

CELANEX® 2004-2T

unfilled; lubricated and toughened PBT grade; especially for applications with film hinge
 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

Part Marking Code	PBT-I	ISO 11469
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Rheological properties

Melt volume-flow rate	21 cm ³ /10min	ISO 1133
Temperature	250 °C	
Load	2.16 kg	
Viscosity number	142 cm ³ /g	ISO 307, 1157, 1628
Moulding shrinkage range, parallel	1.8 - 2.0 %	ISO 294-4, 2577

Typical mechanical properties

Tensile Modulus	2100 MPa	ISO 527-1/-2
Yield stress, 50mm/min	53 MPa	ISO 527-1/-2
Yield strain, 50mm/min	10 %	ISO 527-1/-2
Stress at break, 50mm/min	30 MPa	ISO 527-1/-2
Nominal strain at break	20 %	ISO 527-1/-2
Strain at break, 50mm/min	>50 %	ISO 527-1/-2
Charpy notched impact strength, 23°C	6 kJ/m ²	ISO 179/1eA

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
Temp. of deflection under load, 1.8 MPa	55 °C	ISO 75-1/-2
Temp. of deflection under load, 0.45 MPa	165 °C	ISO 75-1/-2
Coeff. of linear therm. expansion, parallel	110 E-6/K	ISO 11359-1/-2

Flammability

Burning Behav. at thickness h	HB class	UL 94
Thickness tested	1.00 mm	UL 94

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



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Other properties

Water absorption, 2mm	0.45 %	Sim. to ISO 62
Density	1300 kg/m ³	ISO 1183

Injection

Drying Temperature	120 - 130 °C
Drying Time, Dehumidified Dryer	4 h
Processing Moisture Content	0.02 %
Max. mould temperature	65 - 93 °C
Injection speed	medium-fast

Additional information

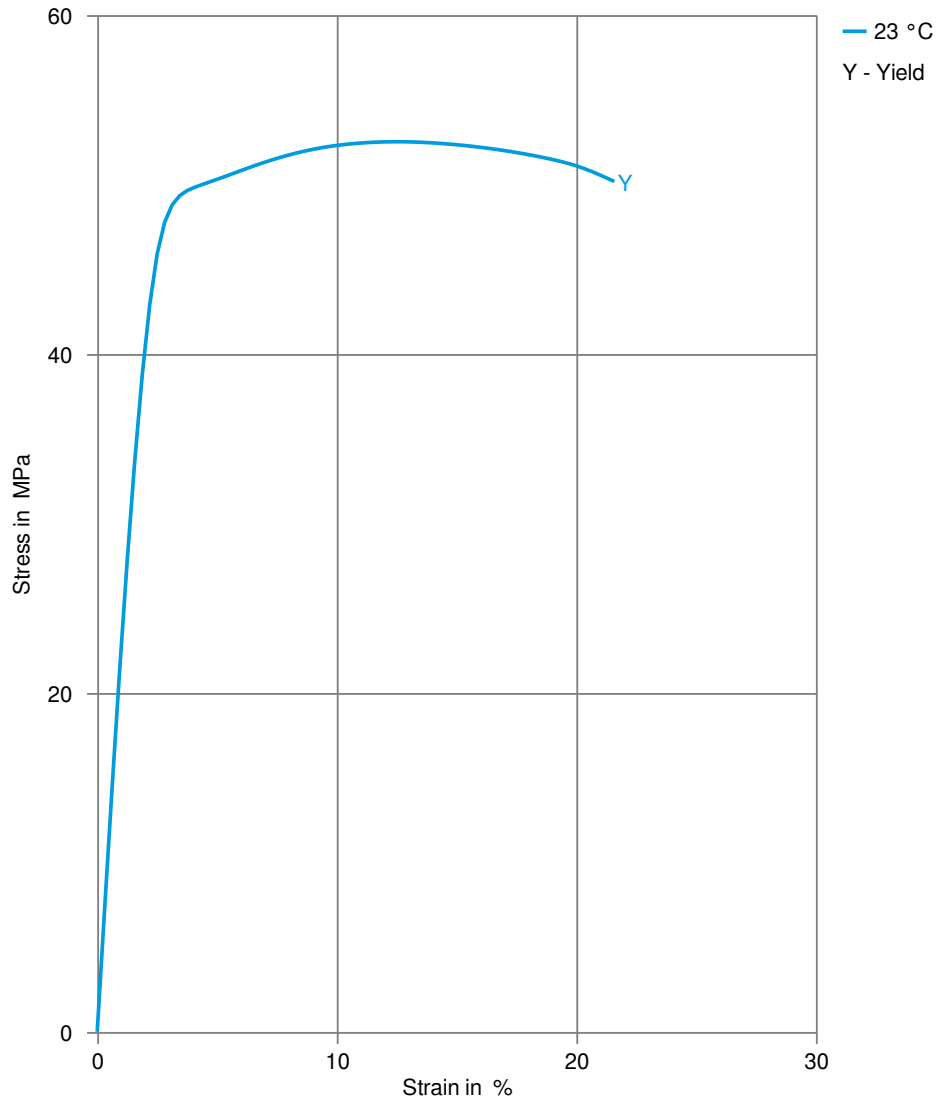
Injection molding	Rear Temperature 450-470(230-240) deg F (deg C)
	Center Temperature 460-480(235-250) deg F (deg C)
	Front Temperature 470-500(240-260) deg F (deg C)
	Nozzle Temperature 480-500(250-260) deg F (deg C)
	Melt Temperature 460-500(235-260) deg F (deg C)
	Mold Temperature 150-200(65-93) deg 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 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.



