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CELANEX® 3300-2FC

CELANEX® PBT

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

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	250	°C	
Load	2.16	kg	
Viscosity number	100	cm^3/g	ISO 307, 1628
Intrinsic viscosity	0.75		ISO 307, 1628
Moulding shrinkage range, parallel	0.3 - 0.7	%	ISO 294-4, 2577
Moulding shrinkage range, normal	0.7 - 1.1	%	ISO 294-4, 2577

Typical mechanical properties

Tensile modulus	9900	MPa	ISO 527-1/-2
Tensile stress at break, 5mm/min	140	MPa	ISO 527-1/-2
Tensile strain at break, 5mm/min	2.5	%	ISO 527-1/-2
Flexural modulus	9700	MPa	ISO 178
Flexural strength	210	MPa	ISO 178
Charpy impact strength, 23°C	45	kJ/m^2	ISO 179/1eU
Charpy impact strength, -30°C	40	kJ/m^2	ISO 179/1eU
Charpy notched impact strength, 23°C	9	kJ/m^2	ISO 179/1eA
Charpy notched impact strength, -30°C	8.5	kJ/m^2	ISO 179/1eA
Izod notched impact strength, 23°C	7.5	kJ/m^2	ISO 180/1A
Izod impact strength, 23°C	24	kJ/m^2	ISO 180/1U
Hardness, Rockwell, M-scale	90		ISO 2039-2
Poisson's ratio	0.34[C]		

[C]: Calculated

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
Temperature of deflection under load, 1.8 MPa	205	°C	ISO 75-1/-2
Temperature of deflection under load, 0.45 MPa	225	°C	ISO 75-1/-2
Temperature of deflection under load, 8 MPa	150	°C	ISO 75-1/-2
Vicat softening temperature, 50°C/h 50N	220	°C	ISO 306
Coefficient of linear thermal expansion (CLTE), parallel	25	E-6/K	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal	100	E-6/K	ISO 11359-1/-2

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Flammability

Burning Behav. at thickness h	HB	class	IEC 60695-11-10
Thickness tested	0.71	mm	IEC 60695-11-10
Oxygen index	20	%	ISO 4589-1/-2

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	31	kV/mm	IEC 60243-1

Physical/Other properties

Humidity absorption, 2mm	0.2	%	Sim. to ISO 62
Water absorption, 2mm	0.4	%	Sim. to ISO 62
Water absorption, Immersion 24h	0.07	%	Sim. to ISO 62
Density	1530	kg/m³	ISO 1183

Injection

Drying Recommended	yes	
Drying Temperature	140	°C
Drying Time, Dehumidified Dryer	4 - 6	h
Processing Moisture Content	≤0.01	%
Melt Temperature Optimum	240	°C
Min. melt temperature	240	°C
Max. melt temperature	250	°C
Screw tangential speed	0.1 - 0.3	m/s
Mold Temperature Optimum	80	°C
Min. mould temperature	60	°C
Max. mould temperature	130	°C

Characteristics

Processing	Injection Moulding
Delivery form	Pellets
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

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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 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.