

FORTRON® MT9140L4 | PPS | Medical Technology

Description

Fortron MT 9140L4 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.

Components made of this grade may be used for medical and food handling applications. Fortron MT 9140L4 is in compliance with ISO 10993, USP Class VI, and is included in the Fortron Drug and Device Master Files at the FDA. The grade complies with the FDA Food Contact Notification (FCN-No. 40) for repeat-use applications.

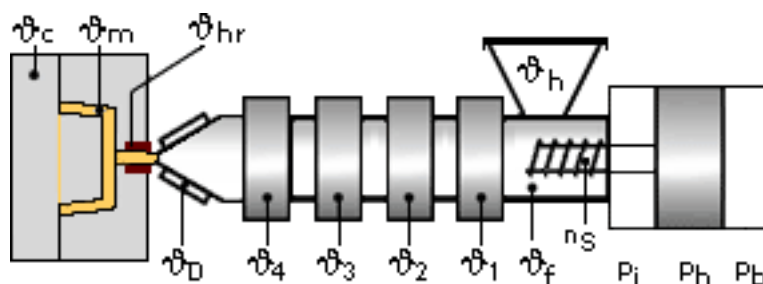
Physical properties	Value	Unit	Test Standard
Density	1650	kg/m ³	ISO 1183
Mold shrinkage - parallel	0.2 to 0.6	%	ISO 294-4
Mold shrinkage - normal	0.4 to 0.6	%	ISO 294-4
Water absorption (23°C-sat)	0.02	%	ISO 62

Mechanical properties	Value	Unit	Test Standard
Tensile stress at break (5mm/min)	190	MPa	ISO 527-2/1A
Tensile strain at break (5mm/min)	1.8	%	ISO 527-2/1A
Flexural modulus (23°C)	14000	MPa	ISO 178
Flexural strength (23°C)	280	MPa	ISO 178
Charpy impact strength @ 23°C	48	kJ/m ²	ISO 179/1eU
Charpy notched impact strength @ 23°C	9	kJ/m ²	ISO 179/1eA
Unnotched impact str (Izod) @ 23°C	32	kJ/m ²	ISO 180/1U
Notched impact strength (Izod) @ 23°C	10	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	200	°C	ISO 75-1/-2

Test specimen production	Value	Unit	Test Standard
Injection molding melt temperature	310 - 340	°C	ISO 294
Injection molding mold temperature	135 - 160	°C	ISO 294

Typical injection moulding processing conditions



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Maximum residual moisture content: 0.0200%

Processing Temperatures:

	ϑ _{Cavity}	ϑ _{Melt}	ϑ _{Hot Runner}	ϑ _{Die}	ϑ ₄	ϑ ₃	ϑ ₂	ϑ ₁	ϑ _{Feeding}	ϑ _{Hopper}
min (°C)	140	330	330	310	330	330	310	290	60	20
max (°C)	160	340	340	330	340	340	320	300	80	30

Processing Pressures:

	Injection Pressure	Holding Pressure	Back Pressure
min (bar)	500	300	0
max (bar)	1000	700	30

Injection speed: fast

Screw speed:

Screw diameter (mm)	25	40	55
Screw speed (rpm)	120	75	50

Pre-drying conditions:

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

Special information:

No special information available.

Injection Molding

On injection molding machines with 15-25 D long three-section screws, are usual in the trade, the unreinforced 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.

