Celanese
The chemistry inside innovation™

CELANEX® 7716

CELANEX® PBT

Celanex 7716 is a 35% glass/mineral reinforced, non exuding, flame retarded polybutylene terephthalate which has and excellent balance of mechanical properties and processability. Celanex 7716 is well suited for electrical applications where warp resistance or very flat surfaces are required.

Product information

Resin Identification	PBT-(GF+MD)35 FR(17)	ISO 1043
Part Marking Code	>PBT-(GF+MD)35 FR(17)<	ISO 11469

Rheological properties

Melt mass-flow rate	6.3	g/10min	ISO 1133
Melt mass-flow rate, Temperature	250	°C	
Melt mass-flow rate, Load	2.16	kg	
Moulding shrinkage range, parallel	0.2 - 0.5	%	ISO 294-4, 2577
Moulding shrinkage range, normal	0.6 - 0.8	%	ISO 294-4, 2577

Typical mechanical properties

Tensile modulus	10800	MPa	ISO 527-1/-2
Tensile stress at break, 5mm/min	83	MPa	ISO 527-1/-2
Tensile strain at break, 5mm/min	1.6	%	ISO 527-1/-2
Flexural modulus	11700	MPa	ISO 178
Flexural strength	140	MPa	ISO 178
Charpy impact strength, 23°C	22	kJ/m²	ISO 179/1eU
Charpy impact strength, -30°C	21	kJ/m²	ISO 179/1eU
Charpy notched impact strength, 23°C	5	kJ/m²	ISO 179/1eA
Charpy notched impact strength, -30°C	5	kJ/m²	ISO 179/1eA
Izod notched impact strength, 23°C	4.9	kJ/m²	ISO 180/1A
Izod notched impact strength, -30°C	4.5	kJ/m²	ISO 180/1A
Izod impact strength, 23°C	19	kJ/m²	ISO 180/1U
Poisson's ratio	0.34[C]		
Shore D hardness, 15s	83		ISO 48-4 / ISO 868

[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	194	°C	ISO 75-1/-2
Temperature of deflection under load, 0.45 MPa	222	°C	ISO 75-1/-2
Coefficient of linear thermal expansion (CLTE), parallel	31	E-6/K	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal	46	E-6/K	ISO 11359-1/-2

Flammability

Burning Behav. at thickness h	V-0	class	IEC 60695-11-10
Thickness tested	0.8	mm	IEC 60695-11-10

Celanese
The chemistry inside innovation™

CELANEX® 7716

CELANEX® PBT

Electrical properties

Relative permittivity, 100Hz	4.2		IEC 62631-2-1
Relative permittivity, 1MHz	3.9		IEC 62631-2-1
Dissipation factor, 1MHz	190	E-4	IEC 62631-2-1
Volume resistivity	2E14	Ohm.m	IEC 62631-3-1
Surface resistivity	5E16	Ohm	IEC 62631-3-2
Electric strength	24	kV/mm	IEC 60243-1
Comparative tracking index	200		IEC 60112
Arc Resistance	124	s	UL 746B

Physical/Other properties

Humidity absorption, 2mm	0.1	%	Sim. to ISO 62
Density	1690	kg/m³	ISO 1183

Injection

Drying Recommended	yes	
Drying Temperature	120	°C
Drying Time, Dehumidified Dryer	4	h
Processing Moisture Content	≤0.02	%
Melt Temperature Optimum	250	°C
Min. melt temperature	240	°C
Max. melt temperature	260	°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
Ejection temperature	187	°C

Characteristics

Processing	Injection Moulding
Delivery form	Pellets
Additives	Flame retardant
Special characteristics	Flame retardant, Low Warpage

Additional information

Injection molding

Preprocessing

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 <-30°F (-34°C) at 250°F (121°C) for 4 hours..

Processing

Rear Temperature 450-470(230-240) deg F (deg C)
Center Temperature 460-480(235-250) deg F (deg C)

Celanese
The chemistry inside innovation™

CELANEX® 7716

CELANEX® PBT

Front Temperature 470-490(240-255) deg F (deg C)
Nozzle Temperature 480-490(250-255) deg F (deg C)
Melt Temperature 460-490(235-255) deg F (deg C)
Mold Temperature 150-200(65-93) deg F (deg C)
Back Pressure 0-50 psi
Screw Speed Medium
Injection Speed Fast

Injection speed, injection pressure and holding pressure have to be optimized to the individual article geometry. To avoid material degradation during processing low back pressure and minimum screw speed have to be used. Overheating of the material has to be avoided, in particular for flame retardant grades. Up to 50% clean and dry regrind may be used for the '16 series' flame retardant grades.

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 0.02%. Drying should be done in a dehumidifying hopper dryer capable of dewpoints <-40°F (-40°C) at 250°F (121°C) for 4 hours.

Storage

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

Automotive

OEM	ADDITIONAL INFORMATION
General Motors	Black; Special Part Approval, Please See Your CE Account Representative.
General Motors	Natural; Special Part Approval, Please See Your CE Account Representative.

Revised: 2025-05-16 Source: Celanese Materials Database