ventilated, clean area before use. If assistance is needed please contact your Celanese account representative.

These recommendations are based on internal Celanese testing. For drying and injection molding conditions outside the above parameters, customer must test for and verify suitably low volatiles emissions on molded articles to confirm the final product is suitably pure for its intended use.

Processing Notes

Pre-Drying

To avoid hydrolytic degradation during processing, CELANEX resins have to be dried to a moisture level equal to or less than 0.01%. Drying should be done in a

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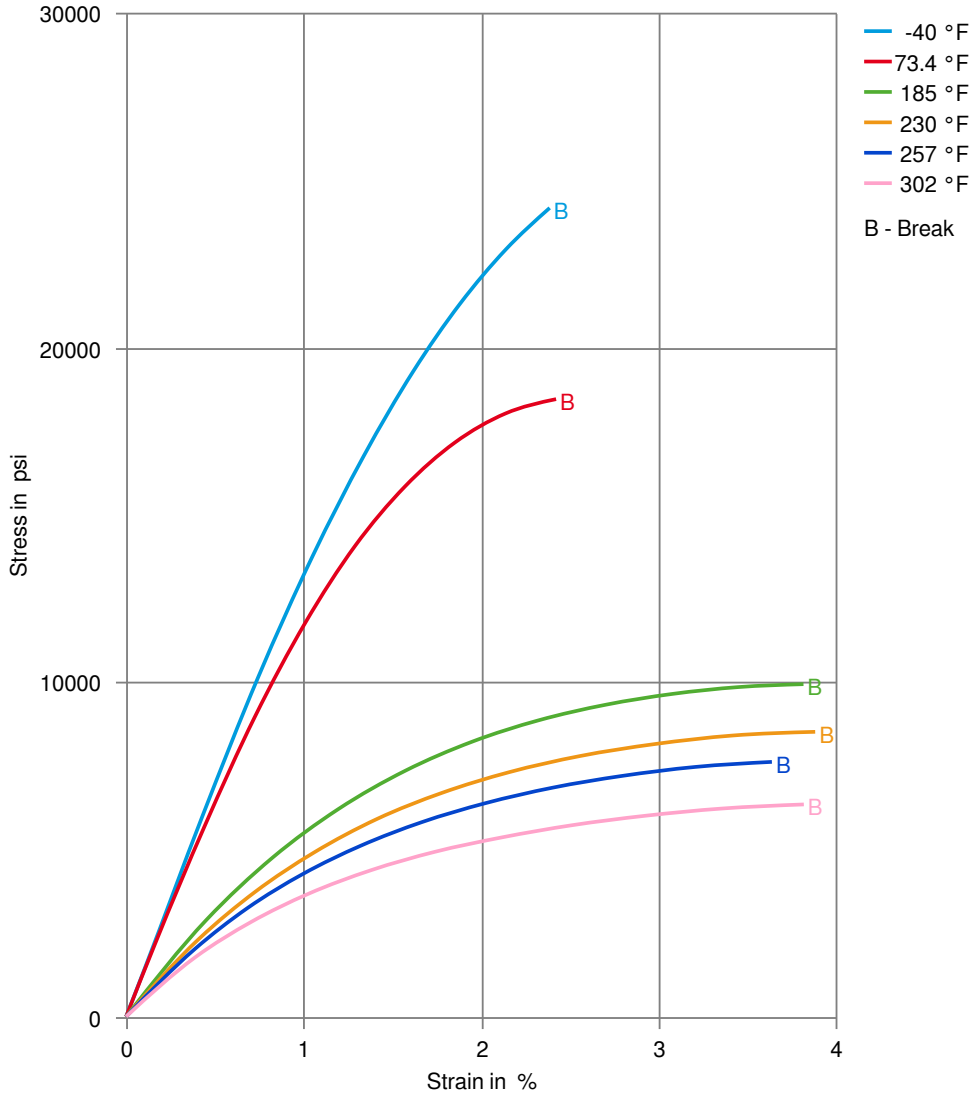
CELANEX® PBT

dehumidifying hopper dryer capable of dewpoints <-40°C (-40°F) at 140°C (284°F) for 4-6 hours.

