Celanese

CELANEX® 5202 | PBT | Glass Reinforced

Description

Celanex 5202 is a 15% glass filled polyester that features improved surface gloss and has an excellent balance of mechanical properties, processability, and color stability under heat and UV exposure. A typical application for Celanex 5202 is oven handles.

Physical properties	Value	Unit	Test Standard
Density	**1440**	kg/m³	ISO 1183
Mold shrinkage - parallel	**0.1-0.6**	%	ISO 294-4
Mold shrinkage - normal	**0.7**	%	ISO 294-4
Humidity absorption (23°C/50%RH)	**0.17**	%	ISO 62

Mechanical properties	Value	Unit	Test Standard
Tensile modulus (1mm/min)	**6100**	MPa	ISO 527-2/1A
Tensile stress at break (5mm/min)	**100**	MPa	ISO 527-2/1A
Tensile strain at break (5mm/min)	**2.5**	%	ISO 527-2/1A
Flexural modulus (23°C)	**5300**	MPa	ISO 178
Flexural strength (23°C)	**150**	MPa	ISO 178
Charpy impact strength @ 23°C	**15.0**	kJ/m²	ISO 179/1eU
Charpy impact strength @ -30°C	**17.0**	kJ/m²	ISO 179/1eU
Charpy notched impact strength @ 23°C	**4.7**	kJ/m²	ISO 179/1eA
Charpy notched impact strength @ -30°C	**4.5**	kJ/m²	ISO 179/1eA
Notched impact strength (Izod) @ 23°C	**4.4**	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)	**50**	°C	ISO 11357-1,-2,-3
DTUL @ 1.8 MPa	**180**	°C	ISO 75-1/-2
DTUL @ 0.45 MPa	**215**	°C	ISO 75-1/-2
Coeff.of linear therm. expansion (parallel)	**0.42**	E-4/°C	ISO 11359-2
Coeff.of linear therm. expansion (normal)	**0.73**	E-4/°C	ISO 11359-2
Flammability at thickness h	**HB**	class	UL94
thickness tested (h)	**0.8**	mm	UL94

Electrical properties	Value	Unit	Test Standard
Relative permittivity - 100 Hz	**2.7**	-	IEC 60250
Relative permittivity - 1 MHz	**2.7**	-	IEC 60250
Dissipation factor - 1 MHz	**140**	E-4	IEC 60250
Volume resistivity	**7E14**	Ohm*m	IEC 60093
Surface resistivity	**4E15**	Ohm	IEC 60093
Electric strength	**17**	kV/mm	IEC 60243-1
Comparative tracking index CTI	**225**	-	IEC 60112

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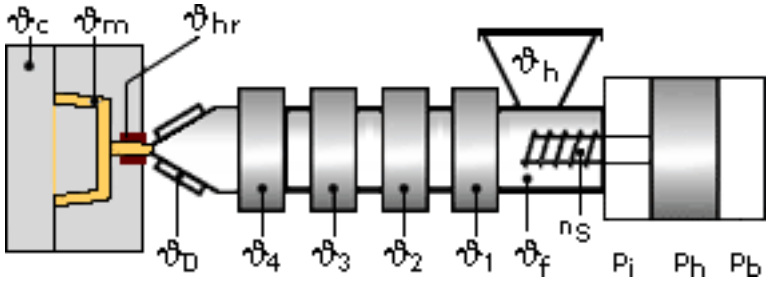
Typical injection moulding processing conditions



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:

	$\vartheta_{Manifold}$	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)	265	93	265	265	260	255	255	250	250	50

Speed:

Injection speed: medium-fast

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