FORTRON® 4665B6 - PPS

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/m³	ISO 1183
Molding shrinkage, parallel	**0.2**	%	ISO 294-4, 2577
Molding shrinkage, normal	**0.6**	%	ISO 294-4, 2577
Water absorption, 23°C-sat	**0.02**	%	ISO 62

Mechanical properties	Value	Unit	Test Standard
Tensile modulus	**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 at break	**180**	MPa	ISO 178
Charpy impact strength, 23°C	**18**	kJ/m²	ISO 179/1eU
Charpy impact strength, -30°C	**18**	kJ/m²	ISO 179/1eU
Charpy notched impact strength, 23°C	**6**	kJ/m²	ISO 179/1eA
Charpy notched impact strength, -30°C	**6**	kJ/m²	ISO 179/1eA
Izod impact notched, 23°C	**5**	kJ/m²	ISO 180/1A
Izod impact notched, -30°C	**5**	kJ/m²	ISO 180/1A
Rockwell hardness (M-Scale)	**100**	M-Scale	ISO 2039-2

Thermal properties	Value	Unit	Test Standard
Melting temperature, 10°C/min	**280**	°C	ISO 11357-1/-3
Glass transition temperature, 10°C/min	**90**	°C	ISO 11357-1,-2,-3
DTUL at 1.8 MPa	**270**	°C	ISO 75-1, -2
DTUL at 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.	**V-0**	class	UL 94
thickness tested (1.6)	**1.5**	mm	UL 94
Flammability at thickness h	**V-0**	class	UL 94
thickness tested (h)	**0.82**	mm	UL 94

Electrical properties	Value	Unit	Test Standard
Relative permittivity, 1MHz	**5.3**	-	IEC 60250
Dissipation factor, 1MHz	**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

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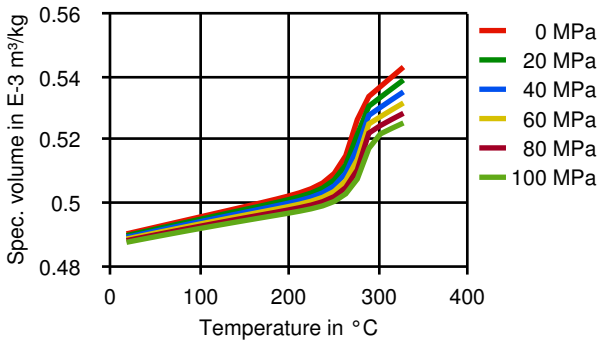
Diagrams

Moldflow Specific volume-temperature (pvT)



Typical injection moulding processing conditions

Pre Drying	Value	Unit	Test Standard
Necessary low maximum residual moisture content	**0.02**	%	-
Drying time	**3 - 4**	h	-
Drying temperature	**130 - 140**	°C	-
Temperature	**Value**	**Unit**	**Test Standard**
Hopper temperature	**20 - 30**	°C	-
Feeding zone temperature	**60 - 80**	°C	-
Zone1 temperature	**290 - 300**	°C	-
Zone2 temperature	**310 - 320**	°C	-
Zone3 temperature	**330 - 340**	°C	-
Zone4 temperature	**330 - 340**	°C	-
Nozzle temperature	**310 - 330**	°C	-
Melt temperature	**330**	°C	-
Mold temperature	**140 - 160**	°C	-
Hot runner temperature	**330 - 340**	°C	-
Pressure	**Value**	**Unit**	**Test Standard**
Back pressure max.	**30**	bar	-
Speed	**Value**	**Unit**	**Test Standard**
Injection speed	**fast**	-	-
Screw Speed	**Value**	**Unit**	**Test Standard**
Screw speed diameter, 25mm	**120**	RPM	-
Screw speed diameter, 40mm	**75**	RPM	-
Screw speed diameter, 55mm	**50**	RPM	-

Other text information

Pre-drying

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 =< - 30° C. The time between drying and processing should be as short as possible.

Longer pre-drying times/storage

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

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.

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.

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Characteristics

Product Categories	Delivery Form
Mineral/Glass reinforced	Pellets
Processing	**Additives**
Injection molding	Release agent

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

Europe
Am Unisys-Park 1
65843 Sulzbach, Germany
Product Information Service
t: +49-800-86427-531
t: +49-(0)-69-45009-1011
e: info-engineeredmaterials-eu@celanese.com

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