

# 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 <sup>3</sup> /10min	ISO 1133
Temperature	250 °C	
Load	2.16 kg	
Viscosity number	142 cm <sup>3</sup> /g	ISO 307, 1628
Moulding shrinkage range, parallel	1.8 - 2 %	ISO 294-4, 2577

### Typical mechanical properties

Tensile modulus	2100 MPa	ISO 527-1/-2
Tensile stress at yield, 50mm/min	53 MPa	ISO 527-1/-2
Tensile strain at yield, 50mm/min	10 %	ISO 527-1/-2
Tensile stress at break, 50mm/min	30 MPa	ISO 527-1/-2
Nominal strain at break	20 %	ISO 527-1/-2
Charpy notched impact strength, 23 °C	6 kJ/m <sup>2</sup>	ISO 179/1eA
Poisson's ratio	0.4 <sup>[C]</sup>	

[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	55 °C	ISO 75-1/-2
Temperature of deflection under load, 0.45 MPa	165 °C	ISO 75-1/-2
Coefficient of linear thermal expansion (CLTE), parallel	110 E-6/K	ISO 11359-1/-2

### Flammability

Burning Behav. at thickness h	HB class	IEC 60695-11-10
Thickness tested	1 mm	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	1300 kg/m <sup>3</sup>	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

### Characteristics

Processing	Injection Moulding
Delivery form	Pellets
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 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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## 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  
VW Group

STANDARD  
VW 50136

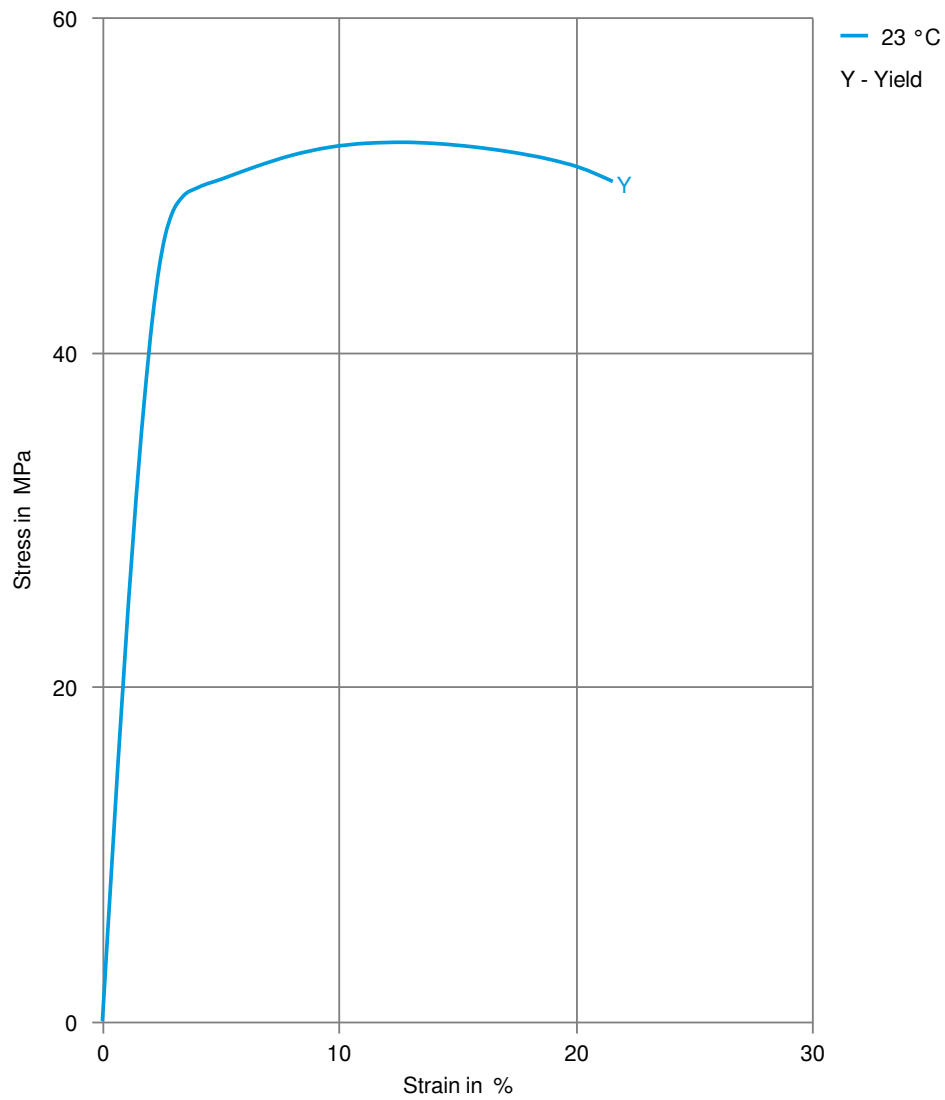
ADDITIONAL INFORMATION  
PBT-1-A Black (With Deviations)

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## Stress-strain



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## Secant modulus-strain

