CELANEX® 3216HR

CELANEX® PBT

Celanex 3216HR is a flame retarded, hydrolysis resistant, 15% fiberglass reinforced polybutylene terephthalate which has an excellent balance of mechanical properties and processability.

Product information

Resin Identification	PBT-I-GF15 FR(17)	ISO 1043
Part Marking Code	>PBT-I-GF15 FR(17)<	ISO 11469

Rheological properties

Melt mass-flow rate	9	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 - 0.7	%	ISO 294-4, 2577
Molding shrinkage range, normal	1 - 1.3	%	ISO 294-4, 2577

Typical mechanical properties

Tensile modulus	870000	psi	ISO 527-1/-2
Tensile stress at break, 5mm/min	11600	psi	ISO 527-1/-2
Tensile strain at break, 5mm/min	3.1	%	ISO 527-1/-2
Flexural modulus	769000	psi	ISO 178
Flexural strength	20300	psi	ISO 178
Charpy notched impact strength, 23°C	3.81	ftlb/in²	ISO 179/1eA

Thermal properties

Melting temperature, 10°C/min	437	°F	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	356	°F	ISO 75-1/-2

Flammability

Burning Behav. at thickness h	V-0	class	IEC 60695-11-10
Thickness tested	0.0315	in	IEC 60695-11-10
UL recognition	yes		UL 94

Electrical properties

Comparative tracking index	250	IEC 60112

Physical/Other properties

Humidity absorption, 2mm	0.2	%	Sim. to ISO 62
Water absorption, 2mm	0.4	%	Sim. to ISO 62
Density	0.0545	lb/in³	ISO 1183

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

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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
Ejection temperature	365 °F

Characteristics

Processing	Injection Molding
Additives	Flame retardant
Special characteristics	Flame retardant, Hydrolysis resistant

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 min. 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 25% clean and dry regrind may be used.

Processing Notes

Pre-Drying

To avoid hydrolytic degradation during processing, CELANEX PBT 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 min. 4 hours.

