

**Product Texts**

Fortron LM1140L4 is a 40% glass-reinforced grade that is the strongest and toughest product available. It is laser markable. It exhibits excellent heat and chemical resistance, good electrical properties and is inherently flame-retardant. The high hardness and rigidity at elevated temperatures allows for good load bearing performance. This product has good weldability due to the modest filler level. Applications made of this grade are electrical components (i.e. bobbins, lamp housings, brush holders) and various other components requiring strength and resistance to aggressive chemicals (i.e. automotive heaters, pumps, valves, fuel rails, microwave oven rings and distillation column packings).

Flammability @1.6mm nom. V-0  
 thickn. -  
 Flammability at thickness h (0.38 V-0  
 mm) -

Processing/Physical Characteristics	Value	Unit	Test Standard
<b>ISO Data</b>			
<sup>[C]</sup> Molding shrinkage, parallel	0.3	%	ISO 294-4, 2577
<sup>[C]</sup> Molding shrinkage, normal	0.6	%	ISO 294-4, 2577
<sup>[C]</sup> Spec. heat capacity of melt	1500	J/(kg K)	-

[C]: CAMPUS

Mechanical properties	Value	Unit	Test Standard
<b>ISO Data</b>			
<sup>[C]</sup> Tensile Modulus	14700	MPa	ISO 527
<sup>[C]</sup> Stress at break	195	MPa	ISO 527
<sup>[C]</sup> Strain at break	1.9	%	ISO 527
<sup>[C]</sup> Charpy impact strength, +23°C	53	kJ/m <sup>2</sup>	ISO 179/1eU
<sup>[C]</sup> Charpy impact strength, -30°C	53	kJ/m <sup>2</sup>	ISO 179/1eU
<sup>[C]</sup> Charpy notched impact strength, +23°C	10	kJ/m <sup>2</sup>	ISO 179/1eA
<sup>[C]</sup> Charpy notched impact strength, -30°C	10	kJ/m <sup>2</sup>	ISO 179/1eA

[C]: CAMPUS

Thermal properties	Value	Unit	Test Standard
<b>ISO Data</b>			
<sup>[C]</sup> Melting temperature, 10°C/min	280	°C	ISO 11357-1/-3
<sup>[C]</sup> Glass transition temperature, 10°C/min	90	°C	ISO 11357-1/-2
<sup>[C]</sup> Temp. of deflection under load, 1.80 MPa	270	°C	ISO 75-1/-2
<sup>[C]</sup> Temp. of deflection under load, 8.00 MPa	215	°C	ISO 75-1/-2
<sup>[C]</sup> Coeff. of linear therm. expansion, parallel	26	E-6/K	ISO 11359-1/-2
<sup>[C]</sup> Coeff. of linear therm. expansion, normal	42	E-6/K	ISO 11359-1/-2
<sup>[C]</sup> Burning Behav. at 1.5 mm nom. thickn.	V-0	class	IEC 60695-11-10
Thickness tested	1.5	mm	-
<sup>[C]</sup> Burning Behav. at thickness h	V-0	class	IEC 60695-11-10
Thickness tested	0.4	mm	-
<sup>[C]</sup> Burning Behav. 5V at thickness h	5VA	class	IEC 60695-11-20
Thickness tested	3.0	mm	-
<sup>[C]</sup> Oxygen index	47	%	ISO 4589-1/-2

[C]: CAMPUS

Electrical properties	Value	Unit	Test Standard
<b>ISO Data</b>			
<sup>[C]</sup> Relative permittivity, 1MHz	4.1	-	IEC 62631-2-1
<sup>[C]</sup> Dissipation factor, 1MHz	20	E-4	IEC 62631-2-1
<sup>[C]</sup> Volume resistivity	>1E13	Ohm*m	IEC 62631-3-1
<sup>[C]</sup> Surface resistivity	6.6E11	Ohm	IEC 62631-3-2
<sup>[C]</sup> Electric strength	28	kV/mm	IEC 60243-1

[C]: CAMPUS

<b>Other properties</b>	<b>Value</b>	<b>Unit</b>	<b>Test Standard</b>
<sup>[C]</sup> Water absorption	<b>0.02</b>	%	Sim. to ISO 62
<sup>[C]</sup> Density	<b>1650</b>	kg/m <sup>3</sup>	ISO 1183

[C]: CAMPUS

**Characteristics****Processing**

Injection Molding

**Additives**

Release agent

**Delivery form**

Pellets

**Other text information****Injection molding**

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

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.

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