



CELANEX® 2003HR

CELANEX® PBT

Celanex 2003HR is an unfilled polybutylene terephthalate which has an excellent hydrolysis resistance, mechanical properties and processability

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Resin Identification	PBT		ISO 1043
Part Marking Code	>PBT<		ISO 11469
Rheological properties			
Melt mass-flow rate	44	g/10min	ISO 1133
Melt mass-flow rate, Temperature	250		
Melt mass-flow rate, Load	2.16	kg	
Moulding shrinkage range, parallel	1.8 - 2	%	ISO 294-4, 2577
Moulding shrinkage range, normal	1.8 - 2	%	ISO 294-4, 2577
Typical mechanical properties			
Tensile modulus	2700	MPa	ISO 527-1/-2
Tensile stress at yield, 50mm/min		MPa	ISO 527-1/-2
Tensile strain at yield, 50mm/min	4	%	ISO 527-1/-2
Tensile stress at break, 50mm/min	55	MPa	ISO 527-1/-2
Nominal strain at break	40	%	ISO 527-1/-2
Tensile strain at break, 50mm/min	25	%	ISO 527-1/-2
Flexural modulus	2550	MPa	ISO 178
Flexural strength		MPa	ISO 178
Charpy impact strength, 23°C		kJ/m²	ISO 179/1eU
Charpy impact strength, -30°C		kJ/m²	ISO 179/1eU
Charpy notched impact strength, 23°C		kJ/m²	ISO 179/1eA
Charpy notched impact strength, -30°C		kJ/m ²	ISO 179/1eA
Izod notched impact strength, 23°C		kJ/m²	ISO 180/1A
Izod impact strength, 23°C		kJ/m²	ISO 180/1U
Izod impact strength, -30°C		kJ/m²	ISO 180/1U
Poisson's ratio	0.38 ^[C]		
Shore D hardness, 15s	78		ISO 48-4 / ISO 868
[C]: Calculated			
Thermal properties			
Melting temperature, 10°C/min	225	°C	ISO 11357-1/-3
Glass transition temperature, 10°C/min	45	°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	150	°C	ISO 75-1/-2
Vicat softening temperature, 50°C/h 50N	190	°C	ISO 306
Coefficient of linear thermal expansion (CLTE), parallel	120	E-6/K	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE),	110	E-6/K	ISO 11359-1/-2
normal			

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Electrical properties

Relative permittivity, 1000Hz	3.1		IEC 62631-2-1
Relative permittivity, 1MHz	3.2		IEC 62631-2-1
Dissipation factor, 1MHz	200 E-4	4	IEC 62631-2-1
Volume resistivity	>1E13 Oh	nm.m	IEC 62631-3-1
Surface resistivity	>1E15 Oh	nm	IEC 62631-3-2
Electric strength	15 kV	//mm	IEC 60243-1
Comparative tracking index	600		IEC 60112

Physical/Other properties

Humidity absorption, 2mm	0.2 %	Sim. to ISO 62
Density	1310 kg/m ³	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 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 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)

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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 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 (\leq 60 h) it is necessary to lower the temperature to 100 ° C.

Automotive

OEM Stellantis - Chrysler STANDARD

MS.50103 / CPN-5253

ADDITIONAL INFORMATION

Black

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