



## ULTEM™ Resin 2310EPR Americas: COMMERCIAL

30% Glass fiber filled, high flow Polyetherimide (Tg 217C) with internal mold release and enhanced electroplatability. ECO Conforming, UL94 V0 listing.

TYPICAL PROPERTIES <sup>1</sup>	TYPICAL VALUE	Unit	Standard
<b>MECHANICAL</b>			
Tensile Stress, yld, Type I, 5 mm/min	1610	kgf/cm <sup>2</sup>	ASTM D 638
Tensile Stress, brk, Type I, 5 mm/min	1610	kgf/cm <sup>2</sup>	ASTM D 638
Tensile Strain, yld, Type I, 5 mm/min	2.1	%	ASTM D 638
Tensile Strain, brk, Type I, 5 mm/min	2.1	%	ASTM D 638
Tensile Modulus, 5 mm/min	87400	kgf/cm <sup>2</sup>	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	2320	kgf/cm <sup>2</sup>	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	93200	kgf/cm <sup>2</sup>	ASTM D 790
Tensile Stress, yield, 5 mm/min	160	MPa	ISO 527
Tensile Stress, break, 5 mm/min	160	MPa	ISO 527
Tensile Strain, yield, 5 mm/min	2	%	ISO 527
Tensile Strain, break, 5 mm/min	2	%	ISO 527
Tensile Modulus, 1 mm/min	8970	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	210	MPa	ISO 178
Flexural Modulus, 2 mm/min	9500	MPa	ISO 178
Hardness, H358/30	160	MPa	ISO 2039-1
<b>IMPACT</b>			
Izod Impact, unnotched, 23°C	45	cm-kgf/cm	ASTM D 4812
Izod Impact, notched, 23°C	8	cm-kgf/cm	ASTM D 256
Instrumented Impact Total Energy, 23°C	91	cm-kgf	ASTM D 3763
Izod Impact, unnotched 80°10*4 +23°C	35	kJ/m <sup>2</sup>	ISO 180/1U
Izod Impact, unnotched 80°10*4 -30°C	35	kJ/m <sup>2</sup>	ISO 180/1U
Izod Impact, notched 80°10*4 +23°C	10	kJ/m <sup>2</sup>	ISO 180/1A

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

Source GMD, last updated:

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<b>IMPACT</b>			
Izod Impact, notched 80*10*4 -30°C	10	kJ/m <sup>2</sup>	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	10	kJ/m <sup>2</sup>	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80*10*4 sp=62mm	10	kJ/m <sup>2</sup>	ISO 179/1eA
Charpy 23°C, Unnotch Edgew 80*10*4 sp=62mm	30	kJ/m <sup>2</sup>	ISO 179/1eU
Charpy -30°C, Unnotch Edgew 80*10*4 sp=62mm	35	kJ/m <sup>2</sup>	ISO 179/1eU
<b>THERMAL</b>			
Vicat Softening Temp, Rate B/50	217	°C	ASTM D 1525
HDT, 0.45 MPa, 3.2 mm, unannealed	205	°C	ASTM D 648
HDT, 1.82 MPa, 3.2mm, unannealed	201	°C	ASTM D 648
HDT, 0.45 MPa, 6.4 mm, unannealed	208	°C	ASTM D 648
HDT, 1.82 MPa, 6.4 mm, unannealed	205	°C	ASTM D 648
CTE, -40°C to 150°C, flow	1.8E-05	1/°C	ASTM E 831
CTE, -40°C to 150°C, xflow	3.E-05	1/°C	ASTM E 831
Thermal Conductivity	0.31	W/m-°C	ISO 8302
CTE, 23°C to 150°C, flow	1.8E-05	1/°C	ISO 11359-2
CTE, 23°C to 150°C, xflow	3.E-05	1/°C	ISO 11359-2
Ball Pressure Test, 125°C +/- 2°C	Passes	-	IEC 60695-10-2
Vicat Softening Temp, Rate B/50	212	°C	ISO 306
Vicat Softening Temp, Rate B/120	214	°C	ISO 306
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	207	°C	ISO 75/Bf
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	196	°C	ISO 75/Af
<b>PHYSICAL</b>			
Specific Gravity	1.48	-	ASTM D 792
Mold Shrinkage on Tensile Bar, flow (2) (5)	0.3 - 0.5	%	SABIC Method
Mold Shrinkage, flow, 3.2 mm (5)	0.4 - 0.6	%	SABIC Method

