

FORTRON® 1140L6 DW - PPS

Description

40% Glass reinforced, easy flow, strong and tough, V-0

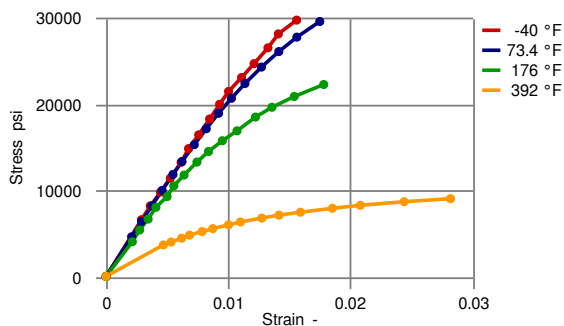
Fortron 1140L6 is an easier flow version of Fortron 1140L4 developed for drinking water applications. It offers essentially the same characteristics of 1140L4. Especially used for thin walled parts with long flow lengths. Applications made of this grade include components for pumps and electronics.

Physical properties	Value	Unit	Test Standard
Density	103	lb/ft ³	ISO 1183
Molding shrinkage, parallel (flow)	0.3	%	ISO 294-4, 2577
Molding shrinkage, transverse normal	0.6	%	ISO 294-4, 2577
Water absorption, 23°C-sat	0.02	%	Sim. to ISO 62
Mechanical properties	Value	Unit	Test Standard
Tensile modulus	2.13E6	psi	ISO 527-1, -2
Tensile stress at break, 5mm/min	28300	psi	ISO 527-1, -2
Tensile strain at break, 5mm/min	1.9	%	ISO 527-1, -2
Flexural modulus, 23°C	2.1E6	psi	ISO 178
Flexural stress at break	41300	psi	ISO 178
Charpy impact strength, 23°C	25.2	ft-lb/in ²	ISO 179/1eU
Charpy impact strength, -30°C	25.2	ft-lb/in ²	ISO 179/1eU
Charpy notched impact strength, 23°C	4.76	ft-lb/in ²	ISO 179/1eA
Charpy notched impact strength, -30°C	4.76	ft-lb/in ²	ISO 179/1eA
Izod impact notched, 23°C	4.76	ft-lb/in ²	ISO 180/1A
Izod impact notched, -30°C	4.76	ft-lb/in ²	ISO 180/1A
Izod impact unnotched, 23°C	16.2	ft-lb/in ²	ISO 180/1U
Izod impact unnotched, -30°C	16.2	ft-lb/in ²	ISO 180/1U
Compressive modulus	2.1E6	psi	ISO 604
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	419	°F	ISO 75-1, -2
Coeff. of linear therm expansion, parallel	0.144	E-4/°F	ISO 11359-2
Coeff. of linear therm expansion, normal	0.233	E-4/°F	ISO 11359-2
Flammability @1.6mm nom. thickn. thickness tested (1.6)	V-0 0.1	class in	UL 94 UL 94
Flammability at thickness h thickness tested (h)	V-0 0.0150	class in	UL 94 UL 94
CSA rating @ 0.84 mm	A00	-	CSA F-1
Glow wire ignition temperature, 1.0 mm	1700	°F	IEC 60695-2-13
Glow wire flammability index, 1.0 mm	1650	°F	IEC 60695-2-12
Glow wire flammability index, 2.0 mm	1650	°F	IEC 60695-2-12
Electrical properties	Value	Unit	Test Standard
Dielectric constant (Dk), 1MHz	4.2	-	IEC 60250
Dissipation factor, 1MHz	20	E-4	IEC 60250
Volume resistivity, 23°C	>1E13	Ohm*m	IEC 62631-3-1
Surface resistivity, 23°C	1.3E14	Ohm	IEC 62631-3-2
Comparative tracking index	PLC 4	-	UL 746
Rheological calculation properties	Value	Unit	Test Standard
Spec. heat capacity melt	1500	J/(kg K)	Internal



Diagrams

True Stress-strain



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
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



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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 ($\leq 60\text{ h}$).

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.

Injection Molding Preprocessing

Predrying in a dehumidified air dryer at 130 - 140 degC/3-4 hours is recommended.

Injection Molding Postprocessing

Tool temperature of at least 135 degC is recommended for parts to achieve maximum crystallizable potential.

Characteristics

Special Characteristics	Auto spec approved, Flame retardant, High flow
Product Categories	Glass reinforced
Processing	Injection molding
Regulatory	Drinking water approved
Delivery Form	Pellets
Additives	Release agent

