Celanese
The chemistry inside innovation™

CELANEX® 3316

CELANEX® PBT

Celanex 3316 is a non-exuding flame retarded (UL and CSA approved V-0 at 1/32 inch and 5V at 1/16 inch), 30% fiberglass reinforced polybutylene terephthalate which has an excellent balance of mechanical properties and processability. It is well suited for electrical connector applications where its UL approved 50% regrind use capability allows maximum use of purchased product.

Product information

Resin Identification	PBT-GF30 FR(17)	ISO 1043
Part Marking Code	>PBT-GF30 FR(17)<	ISO 11469

Rheological properties

Melt volume-flow rate	7	cm^3/10min	ISO 1133
Temperature	482	°F	
Load	4.76	lb	
Melt mass-flow rate	12	g/10min	ISO 1133
Melt mass-flow rate, Temperature	482	°F	
Melt mass-flow rate, Load	4.76	lb	
Molding shrinkage range, parallel	0.3 - 0.5	%	ISO 294-4, 2577
Molding shrinkage range, normal	0.8 - 1	%	ISO 294-4, 2577

Typical mechanical properties

Shore D hardness, 15s	85		ISO 48-4 / ISO 868
Tensile modulus	1.55E6	psi	ISO 527-1/-2
Tensile stress at break, 5mm/min	19600	psi	ISO 527-1/-2
Tensile strain at break, 5mm/min	2.5	%	ISO 527-1/-2
Flexural modulus	1.49E6	psi	ISO 178
Flexural strength	29000	psi	ISO 178
Charpy impact strength, 23°C	28.1	$ftlb/in^2$	ISO 179/1eU
Charpy impact strength, -30°C	20	$ftlb/in^2$	ISO 179/1eU
Charpy notched impact strength, 23°C	4.04	$ftlb/in^2$	ISO 179/1eA
Charpy notched impact strength, -30°C	4.04	$ftlb/in^2$	ISO 179/1eA
Izod notched impact strength, 23°C	3.66	$ftlb/in^2$	ISO 180/1A
Izod impact strength, 23°C	35.5	$ftlb/in^2$	ISO 180/1U
Hardness, Rockwell, M-scale	89		ISO 2039-2

Thermal properties

Melting temperature, 10°C/min	437	°F	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	406	°F	ISO 75-1/-2
Temperature of deflection under load, 0.45 MPa	428	°F	ISO 75-1/-2
Temperature of deflection under load, 8 MPa	329	°F	ISO 75-1/-2
Vicat softening temperature, 50°C/h 50N	437	°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	0.444	E-4/°F	ISO 11359-1/-2
RTI, electrical, 0.4mm	167	°F	UL 746B
RTI, electrical, 0.75mm	284	°F	UL 746B
RTI, electrical, 1.5mm	284	°F	UL 746B
RTI, electrical, 3.0mm	284	°F	UL 746B

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RTI, impact, 0.4mm	167	°F	UL 746B
RTI, impact, 0.75mm	266	°F	UL 746B
RTI, impact, 1.5mm	266	°F	UL 746B
RTI, impact, 3.0mm	266	°F	UL 746B
RTI, strength, 0.4mm	167	°F	UL 746B
RTI, strength, 0.75mm	284	°F	UL 746B
RTI, strength, 1.5mm	284	°F	UL 746B
RTI, strength, 3.0mm	284	°F	UL 746B

Flammability

Burning Behav. at thickness h	V-0	class	IEC 60695-11-10
Thickness tested	0.0150	in	IEC 60695-11-10
UL recognition	yes		UL 94
Burning Behav. 5V at thickness h	5VA	class	IEC 60695-11-20
Thickness tested	0.0591	in	IEC 60695-11-20
Oxygen index	30	%	ISO 4589-1/-2

Electrical properties

Relative permittivity, 100Hz	3.6		IEC 62631-2-1
Relative permittivity, 1MHz	2.9		IEC 62631-2-1
Dissipation factor, 100Hz	33	E-4	IEC 62631-2-1
Dissipation factor, 1MHz	145	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	864	kV/in	IEC 60243-1
Comparative tracking index	250		IEC 60112
Arc Resistance	106	s	UL 746B

Physical/Other properties

Humidity absorption, 2mm	0.16	%	Sim. to ISO 62
Water absorption, 2mm	0.4	%	Sim. to ISO 62
Density	0.0599	lb/in^3	ISO 1183