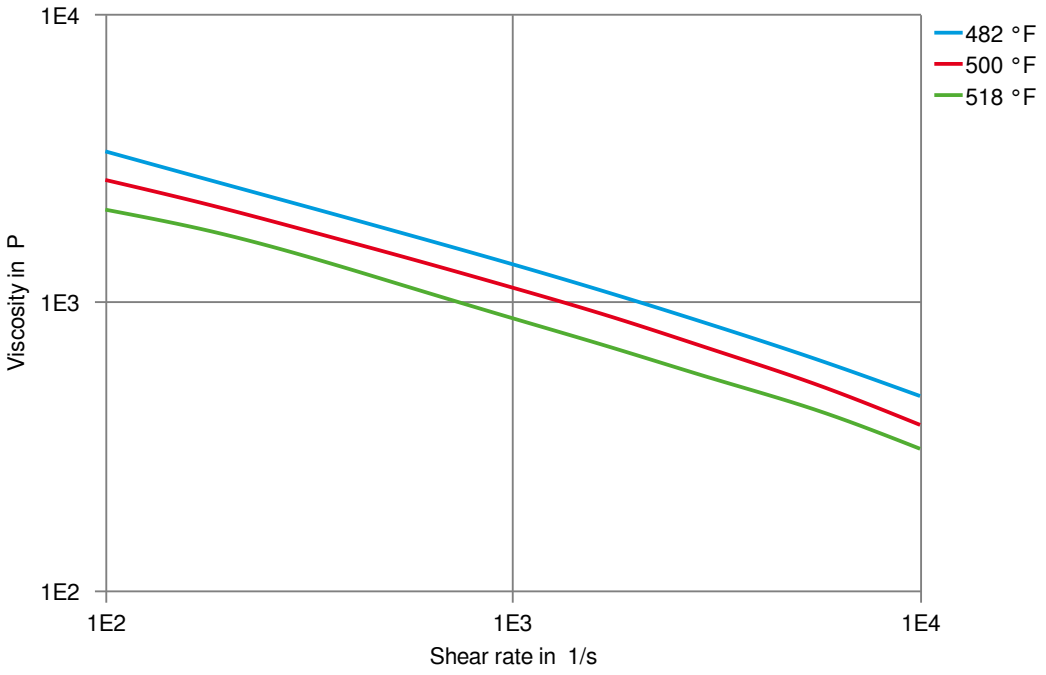
Storage

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

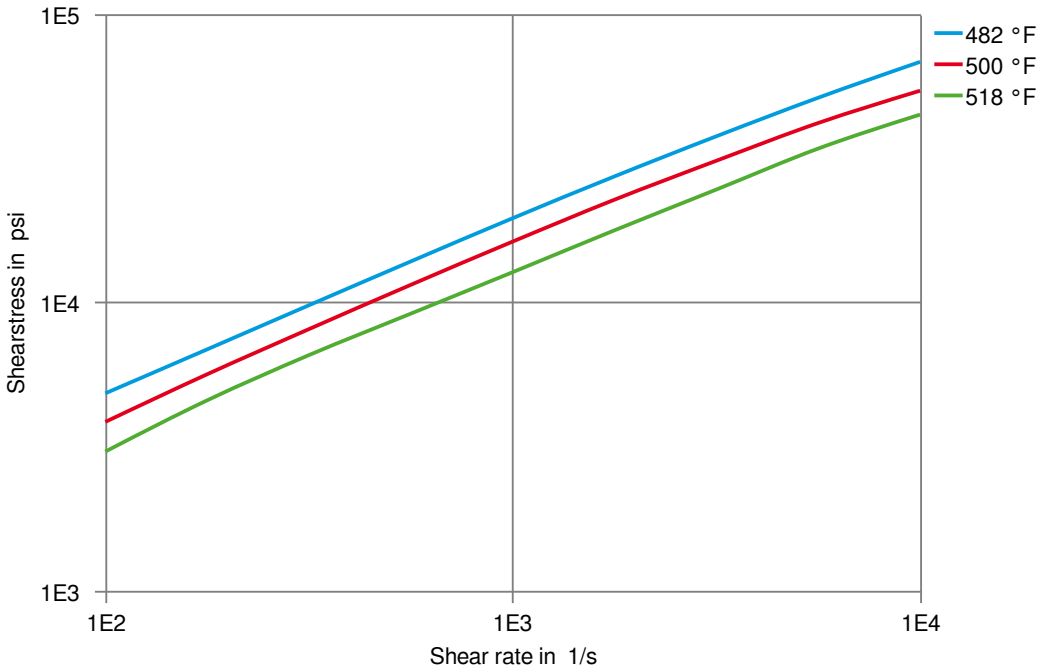
Viscosity-shear rate



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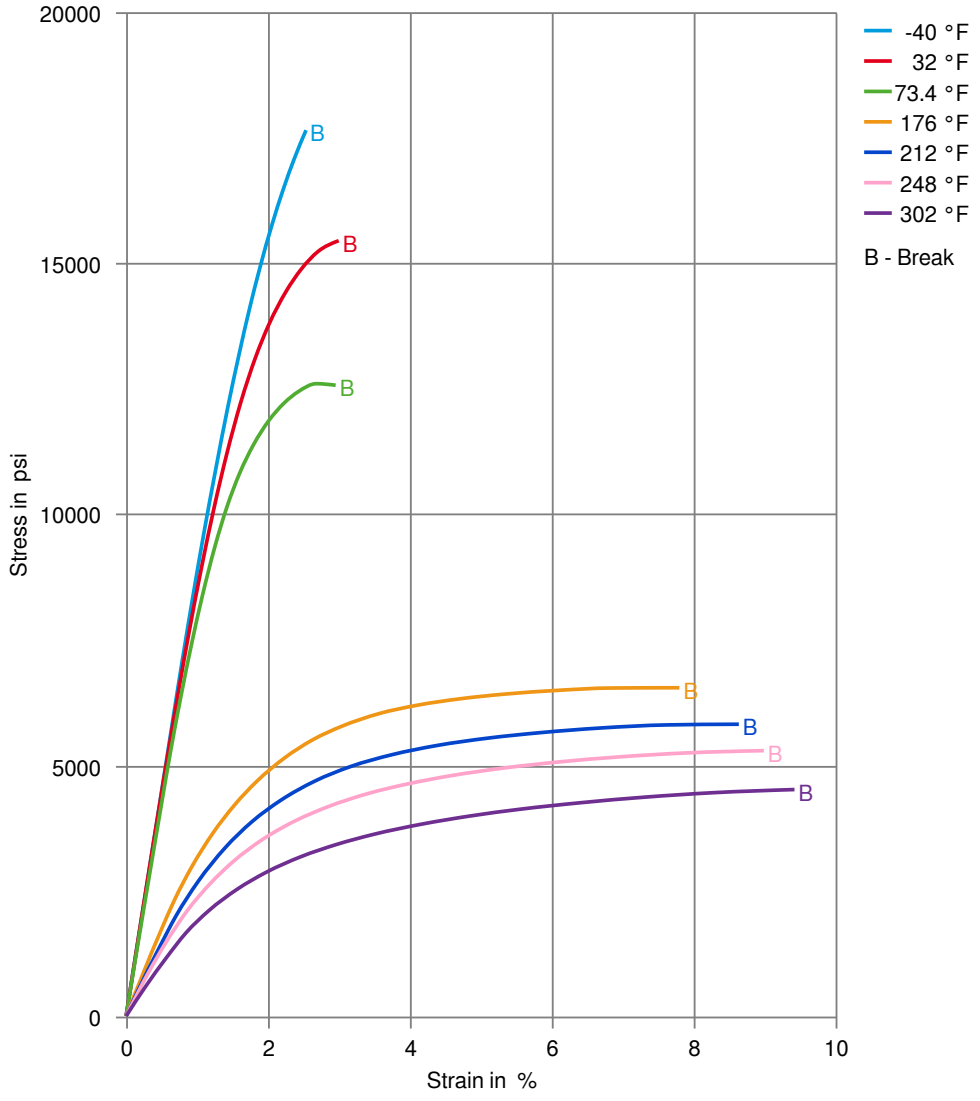
Shearstress-shear rate



