Celanese
The chemistry inside innovation™

CELANEX® 3201

15% glass-fiber reinforced; standard flowing PBT grade
Celanex 3201 is a 15% glass reinforced general purpose thermoplastic polyester resin that offers a superior combination of mechanical, electrical, and thermal properties, together with outstanding processability, good chemical resistance, and toughness.

Product information

Part Marking Code	PBT-GF15		ISO 11469

Rheological properties

Melt mass-flow rate	19	g/10min	ISO 1133
Melt mass-flow rate, Temperature	250	°C	
Melt mass-flow rate, Load	2.16	kg	
Viscosity number	110	cm^3/g	ISO 307, 1157, 1628
Moulding shrinkage range, parallel	0.5 - 0.7	%	ISO 294-4, 2577

Typical mechanical properties

Tensile Modulus	6000	MPa	ISO 527-1/-2
Stress at break, 5mm/min	100	MPa	ISO 527-1/-2
Strain at break, 5mm/min	3.5	%	ISO 527-1/-2
Flexural Modulus	5600	MPa	ISO 178
Flexural Strength	160	MPa	ISO 178
Charpy notched impact strength, 23°C	6.5	kJ/m^2	ISO 179/1eA
Izod notched impact strength, 23°C	7	kJ/m^2	ISO 180/1A
Izod notched impact strength, -30°C	7	kJ/m^2	ISO 180/1A

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	195	°C	ISO 75-1/-2
Temp. of deflection under load, 0.45 MPa	218	°C	ISO 75-1/-2
Vicat softening temperature, 50°C/h, 50N	220	°C	ISO 306
Coeff. of linear therm. expansion, parallel	35	E-6/K	ISO 11359-1/-2

Flammability

Burning Behav. at thickness h	HB	class	UL 94
Thickness tested	0.85	mm	UL 94

Other properties

Humidity absorption, 2mm	0.2	%	Sim. to ISO 62
Water absorption, 2mm	0.5	%	Sim. to ISO 62
Density	1420	kg/m^3	ISO 1183

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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.

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.

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	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.