

FORTRON® MT9140L4 - PPS

Description

40% Glass reinforced PPS, medical & food handling applications, medium flow

FORTRON® MT9140L4 SF3001 (natural) is a 40% glass fiber reinforced injection molding grade that exhibits excellent heat and chemical resistance, inherent flame retardancy, and high hardness and rigidity at elevated temperatures.

FORTRON® MT9140L4 SF3001 (natural) is a special grade developed for medical industry applications and complies with:

- Food Contact Substance Notification (FCN) No. 40 of the Food and Drug Administration (FDA) and is listed in the Drug Master File (DMF 14844) and the Device Master File (MAF 1097)
- the corresponding EU and national registry regulatory requirements
- biocompatibility in tests corresponding to USP 23 Class VI/ISO 10993
- low residual monomers
- no animal products

Components made of this grade may be used for medical and food handling applications.

Physical properties	Value	Unit	Test Standard
Density	103	lb/ft ³	ISO 1183
Molding shrinkage, parallel (flow)	0.2 - 0.6	%	ISO 294-4, 2577
Molding shrinkage, transverse normal	0.4 - 0.6	%	ISO 294-4, 2577
Water absorption, 23°C-sat	0.02	%	Sim. to ISO 62

Mechanical properties	Value	Unit	Test Standard
Tensile stress at break, 5mm/min	27600	psi	ISO 527-1, -2
Tensile strain at break, 5mm/min	1.8	%	ISO 527-1, -2
Flexural modulus, 23°C	2.03E6	psi	ISO 178
Flexural strength, 23°C	40600	psi	ISO 178
Charpy impact strength, 23°C	22.8	ft-lb/in ²	ISO 179/1eU
Charpy notched impact strength, 23°C	4.28	ft-lb/in ²	ISO 179/1eA
Izod impact notched, 23°C	4.76	ft-lb/in ²	ISO 180/1A
Izod impact unnotched, 23°C	15.2	ft-lb/in ²	ISO 180/1U
Rockwell hardness (M-Scale)	100	M-Scale	ISO 2039-2

Thermal properties	Value	Unit	Test Standard
Melting temperature, 10°C/min	536	°F	ISO 11357-1/-3
Glass transition temperature, 10°C/min	194	°F	ISO 11357-1,-2,-3
DTUL at 1.8 MPa	518	°F	ISO 75-1, -2
DTUL at 8.0 MPa	392	°F	ISO 75-1, -2

Typical injection moulding processing conditions

Pre Drying	Value	Unit
Necessary low maximum residual moisture content	0.02	%
Drying time	3 - 4	h
Drying temperature	266 - 284	°F

Temperature	Value	Unit
Hopper temperature	68 - 86	°F
Feeding zone temperature	140 - 176	°F
Zone1 temperature	554 - 572	°F
Zone2 temperature	590 - 608	°F
Zone3 temperature	626 - 644	°F
Zone4 temperature	626 - 644	°F
Nozzle temperature	590 - 626	°F
Melt temperature	626	°F



FORTRON® MT9140L4 - PPS

Mold temperature	284 - 320	°F
Hot runner temperature	626 - 644	°F

Pressure	Value	Unit
Back pressure max.	30	bar

Speed	Value
Injection speed	fast

Screw Speed	Value	Unit
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 $\leq -30^{\circ}\text{C}$. 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 ($\leq 60\text{ h}$).

Characteristics

Special Characteristics	Chemical resistant, Flame retardant, Heat resistant
Product Categories	Medical technology
Processing	Injection molding
Regulatory	FDA food contact compliant, Medical grade
Delivery Form	Pellets
Additives	Release agent

