Celanese
The chemistry inside innovation™

CELANEX® 2001

unreinforced, hydrolytically more stable, PBT polymer extrusion grade
Celanex 2001 is an unreinforced polybutylene terephthalate resin with improved hydrolysis resistance developed for use in fiber optic buffer tube applications. Celanex 2001 exhibits the high melt strength required for profile extrusion.

Product information

Part Marking Code	> PBT <		ISO 11469

Rheological properties

Melt volume-flow rate	6.5	cm^3/10min	ISO 1133
Melt mass-flow rate	7.5	g/10min	ISO 1133
Temperature	250	°C	
Load	2.16	kg	
Melt mass-flow rate, Temperature	250	°C	
Melt mass-flow rate, Load	2.16	kg	
Moulding shrinkage range, parallel	1.8 - 2.0	%	ISO 294-4, 2577
Moulding shrinkage range, normal	1.8 - 2.0	%	ISO 294-4, 2577

Typical mechanical properties

Tensile Modulus	2600	MPa	ISO 527-1/-2
Yield stress, 50mm/min	60	MPa	ISO 527-1/-2
Yield strain, 50mm/min	6	%	ISO 527-1/-2
Stress at 50% strain	33	MPa	ISO 527-1/-2
Stress at break, 50mm/min	37	MPa	ISO 527-1/-2
Nominal strain at break	>50	%	ISO 527-1/-2
Strain at break, 50mm/min	200	%	ISO 527-1/-2
Flexural Modulus	2500	MPa	ISO 178
Flexural Strength	80	MPa	ISO 178
Charpy impact strength, 23°C	NB	kJ/m^2	ISO 179/1eU
Charpy impact strength, -30°C	NB	kJ/m^2	ISO 179/1eU
Charpy notched impact strength, 23°C	7	kJ/m^2	ISO 179/1eA
Charpy notched impact strength, -30°C	4.2	kJ/m^2	ISO 179/1eA
Izod notched impact strength, 23°C	5.5	kJ/m^2	ISO 180/1A
Hardness, Rockwell, M-scale	72		ISO 2039-2
Shore D hardness, 15s	79		ISO 48-4 / ISO 868

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	50	°C	ISO 75-1/-2
Temp. of deflection under load, 0.45 MPa	150	°C	ISO 75-1/-2
Vicat softening temperature, 50°C/h, 50N	185	°C	ISO 306
Coeff. of linear therm. expansion, parallel	130	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal	100	E-6/K	ISO 11359-1/-2

Celanese
The chemistry inside innovation™

CELANEX® 2001

Electrical properties

Relative permittivity, 100Hz	3		IEC 62631-2-1
Relative permittivity, 1MHz	3.2		IEC 62631-2-1
Dissipation factor, 1MHz	200	E-4	IEC 62631-2-1
Volume resistivity	>1E13	Ohm.m	IEC 62631-3-1
Surface resistivity	>1E15	Ohm	IEC 62631-3-2
Electric strength	15	kV/mm	IEC 60243-1
Comparative tracking index	PLC 0	PLC	UL 746A

Other properties

Humidity absorption, 2mm	0.19	%	Sim. to ISO 62
Water absorption, 2mm	0.45	%	Sim. to ISO 62
Density	1310	kg/m³	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.

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.

Celanese
The chemistry inside innovation™

CELANEX® 2001

Longer pre-drying times/storage

CELANEX® 2001

	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	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.
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.