



## ULTEM™ Resin HU2100

### Americas: COMMERCIAL

10% Glass fiber filled, standard flow Polyetherimide (Tg 217C). US FDA and European Food Contact approved. For medical devices and pharmaceutical applications. Healthcare management of change, biocompatible (ISO 10993 or USP Class VI).

TYPICAL PROPERTIES <sup>1</sup>	TYPICAL VALUE	Unit	Standard
<b>MECHANICAL</b>			
Tensile Stress, yld, Type I, 5 mm/min	1160	kgf/cm <sup>2</sup>	ASTM D 638
Tensile Stress, brk, Type I, 5 mm/min	1170	kgf/cm <sup>2</sup>	ASTM D 638
Tensile Strain, yld, Type I, 5 mm/min	6	%	ASTM D 638
Tensile Strain, brk, Type I, 5 mm/min	6	%	ASTM D 638
Tensile Modulus, 5 mm/min	47700	kgf/cm <sup>2</sup>	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	1630	kgf/cm <sup>2</sup>	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	56000	kgf/cm <sup>2</sup>	ASTM D 790
Tensile Stress, yield, 5 mm/min	115	MPa	ISO 527
Tensile Stress, break, 5 mm/min	115	MPa	ISO 527
Tensile Strain, yield, 5 mm/min	4	%	ISO 527
Tensile Strain, break, 5 mm/min	4	%	ISO 527
Tensile Modulus, 1 mm/min	4500	MPa	ISO 527
Flexural Stress, break, 2 mm/min	185	MPa	ISO 178
Flexural Modulus, 2 mm/min	4500	MPa	ISO 178
<b>IMPACT</b>			
Izod Impact, notched, 23°C	5	cm-kgf/cm	ASTM D 256
Izod Impact, notched, -30°C	5	cm-kgf/cm	ASTM D 256
Instrumented Impact Total Energy, 23°C	101	cm-kgf	ASTM D 3763
Izod Impact, unnotched 80*10*4 +23°C	30	kJ/m <sup>2</sup>	ISO 180/1U
Izod Impact, unnotched 80*10*4 -30°C	30	kJ/m <sup>2</sup>	ISO 180/1U
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	7	kJ/m <sup>2</sup>	ISO 179/1eA
<b>THERMAL</b>			
Vicat Softening Temp, Rate B/50	223	°C	ASTM D 1525

(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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TYPICAL PROPERTIES <sup>1</sup>	TYPICAL VALUE	Unit	Standard
<b>THERMAL</b>			
HDT, 1.82 MPa, 3.2mm, unannealed	205	°C	ASTM D 648
CTE, -40°C to 40°C, flow	3.24E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, xflow	6.E-05	1/°C	ASTM E 831
CTE, 23°C to 150°C, flow	2.6E-05	1/°C	ISO 11359-2
CTE, 23°C to 150°C, xflow	6.E-05	1/°C	ISO 11359-2
Vicat Softening Temp, Rate B/50	212	°C	ISO 306
Vicat Softening Temp, Rate B/120	217	°C	ISO 306
HDT/Ae, 1.8 MPa Edgew 120*10*4 sp=100mm	205	°C	ISO 75/Ae
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	1.34	-	ASTM D 792
Mold Shrinkage, flow, 3.2 mm (5)	0.5 - 0.6	%	SABIC Method
Melt Flow Rate, 200°C/3.8 kgf	5	g/10 min	ASTM D 1238
Density	1.34	g/cm <sup>3</sup>	ISO 1183
Water Absorption, (23°C/sat)	1	%	ISO 62
Moisture Absorption (23°C / 50% RH)	0.6	%	ISO 62
Melt Volume Rate, MVR at 360°C/5.0 kg	9	cm <sup>3</sup> /10 min	ISO 1133
<b>ELECTRICAL</b>			
Dielectric Strength, in oil, 3.2 mm	15	kV/mm	IEC 60243-1
Comparative Tracking Index	150	V	IEC 60112

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

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PROCESSING PARAMETERS	TYPICAL VALUE	Unit
<b>Injection Molding</b>		
Drying Temperature	150	°C
Drying Time	4 - 6	hrs
Maximum Moisture Content	0.02	%
Melt Temperature	370 - 410	°C
Nozzle Temperature	350 - 405	°C
Front - Zone 3 Temperature	360 - 415	°C
Middle - Zone 2 Temperature	350 - 405	°C
Rear - Zone 1 Temperature	340 - 395	°C
Hopper Temperature	80 - 120	°C
Mold Temperature	140 - 180	°C

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