

CELANEX® 3400-2 - PBT

Description

Celanex 3400-2 is a general purpose, 40% glass reinforced polybutylene terephthalate that offers a good combination of mechanical, electrical, and thermal properties. This grade provides outstanding processability and good chemical resistance. Celanex 3400-2 is a high flow material.

Physical properties	Value	Unit	Test Standard
Density	1610	kg/m ³	ISO 1183
Melt flow rate, MFR	8	g/10min	ISO 1133
MFR temperature	250	°C	ISO 1133
MFR load	2.16	kg	ISO 1133
Molding shrinkage, parallel	0.3 - 0.5	%	ISO 294-4, 2577
Molding shrinkage, normal	0.7	%	ISO 294-4, 2577
Water absorption, 23°C-sat	0.05	%	ISO 62
Humidity absorption, 23°C/50%RH	0.15	%	ISO 62

Mechanical properties	Value	Unit	Test Standard
Tensile modulus	12100	MPa	ISO 527-2/1A
Tensile stress at break, 5mm/min	140	MPa	ISO 527-2/1A
Tensile strain at break, 5mm/min	2.4	%	ISO 527-2/1A
Flexural modulus, 23°C	11000	MPa	ISO 178
Flexural strength, 23°C	215	MPa	ISO 178
Charpy impact strength, 23°C	47	kJ/m ²	ISO 179/1eU
Charpy impact strength, -30°C	45	kJ/m ²	ISO 179/1eU
Charpy notched impact strength, 23°C	11	kJ/m ²	ISO 179/1eA
Charpy notched impact strength, -30°C	9.5	kJ/m ²	ISO 179/1eA
Izod impact notched, 23°C	10	kJ/m ²	ISO 180/1A
Rockwell hardness	93	M-Scale	ISO 2039-2

Mechanical properties (TPE)	Value	Unit	Test Standard
Shore D hardness, 15s	85	-	ISO 868

Thermal properties	Value	Unit	Test Standard
Melting temperature, 10°C/min	225	°C	ISO 11357-1/-3
Glass transition temperature, 10°C/min	45	°C	ISO 11357-1,-2,-3
DTUL at 1.8 MPa	212	°C	ISO 75-1, -2
DTUL at 0.45 MPa	225	°C	ISO 75-1, -2
Coeff. of linear therm expansion, parallel	0.15	E-4/°C	ISO 11359-2
Coeff. of linear therm expansion, normal	1.01	E-4/°C	ISO 11359-2
Flammability at thickness h	HB	class	UL 94
thickness tested (h)	0.71	mm	UL 94

Electrical properties	Value	Unit	Test Standard
Relative permittivity, 100Hz	3.5	-	IEC 60250
Relative permittivity, 1MHz	3.4	-	IEC 60250
Dissipation factor, 1MHz	130	E-4	IEC 60250
Volume resistivity	1E13	Ohm*m	IEC 60093
Surface resistivity	1E15	Ohm	IEC 60093
Electric strength	19	kV/mm	IEC 60243-1
Comparative tracking index	350	-	IEC 60112

Typical injection moulding processing conditions

Pre Drying	Value	Unit	Test Standard
Necessary low maximum residual moisture content	0.02	%	-
Drying time	4	h	-
Drying temperature	120 - 130	°C	-

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Temperature	Value	Unit	Test Standard
Hopper temperature	20 - 50	°C	-
Feeding zone temperature	230 - 240	°C	-
Zone1 temperature	230 - 240	°C	-
Zone2 temperature	235 - 250	°C	-
Zone3 temperature	235 - 250	°C	-
Zone4 temperature	240 - 260	°C	-
Nozzle temperature	240 - 260	°C	-
Melt temperature	235 - 260	°C	-
Mold temperature	65 - 96	°C	-
Hot runner temperature	250 - 260	°C	-
Speed	Value	Unit	Test Standard
Injection speed	medium-fast	-	-

Other text information

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

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.

Characteristics

Product Categories

Glass reinforced

Delivery Form

Pellets

Processing

Injection molding

Additives

Lubricants

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General Disclaimer

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