Emissions

Emission of organic compounds	15.5	µgC/g	VDA 277

Injection

Drying Recommended	yes	
Drying Temperature	248	°F
Drying Time, Dehumidified Dryer	4	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

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Max. mold temperature	266	°F
Ejection temperature	372	°F

Automotive

OEM	STANDARD	ADDITIONAL INFORMATION
General Motors	GMW16733P-PBT-GF30F	N/A
Li Auto	Q/LiA5310038	2021 (V2)
Renault	No Spec, Special Part Approval, See Your CE Account Manager.	
SAIC Motor	SMTC 5 310 055	ED3002 Black
Stellantis	MS.90181 / PBT.GF30.9000T.3C.FR	Technical Black;01896_10_00327
Stellantis - Chrysler	MS.50103 / CPN-2253	Natural
Stellantis - Chrysler	MS.50103 / CPN-2253	Technical Black

Characteristics

Processing	Injection Molding
Additives	Flame retardant
Special characteristics	Flame retardant

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)
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.

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Processing Notes

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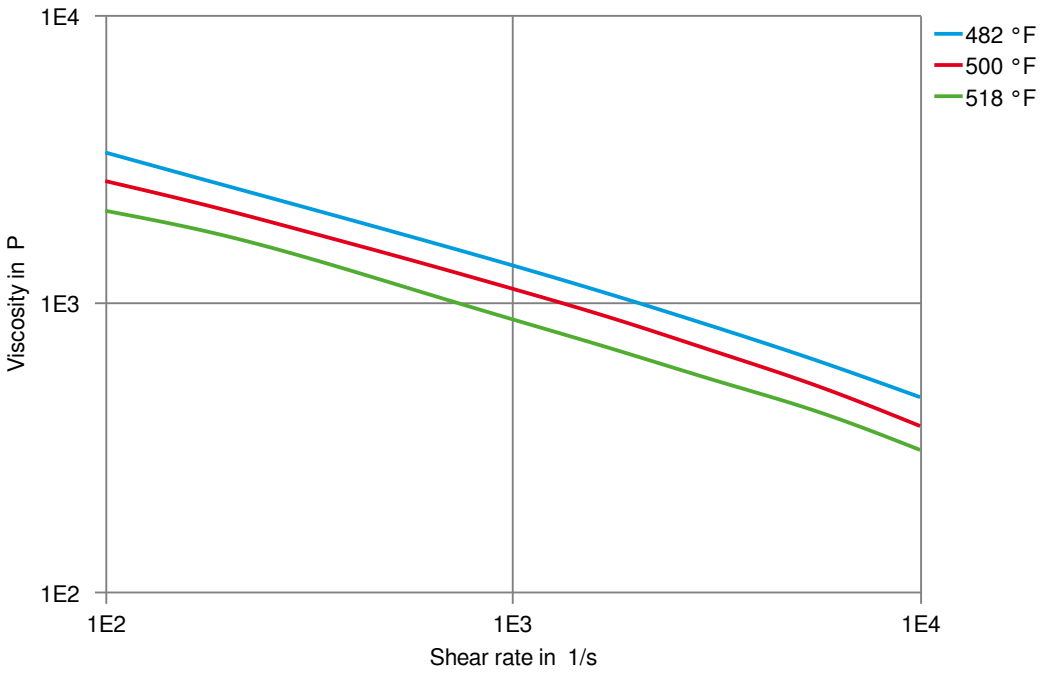
Pre-Drying

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.

