FORTRON® 6160B4 - PPS

Description

Fortron 6160B4 has excellent heat and chemical resistance as well as good electrical properties. This product is inherently flame-retardant and offers high hardness and rigidity. 6160B4 has demonstrated excellent performance in hot runner systems and superior contact corrosion resistance. Applications include electronic components (i.e. molded in lead frames, contacts or pins).

Physical properties	Value	Unit	Test Standard
Density	**1900**	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	**145**	MPa	ISO 527-2/1A
Tensile strain at break, 5mm/min	**1**	%	ISO 527-2/1A
Flexural modulus, 23°C	**16700**	MPa	ISO 178
Flexural stress at break	**220**	MPa	ISO 178
Charpy impact strength, 23°C	**27**	kJ/m²	ISO 179/1eU
Charpy impact strength, -30°C	**27**	kJ/m²	ISO 179/1eU
Charpy notched impact strength, 23°C	**7**	kJ/m²	ISO 179/1eA
Charpy notched impact strength, -30°C	**7**	kJ/m²	ISO 179/1eA
Izod impact notched, 23°C	**7**	kJ/m²	ISO 180/1A
Izod impact notched, -30°C	**7**	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	**220**	°C	ISO 75-1, -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)	**0.81**	mm	UL 94

Electrical properties	Value	Unit	Test Standard
Relative permittivity, 1MHz	**4.9**	-	IEC 60250
Dissipation factor, 1MHz	**10**	E-4	IEC 60250
Volume resistivity	**>1E13**	Ohm*m	IEC 60093
Surface resistivity	**>1E15**	Ohm	IEC 60093
Electric strength	**26**	kV/mm	IEC 60243-1

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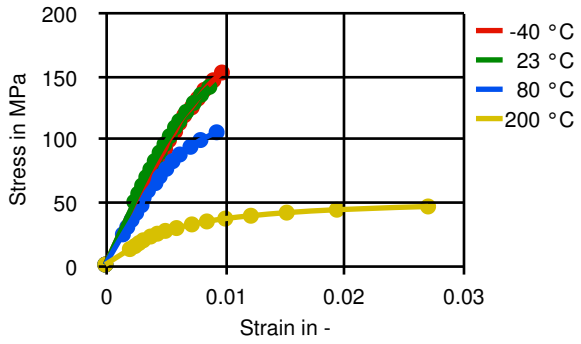
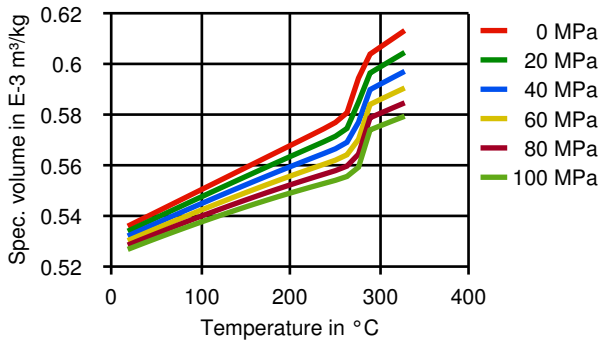
Diagrams

True Stress-strain



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

Mineral/Glass reinforced

Delivery Form

Pellets

Processing

Injection molding

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