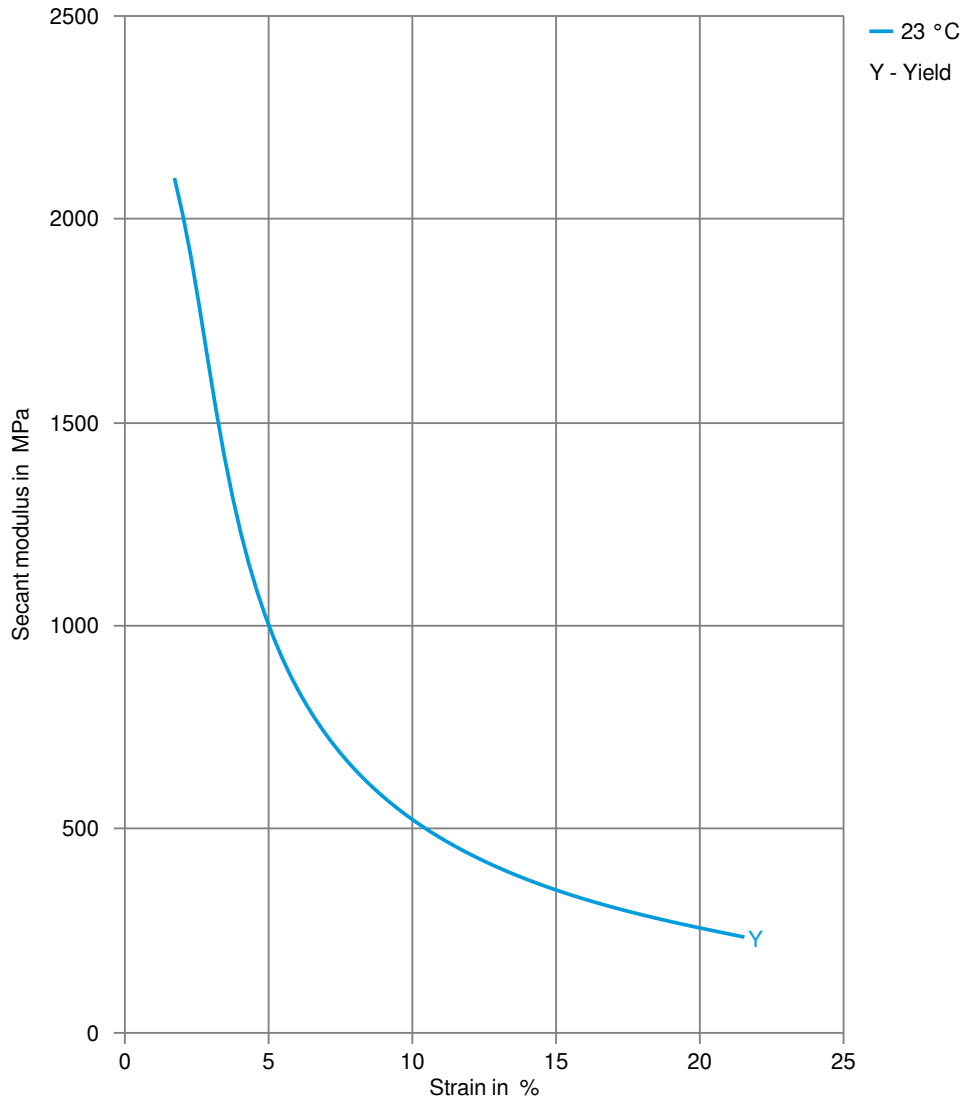
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Stress-strain