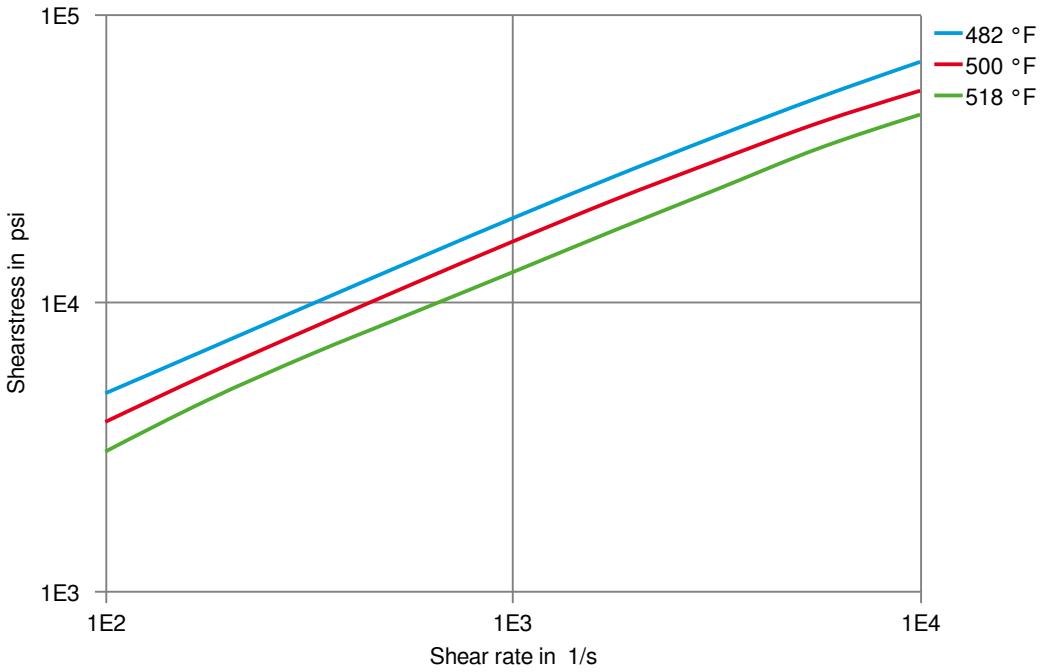
Viscosity-shear rate



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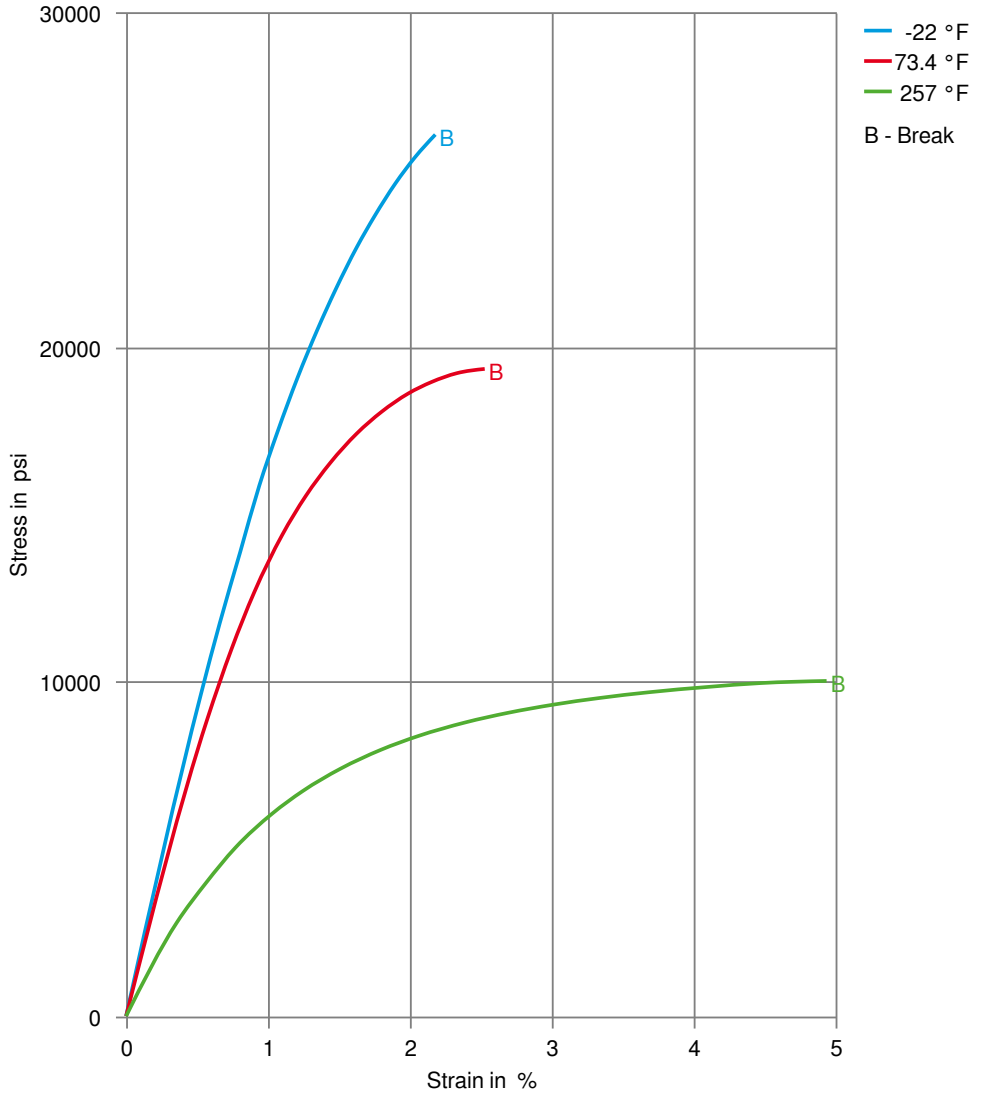
Shearstress-shear rate