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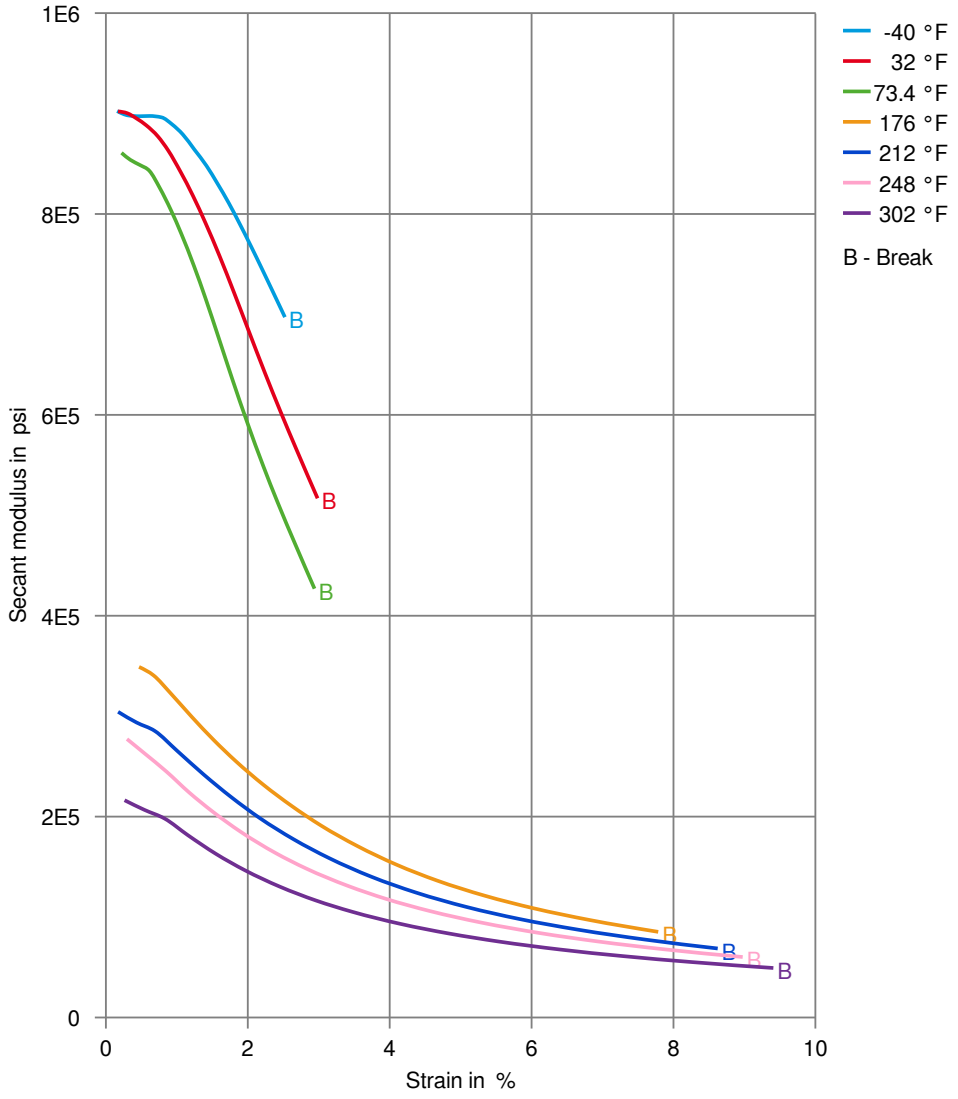
Stress-strain



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Secant modulus-strain



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

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