Ticona
Performance Driven Solutions™

CELANEX® 4302 | PBT | Glass Reinforced

Description

Celanex 4302 is a 30% glass reinforced PBT designed for improved mold flow, warp resistance and surface appearance.

Physical properties	Value	Unit	Test Standard
Density	**1490**	kg/m³	ISO 1183
Mold shrinkage - parallel	**0.2-0.4**	%	ISO 294-4
Mold shrinkage - normal	**0.4-0.6**	%	ISO 294-4
Humidity absorption (23°C/50%RH)	**0.15**	%	ISO 62

Mechanical properties	Value	Unit	Test Standard
Tensile modulus (1mm/min)	**8900**	MPa	ISO 527-2/1A
Tensile stress at break (5mm/min)	**120**	MPa	ISO 527-2/1A
Tensile strain at break (5mm/min)	**2.8**	%	ISO 527-2/1A
Flexural modulus (23°C)	**8700**	MPa	ISO 178
Flexural strength (23°C)	**190**	MPa	ISO 178
Charpy impact strength @ 23°C	**56.0**	kJ/m²	ISO 179/1eU
Charpy impact strength @ -30°C	**41.0**	kJ/m²	ISO 179/1eU
Charpy notched impact strength @ 23°C	**9.9**	kJ/m²	ISO 179/1eA
Charpy notched impact strength @ -30°C	**8.3**	kJ/m²	ISO 179/1eA
Notched impact strength (Izod) @ 23°C	**13.9**	kJ/m²	ISO 180/1A

Thermal properties	Value	Unit	Test Standard
Melting temperature (10°C/min)	**225**	°C	ISO 11357-1,-2,-3
Glass transition temperature (10°C/min)	**55**	°C	ISO 11357-1,-2,-3
DTUL @ 1.8 MPa	**173**	°C	ISO 75-1/-2
DTUL @ 0.45 MPa	**218**	°C	ISO 75-1/-2
Coeff.of linear therm. expansion (parallel)	**0.18**	E-4/°C	ISO 11359-2
Coeff.of linear therm. expansion (normal)	**1.25**	E-4/°C	ISO 11359-2

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
Injection molding hold pressure	**48**	MPa	ISO 294

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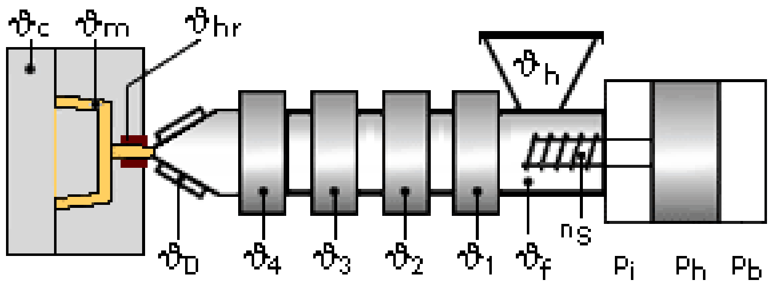
Typical injection moulding processing conditions



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:

	ϑ Manifold	ϑ Mold	ϑ Melt	ϑ Nozzle	ϑ Zone4	ϑ Zone3	ϑ Zone2	ϑ Zone1	ϑ Feed	ϑ Hopper
min (°C)	250	65	235	250	240	235	235	230	230	20
max (°C)	260	93	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.

Contact Information

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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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