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

Source GMD, last updated:

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<b>PHYSICAL</b>			
Mold Shrinkage, xflow, 3.2 mm (5)	0.4 - 0.6	%	SABIC Method
Melt Flow Rate, 337°C/6.6 kgf	11	g/10 min	ASTM D 1238
Density	1.48	g/cm <sup>3</sup>	ISO 1183
Water Absorption, (23°C/sat)	0.9	%	ISO 62
Moisture Absorption (23°C / 50% RH)	0.5	%	ISO 62
Melt Volume Rate, MVR at 360°C/5.0 kg	12	cm <sup>3</sup> /10 min	ISO 1133
<b>ELECTRICAL</b>			
Arc Resistance, Tungsten {PLC}	6	PLC Code	ASTM D 495
Hot Wire Ignition {PLC}	4	PLC Code	UL 746A
High Voltage Arc Track Rate {PLC}	4	PLC Code	UL 746A
High Ampere Arc Ign, surface {PLC}	4	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)	0.4	mm	UL 94

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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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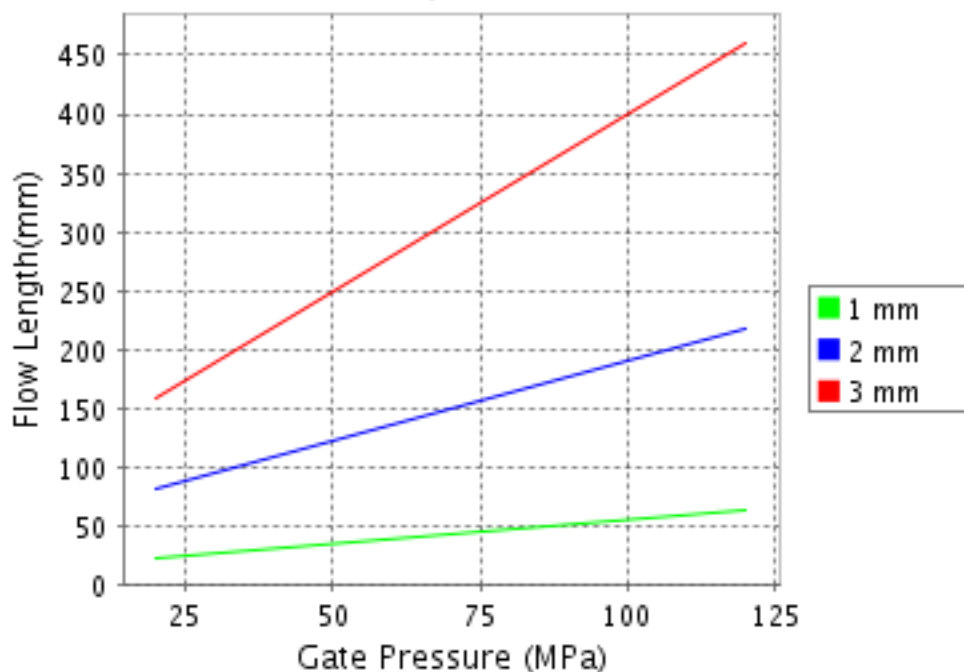
**CALCULATED FLOW LENGTH INDICATION**

**Moldflow® Radial Flow Analysis**

**ULTEM® 2310EPR**

**Melt Temperature : 375°C**

**Mold Temperature : 150°C**



**Note: Technical support is recommended if Gate**

**Pressure is greater than 80 MPa. Contact your local representative.**

**® Moldflow is a registered trademark of the Moldflow Corporation.**

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