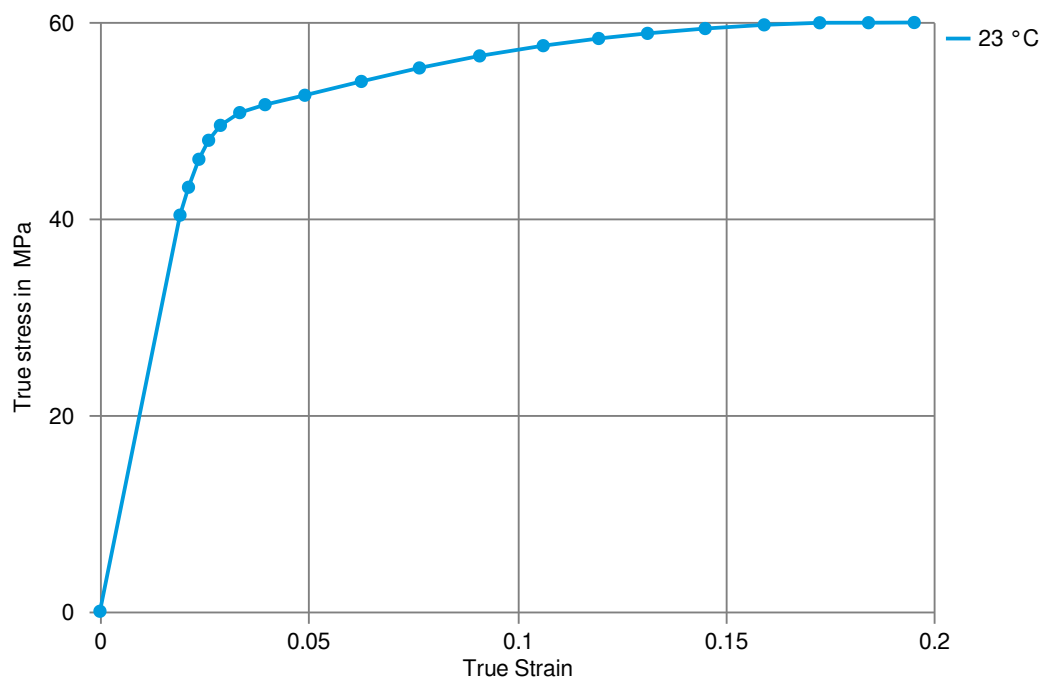
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Secant modulus-strain



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True stress-strain



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Processing Texts

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.

Longer pre-drying times/storage

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

Injection molding

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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.

Other Approvals

Other Approvals

OEM	Specification	Additional Information
VW Group	VW50136	PBT-1-A Black (with deviations)

