

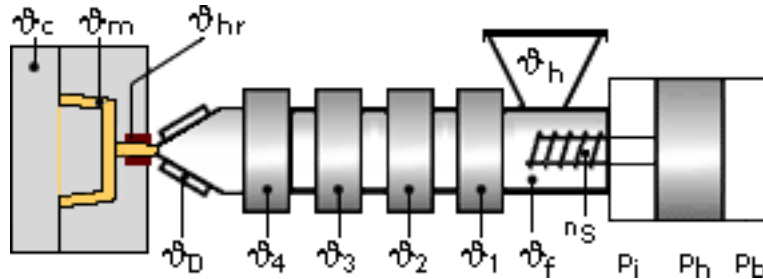
FORTRON® 4665B6 | PPS | Mineral / Glass Reinforced
Description

Fortron 4665B6 offers a high Comparative Tracking Index (CTI) for application requiring resistance to high voltage. The product exhibits good heat and chemical resistance as well as good electrical properties. This grade is also inherently flame-retardant. Due to the balance of mineral and glass fibers the warpage is very low. Applications include electronic components (i.e. lamp sockets, housings and position frames).

Physical properties	Value	Unit	Test Standard
Density	2030	kg/m ³	ISO 1183
Mold shrinkage - parallel	0.2 - 0.6	%	ISO 294-4
Mold shrinkage - normal	0.3 - 0.7	%	ISO 294-4
Water absorption (23°C-sat)	0.02	%	ISO 62
Mechanical properties	Value	Unit	Test Standard
Tensile modulus (1mm/min)	17300	MPa	ISO 527-2/1A
Tensile stress at break (5mm/min)	110	MPa	ISO 527-2/1A
Tensile strain at break (5mm/min)	1.2	%	ISO 527-2/1A
Flexural modulus (23°C)	16000	MPa	ISO 178
Flexural stress @ break	180	MPa	ISO 178
Charpy impact strength @ 23°C	18	kJ/m ²	ISO 179/1eU
Charpy impact strength @ -30°C	18	kJ/m ²	ISO 179/1eU
Charpy notched impact strength @ 23°C	6	kJ/m ²	ISO 179/1eA
Charpy notched impact strength @ -30°C	6	kJ/m ²	ISO 179/1eA
Notched impact strength (Izod) @ 23°C	5.0	kJ/m ²	ISO 180/1A
Notched impact strength (Izod) @-30°C	5	kJ/m ²	ISO 180/1A
Rockwell hardness	100	M-Scale	ISO 2039-2
Thermal properties	Value	Unit	Test Standard
Melting temperature (10°C/min)	280	°C	ISO 11357-1,-2,-3
Glass transition temperature (10°C/min)	90	°C	ISO 11357-1,-2,-3
DTUL @ 1.8 MPa	270	°C	ISO 75-1/-2
DTUL @ 8.0 MPa	215	°C	ISO 75-1/-2
Coeff.of linear therm. expansion (parallel)	0.2	E-4/°C	ISO 11359-2
Coeff.of linear therm. expansion (normal)	0.25	E-4/°C	ISO 11359-2
Flammability @1.6mm nom. thickn. thickness tested (1.6)	V-0 1.5	class mm	UL94 UL94
Flammability at thickness h thickness tested (h)	V-0 0.82	class mm	UL94 UL94
Electrical properties	Value	Unit	Test Standard
Relative permittivity - 1 MHz	5.3	-	IEC 60250
Dissipation factor - 1 MHz	20	E-4	IEC 60250
Volume resistivity	>1E13	Ohm*m	IEC 60093
Surface resistivity	>1E15	Ohm	IEC 60093
Electric strength	25	kV/mm	IEC 60243-1
Comparative tracking index CTI	250	-	IEC 60112
Test specimen production	Value	Unit	Test Standard
Injection molding melt temperature	310 - 340	°C	ISO 294

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Test specimen production	Value	Unit	Test Standard
Injection molding mold temperature	135 - 160	°C	ISO 294

Typical injection moulding processing conditions

Pre Drying:
Necessary low maximum residual moisture content: 0.02%

FORTRON should in principle be predried. Because of the necessary low maximum residual moisture content the use of dry air dryers is recommended. The dew point should be $\leq -30^\circ\text{C}$. The time between drying and processing should be as short as possible.

For subsequent storage the material should be stored dry in the dryer until processed (≤ 60 h).

Drying time: 3 - 4 h
Drying temperature: 130 - 140 °C
Temperature:

	θ_{Manifold}	θ_{Mold}	θ_{Melt}	θ_{Nozzle}	θ_{Zone4}	θ_{Zone3}	θ_{Zone2}	θ_{Zone1}	θ_{Feed}	θ_{Hopper}
min (°C)	330	140	330	310	330	330	310	290	60	20
max (°C)	340	160	340	330	340	340	320	300	80	30

Pressure:

	Inj press	Hold press	Back pressure
min (bar)	500	300	0
max (bar)	1000	700	30

Speed:
Injection speed: fast
Screw speed

	16	25	40	55	75
Screw diameter (mm)	16	25	40	55	75
Screw speed (RPM)	-	120	75	50	-

Injection Molding

On injection molding machines with 15-25 D long three-section screws, as are usual in the trade, the FORTRON is processable. A shut-off nozzle is preferred to a free-flow nozzle.

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Melt temperature 320-340 degC
Mold wall temperature at least 140 degC

A medium injection rate is normally preferred. All mold cavities must be effectively vented.

Contact Information

Americas

8040 Dixie Highway, Florence, KY 41042 USA

Product Information Service

t: +1-800-833-4882 t: +1-859-372-3244

Customer Service

t: +1-800-526-4960 t: +1-859-372-3214

e: info-engineeredmaterials-am@celanese.com

Asia

4560 Jinke Road, Zhang Jiang Hi Tech Park

Shanghai 201203 PRC

Customer Service

t: +86 21 3861 9266 f: +86 21 3861 9599

e: info-engineeredmaterials-asia@celanese.com

Europa

Am Unisys-Park 1, 65843 Sulzbach, Germany

Product Information Service

t: +(00)-800-86427-531 t: +49-(0)-69-45009-1011

e: info-engineeredmaterials-eu@celanese.co

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