Storage

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

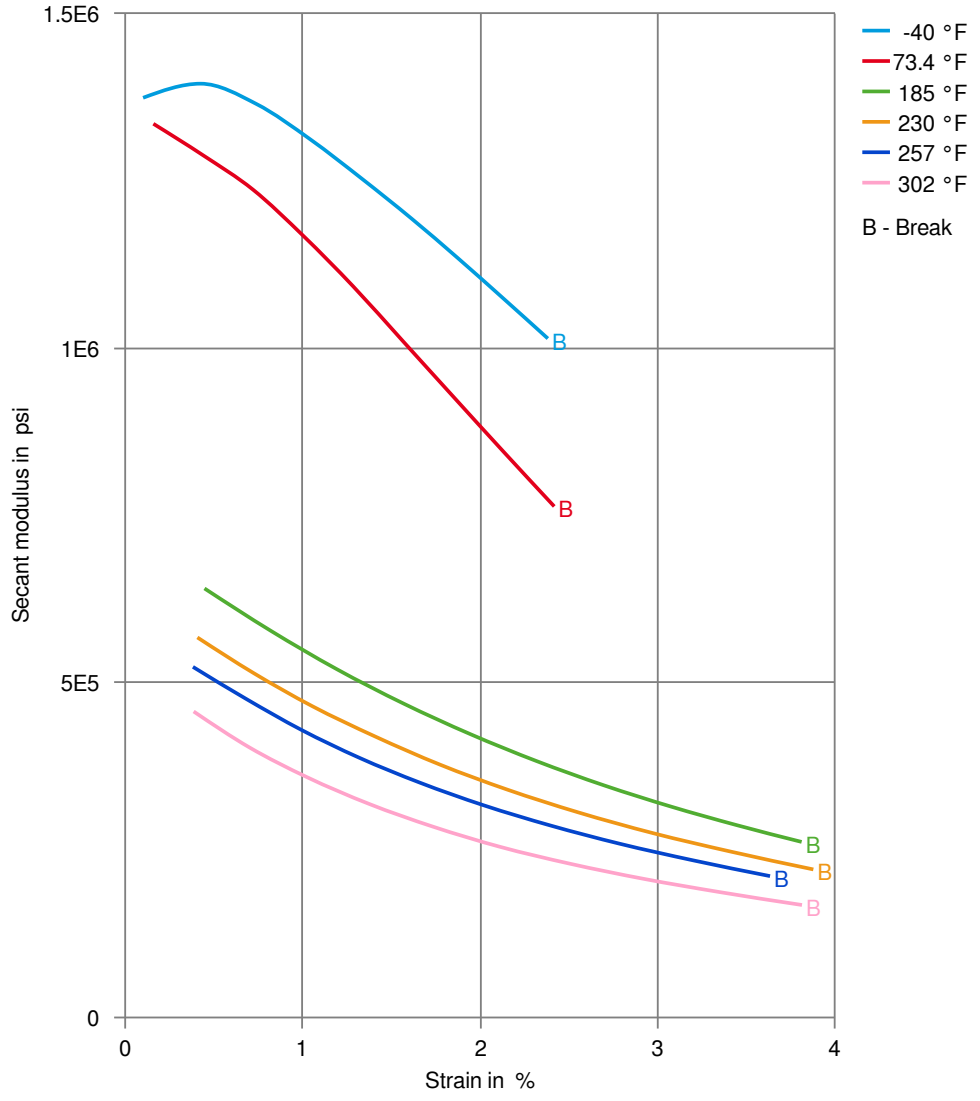
Stress-strain



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Secant modulus-strain



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