Ticona
Performance Driven Solutions™

FORTRON® 1140L6 | PPS | Glass Reinforced

Description

Fortron 1140L6 is an easier flow version of Fortron 1140L4. It offers essentially the same characteristics of 1140L4. Especially used for thin walled parts with long flow lengths. Applications made of this grade include components for pumps and electronics.

Physical properties	Value	Unit	Test Standard
Density	**1650**	kg/m³	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 modulus (1mm/min)	**14700**	MPa	ISO 527-2/1A
Tensile stress at break (5mm/min)	**195**	MPa	ISO 527-2/1A
Tensile strain at break (5mm/min)	**1.9**	%	ISO 527-2/1A
Flexural modulus (23°C)	**14500**	MPa	ISO 178
Flexural stress @ break	**285**	MPa	ISO 178
Charpy impact strength @ 23°C	**53**	kJ/m²	ISO 179/1eU
Charpy impact strength @ -30°C	**53**	kJ/m²	ISO 179/1eU
Charpy notched impact strength @ 23°C	**10**	kJ/m²	ISO 179/1eA
Charpy notched impact strength @ -30°C	**10**	kJ/m²	ISO 179/1eA
Unnotched impact str (Izod) @ 23°C	**34**	kJ/m²	ISO 180/1U
Notched impact strength (Izod) @ 23°C	**10**	kJ/m²	ISO 180/1A
Notched impact strength (Izod) @-30°C	**10**	kJ/m²	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	**215**	°C	ISO 75-1/-2
Coeff.of linear therm. expansion (parallel)	**0.26**	E-4/°C	ISO 11359-2
Coeff.of linear therm. expansion (normal)	**0.42**	E-4/°C	ISO 11359-2
Flammability @1.6mm nom. thickn.	**V-0**	class	UL94
thickness tested (1.6)	**1.5**	mm	UL94
Flammability at thickness h	**V-0**	class	UL94
thickness tested (h)	**0.38**	mm	UL94

Electrical properties	Value	Unit	Test Standard
Relative permittivity - 10kHz	**4**	-	IEC 60250
Relative permittivity - 1 MHz	**4.1**	-	IEC 60250
Dissipation factor - 10kHz	**2**	E-4	IEC 60250
Dissipation factor - 1 MHz	**20**	E-4	IEC 60250
Volume resistivity	**>1E13**	Ohm*m	IEC 60093
Surface resistivity	**>1E15**	Ohm	IEC 60093
Electric strength	**28**	kV/mm	IEC 60243-1
Comparative tracking index CTI	**125**	-	IEC 60112

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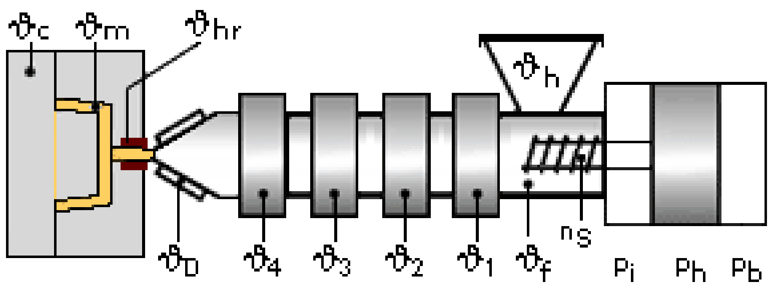
Other properties	Value	Unit	Test Standard
CSA rating @ 0.84 mm	**A00**	-	CSA F-1

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

Rheological Calculation properties	Value	Unit	Test Standard
Specific heat capacity of melt	**1500**	J/(kg K)	Internal

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 =< - 30° 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:

	ϑManifold	ϑMold	ϑMelt	ϑNozzle	ϑZone4	ϑZone3	ϑZone2	ϑZone1	ϑFeed	ϑHopper
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

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Screw speed

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

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.

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Melt temperature            320-340  degC
Mold wall temperature  at least 140  degC
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A medium injection rate is normally preferred. All mold cavities must be effectively vented.

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General Disclaimer

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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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