



## ULTEM™ Resin 1110F

### Americas: COMMERCIAL

Enhanced flow Polyetherimide (Tg 217°C). ECO Conforming. US FDA and EU Food Contact compliant, NSF 51 listing. UL94 V0 and 5VA listing. Effective June 2007, this grade will no longer be supported with biocompatibility information and should not be used for medical applications which require biocompatibility. Alternative grade HU1110.

TYPICAL PROPERTIES <sup>1</sup>	TYPICAL VALUE	Unit	Standard
<b>MECHANICAL</b>			
Tensile Stress, yld, Type I, 5 mm/min	1120	kgf/cm <sup>2</sup>	ASTM D 638
Tensile Strain, brk, Type I, 5 mm/min	70	%	ASTM D 638
Tensile Modulus, 5 mm/min	37900	kgf/cm <sup>2</sup>	ASTM D 638
Flexural Stress, yld, 2.6 mm/min, 100 mm span	1680	kgf/cm <sup>2</sup>	ASTM D 790
Flexural Modulus, 2.6 mm/min, 100 mm span	37900	kgf/cm <sup>2</sup>	ASTM D 790
<b>IMPACT</b>			
Izod Impact, Reverse Notched, 3.2 mm	196	cm-kgf/cm	ASTM D 256
Gardner, 23°C	235	cm-kgf	ASTM D 3029
<b>THERMAL</b>			
HDT, 1.82 MPa, 6.4 mm, unannealed	198	°C	ASTM D 648
Relative Temp Index, Elec	170	°C	UL 746B
Relative Temp Index, Mech w/impact	170	°C	UL 746B
Relative Temp Index, Mech w/o impact	170	°C	UL 746B
<b>PHYSICAL</b>			
Specific Gravity	1.36	-	ASTM D 792
Mold Shrinkage, flow, 3.2 mm (5)	0.5 - 0.7	%	SABIC Method
Melt Flow Rate, 337°C/6.6 kgf	16	g/10 min	ASTM D 1238
<b>ELECTRICAL</b>			
Arc Resistance, Tungsten {PLC}	5	PLC Code	ASTM D 495
Hot Wire Ignition {PLC}	1	PLC Code	UL 746A
High Voltage Arc Track Rate {PLC}	2	PLC Code	UL 746A
High Ampere Arc Ign, surface {PLC}	3	PLC Code	UL 746A
Comparative Tracking Index (UL) {PLC}	4	PLC Code	UL 746A
<b>FLAME CHARACTERISTICS</b>			
UL Recognized, 94V-0 Flame Class Rating (3)	0.75	mm	UL 94
UL Recognized, 94-5VA Rating (3)	3	mm	UL 94

(1) Typical values only. Variations within normal tolerances are possible for various colors. All values are measured after at least 48 hours storage at 23°C/50% relative humidity. All properties, except the melt volume and melt flow rates, are measured on injection molded samples. All samples tested under ISO test standards are prepared according to ISO 294.

(2) Only typical data for selection purposes. Not to be used for part or tool design.  
(3) This rating is not intended to reflect hazards presented by this or any other material under actual fire conditions.

(4) Internal measurements according to UL standards.

(5) Measurements made from laboratory test coupon. Actual shrinkage may vary outside of range due to differences in processing conditions, equipment, part geometry and tool design. It is recommended that mold shrinkage studies be performed with surrogate or legacy tooling prior to cutting tools for new molded article.

(6) Needs hard coat to consistently pass 60 sec Vertical Burn.

Source GMD, last updated:

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PROCESSING PARAMETERS	TYPICAL VALUE	Unit
<b>Injection Molding</b>		
Drying Temperature	150	°C
Drying Time	4 - 6	hrs
Drying Time (Cumulative)	24	hrs
Maximum Moisture Content	0.02	%
Melt Temperature	350 - 400	°C
Nozzle Temperature	345 - 400	°C
Front - Zone 3 Temperature	345 - 400	°C
Middle - Zone 2 Temperature	340 - 400	°C
Rear - Zone 1 Temperature	330 - 400	°C
Mold Temperature	135 - 165	°C
Back Pressure	0.3 - 0.7	MPa
Screw Speed	40 - 70	rpm
Shot to Cylinder Size	40 - 60	%
Vent Depth	0.025 - 0.076	mm

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