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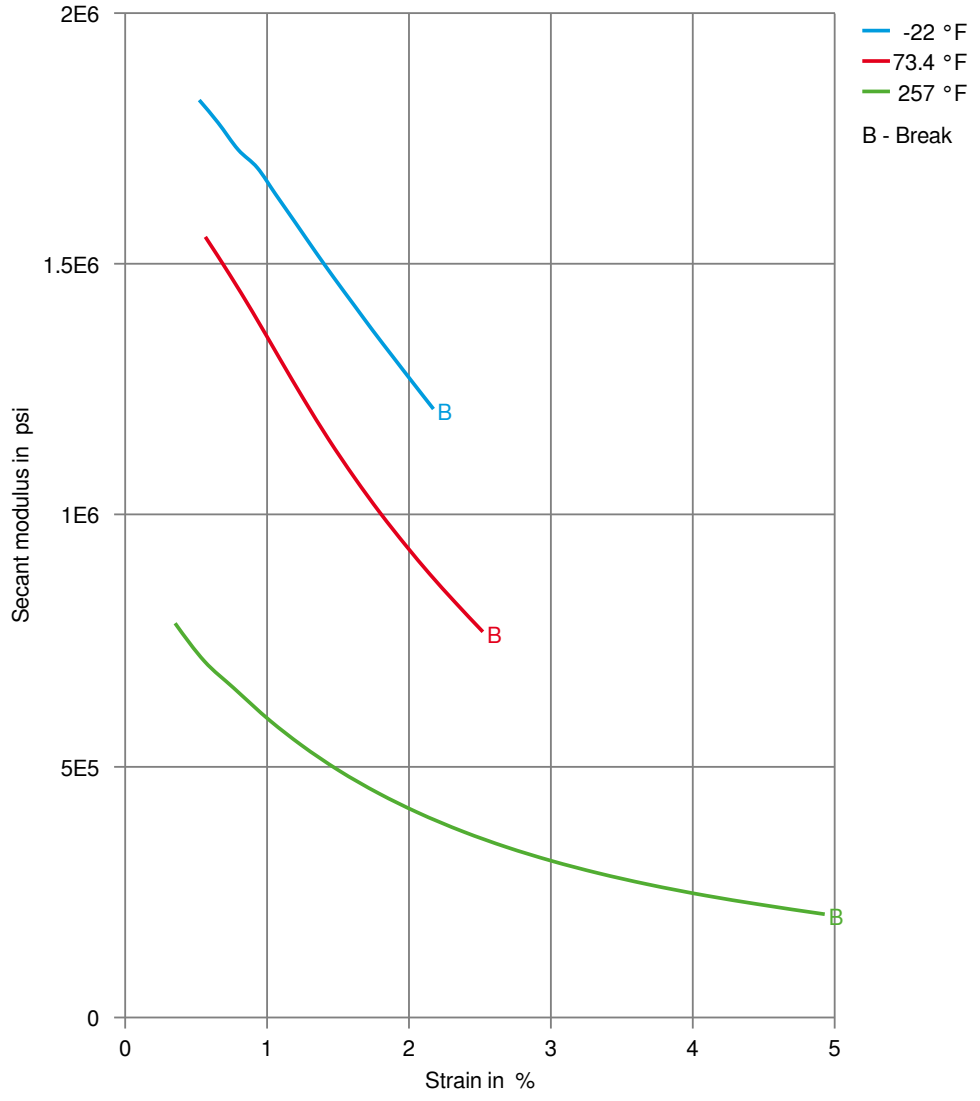
Stress-strain



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Secant modulus-strain



Revised: 2026-07-15 Source: Celanese Materials Database

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