CELANEX® 2004-2T

CELANEX® PBT

Celanex 2004-2T is an unfilled impact modified polyester that has an excellent combination of flowability and toughness. A typical application for Celanex 2004-2T is electrical connectors containing latches and / or film hinges. Celanex 2004-2T contains an internal lubricant.

Product information

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

Rheological properties

Melt volume-flow rate	21	cm^3/10min	ISO 1133
Temperature	482	°F	
Load	4.76	lb	
Viscosity number	3930	in^3/lb	ISO 307, 1628
Molding shrinkage range, parallel	1.8 - 2	%	ISO 294-4, 2577

Typical mechanical properties

Tensile modulus	305000	psi	ISO 527-1/-2
Tensile stress at yield, 50mm/min	7700	psi	ISO 527-1/-2
Tensile strain at yield, 50mm/min	10	%	ISO 527-1/-2
Tensile stress at break, 50mm/min	4350	psi	ISO 527-1/-2
Nominal strain at break	20	%	ISO 527-1/-2
Charpy notched impact strength, 23°C	2.85	ftlb/in^2	ISO 179/1eA

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	131	°F	ISO 75-1/-2
Temperature of deflection under load, 0.45 MPa	329	°F	ISO 75-1/-2
Coefficient of linear thermal expansion (CLTE), parallel	0.61	E-4/°F	ISO 11359-1/-2

Flammability

Burning Behav. at thickness h	HB	class	IEC 60695-11-10
Thickness tested	0.0394	in	IEC 60695-11-10

Electrical properties

Relative permittivity, 100Hz	3.5		IEC 62631-2-1
Relative permittivity, 1MHz	3.5		IEC 62631-2-1
Dissipation factor, 100Hz	30	E-4	IEC 62631-2-1
Dissipation factor, 1MHz	210	E-4	IEC 62631-2-1
Volume resistivity	>1E13	Ohm.m	IEC 62631-3-1
Surface resistivity	>1E15	Ohm	IEC 62631-3-2
Arc Resistance	181	s	UL 746B

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Physical/Other properties

Water absorption, 2mm	0.45	%	Sim. to ISO 62
Density	0.0469	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
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

Automotive

OEM	STANDARD	ADDITIONAL INFORMATION
VW Group	VW 50136	PBT-1-A Black (With Deviations)

Characteristics

Processing	Injection Molding
Special characteristics	High impact or impact modified

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 470-500(240-260) deg F (deg C)
Nozzle Temperature 480-500(250-260) deg F (deg C)
Melt Temperature 460-500(235-260) 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

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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 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.

