

FORTRON® MT9140L6 | PPS | Medical Technology

Description

Fortron MT9140L6 is a 40% glass fiber reinforced injection molding grade with a low melt viscosity. It exhibits excellent heat and chemical resistance, inherent flame retardancy and shows high hardness and rigidity at elevated temperatures. Fortron MT9140L6 is used for thin walled parts with long flow lengths.

Components made of this grade may be used for medical, dental, pharmaceutical, and certain food handling applications. Fortron MT9140L6 is in compliance with ISO 10993, USP Class VI, and is included in the Fortron Drug and Device Master Files at the FDA. It 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

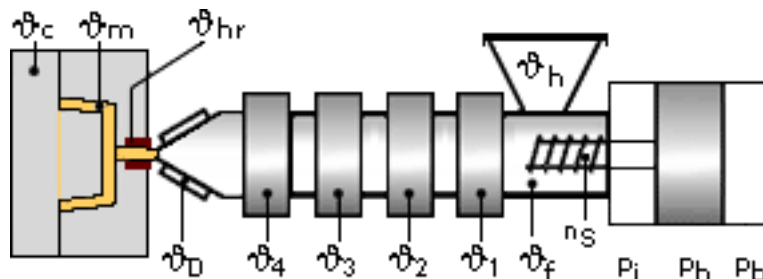
Mechanical properties	Value	Unit	Test Standard
Tensile stress at break (5mm/min)	190	MPa	ISO 527-2/1A
Tensile strain at break (5mm/min)	1.8	%	ISO 527-2/1A
Flexural modulus (23°C)	14000	MPa	ISO 178
Flexural strength (23°C)	280	MPa	ISO 178
Charpy impact strength @ 23°C	48	kJ/m ²	ISO 179/1eU
Charpy notched 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

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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:

	$\varnothing_{\text{Manifold}}$	$\varnothing_{\text{Mold}}$	$\varnothing_{\text{Melt}}$	$\varnothing_{\text{Nozzle}}$	$\varnothing_{\text{Zone4}}$	$\varnothing_{\text{Zone3}}$	$\varnothing_{\text{Zone2}}$	$\varnothing_{\text{Zone1}}$	$\varnothing_{\text{Feed}}$	$\varnothing_{\text{Hopper}}$
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

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

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General Disclaimer

NOTICE TO USERS: Values shown are based on testing of laboratory test specimens and represent data that fall within the standard range of properties for natural material. These values alone do not represent a sufficient basis for any part design and are not intended for use in establishing maximum, minimum, or ranges of values for specification purposes. Colorants or other additives may cause significant variations in data values.

Properties of molded parts can be influenced by a wide variety of factors including, but not limited to, material selection, additives, part design, processing conditions and environmental exposure. Any determination of the suitability of a particular material and part design for any use contemplated by the users and the manner of such use is the sole responsibility of the users, who must assure themselves that the material as subsequently processed meets the needs of their particular product or use.

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Moreover, there is a need to reduce human exposure to many materials to the lowest practical limits in view of possible adverse effects. To the extent that any hazards may have been mentioned in this publication, we neither suggest nor guarantee that such hazards are the only ones that exist. We recommend that persons intending to rely on any recommendation or to use any equipment, processing technique or material mentioned in this publication should satisfy themselves that they can meet all applicable safety and health standards.

We strongly recommend that users seek and adhere to the manufacturer's current instructions for handling each material they use, and entrust the handling of such material to adequately trained personnel only. Please call the telephone numbers listed (+49 (0) 69 30516299 for Europe and +1 859-372-3244 for the Americas) for additional technical information. Call Customer Services for the appropriate Materials Safety Data Sheets (MSDS) before attempting to process our products.

The products mentioned herein are not intended for use in medical or dental implants.

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