Ticona
Performance Driven Solutions™

CELANEX® 3400-2 | PBT | Glass Reinforced

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 is a high flow material.

Physical properties	Value	Unit	Test Standard
Density	**1610**	kg/m³	ISO 1183
Mold shrinkage - parallel	**0.3-0.5**	%	ISO 294-4
Mold shrinkage - normal	**0.7**	%	ISO 294-4
Humidity absorption (23°C/50%RH)	**0.12**	%	ISO 62

Mechanical properties	Value	Unit	Test Standard
Tensile modulus (1mm/min)	**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	**47.0**	kJ/m²	ISO 179/1eU
Charpy impact strength @ -30°C	**45.0**	kJ/m²	ISO 179/1eU
Charpy notched impact strength @ 23°C	**11**	kJ/m²	ISO 179/1eA
Charpy notched impact strength @ -30°C	**9.5**	kJ/m²	ISO 179/1eA
Notched impact strength (Izod) @ 23°C	**10**	kJ/m²	ISO 180/1A
Rockwell hardness	**93**	M-Scale	ISO 2039-2

Thermal properties	Value	Unit	Test Standard
Melting temperature (10°C/min)	**225**	°C	ISO 11357-1,-2,-3
Glass transition temperature (10°C/min)	**45**	°C	ISO 11357-1,-2,-3
DTUL @ 1.8 MPa	**212**	°C	ISO 75-1/-2
DTUL @ 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	UL94
thickness tested (h)	**0.71**	mm	UL94

Electrical properties	Value	Unit	Test Standard
Relative permittivity - 100 Hz	**3.5**	-	IEC 60250
Relative permittivity - 1 MHz	**3.4**	-	IEC 60250
Dissipation factor - 1 MHz	**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 CTI	**350**	-	IEC 60112

Test specimen production	Value	Unit	Test Standard
Processing conditions acc. ISO	**7792-2**	-	Internal
Injection molding melt temperature	**260**	°C	ISO 294
Injection molding mold temperature	**82**	°C	ISO 294
Injection molding flow front velocity	**300**	mm/s	ISO 294

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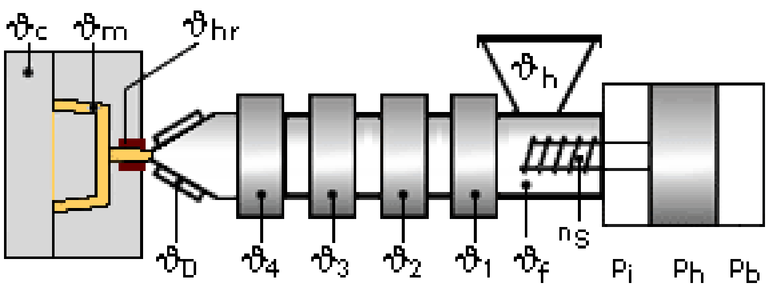
Test specimen production	Value	Unit	Test Standard
Injection molding hold pressure	**48**	MPa	ISO 294

Typical injection moulding processing conditions



Pre Drying:

Necessary low maximum residual moisture content: 0.02%

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.

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

Drying time: 4 h

Drying temperature: 120 - 130 °C

Temperature:

	ϑManifold	ϑMold	ϑMelt	ϑNozzle	ϑZone4	ϑZone3	ϑZone2	ϑZone1	ϑFeed	ϑHopper
min (°C)	250	65	235	240	240	235	235	230	230	20
max (°C)	260	96	260	260	260	250	250	240	240	50

Speed:

Injection speed: medium-fast

Injection Molding

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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
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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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General Disclaimer

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Properties of molded parts can be influenced by a wide variety of factors including, but not limited to, material selection, additives, part design, processing conditions and environmental exposure. Any determination of the suitability of a particular material and part design for any use contemplated by the users and the manner of such use is the sole responsibility of the users, who must assure themselves that the material as subsequently processed meets the needs of their particular product or use.
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