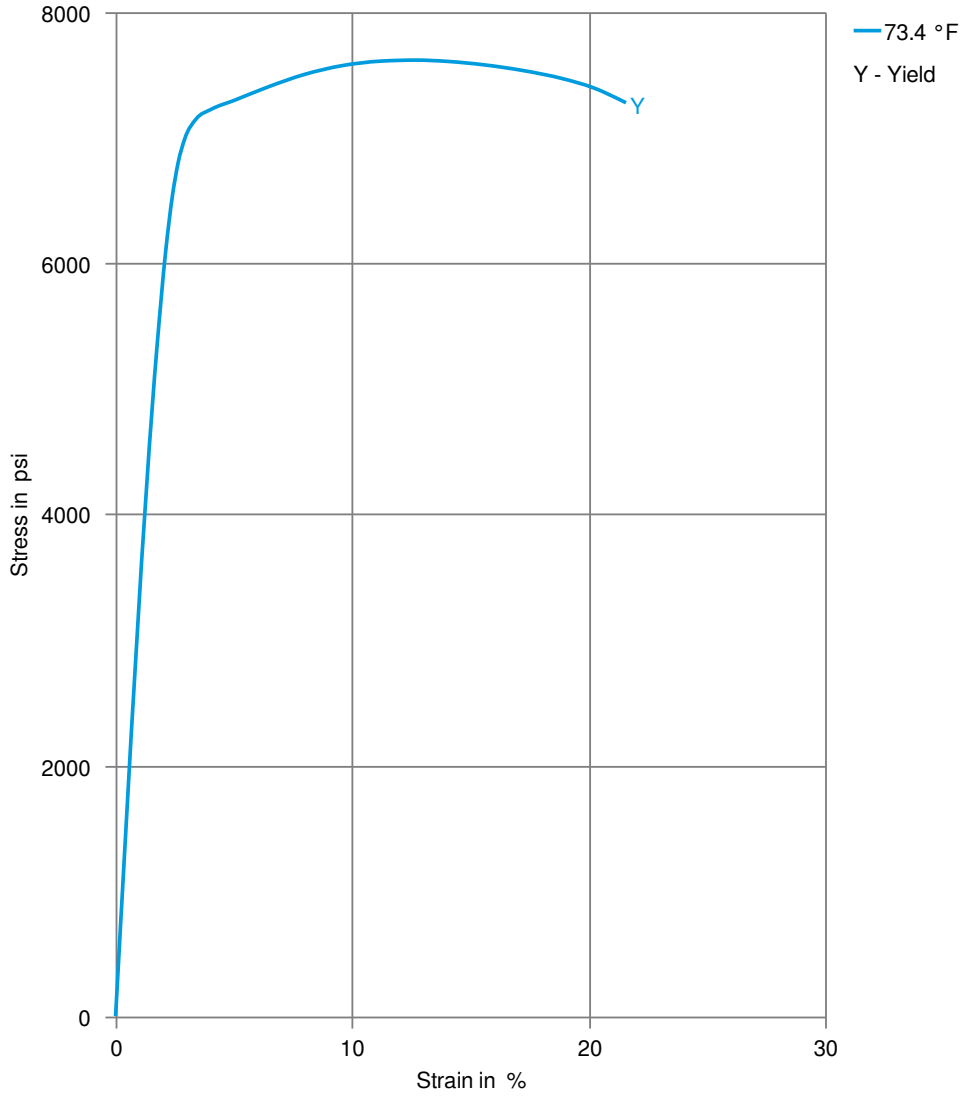
Storage

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

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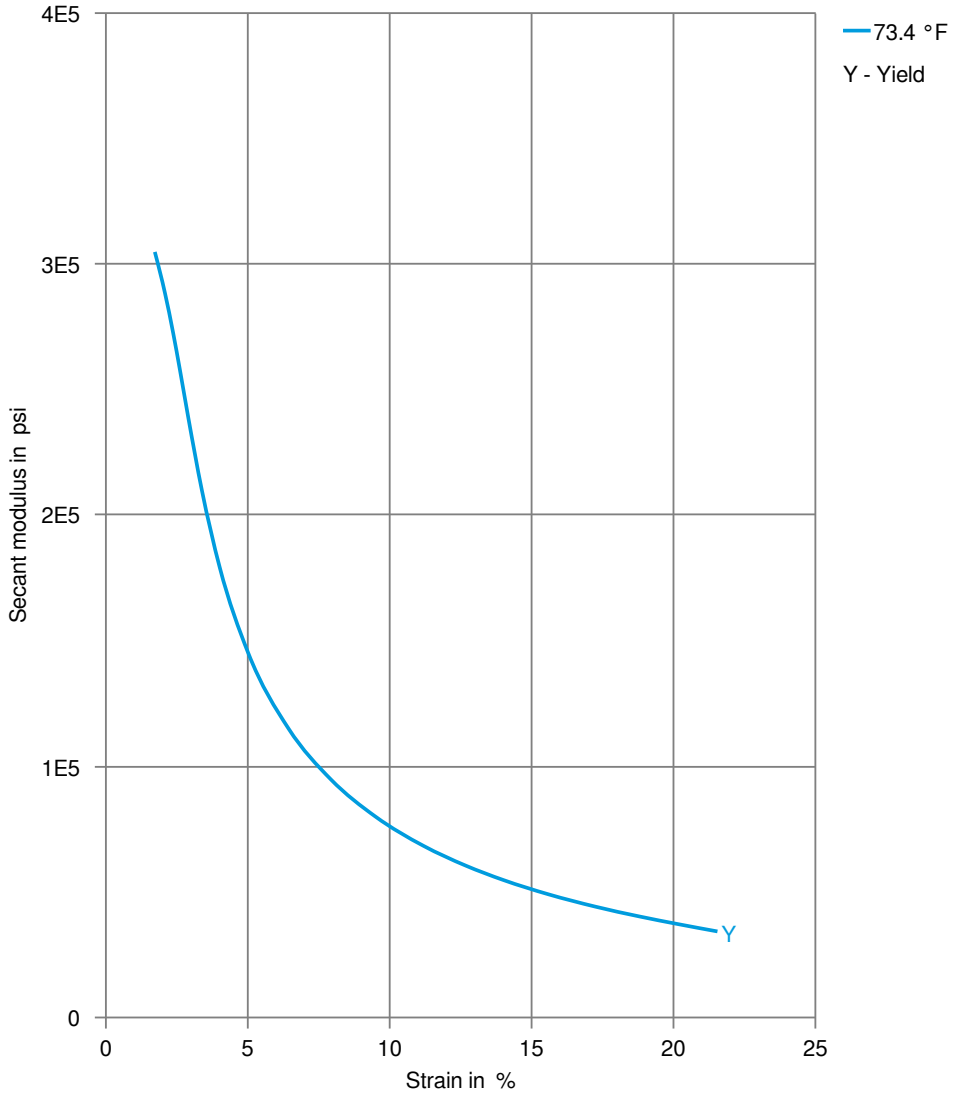
Stress-strain



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Secant modulus-strain



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