ULTEM™ Resin 2312EPR
Americas: COMMERCIAL

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

TYPICAL PROPERTIES[1]	TYPICAL VALUE	Unit	Standard
MECHANICAL			
Tensile Stress, yld, Type I, 5 mm/min	960	kgf/cm²	ASTM D 638
Tensile Stress, brk, Type I, 5 mm/min	960	kgf/cm²	ASTM D 638
Tensile Strain, yld, Type I, 5 mm/min	2	%	ASTM D 638
Tensile Strain, brk, Type I, 5 mm/min	2	%	ASTM D 638
Tensile Modulus, 5 mm/min	66000	kgf/cm²	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	1590	kgf/cm²	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	56900	kgf/cm²	ASTM D 790
Tensile Stress, yield, 5 mm/min	80	MPa	ISO 527
Tensile Stress, break, 5 mm/min	80	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	5300	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	145	MPa	ISO 178
Flexural Modulus, 2 mm/min	5500	MPa	ISO 178
IMPACT			
Izod Impact, unnotched, 23°C	33	cm-kgf/cm	ASTM D 4812
Izod Impact, notched, 23°C	4	cm-kgf/cm	ASTM D 256
Instrumented Impact Total Energy, 23°C	152	cm-kgf	ASTM D 3763
Izod Impact, unnotched 80*10*4 +23°C	25	kJ/m²	ISO 180/1U
Izod Impact, unnotched 80*10*4 -30°C	25	kJ/m²	ISO 180/1U
Izod Impact, notched 80*10*4 +23°C	5	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	5	kJ/m²	ISO 180/1A

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(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.

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IMPACT			
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	5	kJ/m²	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80*10*4 sp=62mm	4	kJ/m²	ISO 179/1eA
Charpy 23°C, Unnotch Edgew 80*10*4 sp=62mm	25	kJ/m²	ISO 179/1eU
Charpy -30°C, Unnotch Edgew 80*10*4 sp=62mm	25	kJ/m²	ISO 179/1eU
THERMAL			
Vicat Softening Temp, Rate B/50	216	°C	ASTM D 1525
HDT, 0.45 MPa, 3.2 mm, unannealed	204	°C	ASTM D 648
HDT, 1.82 MPa, 3.2mm, unannealed	199	°C	ASTM D 648
HDT, 0.45 MPa, 6.4 mm, unannealed	206	°C	ASTM D 648
HDT, 1.82 MPa, 6.4 mm, unannealed	202	°C	ASTM D 648
CTE, -40°C to 150°C, flow	3.2E-05	1/°C	ASTM E 831
CTE, -40°C to 150°C, xflow	3.5E-05	1/°C	ASTM E 831
Thermal Conductivity	0.32	W/m-°C	ISO 8302
CTE, 23°C to 150°C, flow	3.2E-05	1/°C	ISO 11359-2
CTE, 23°C to 150°C, xflow	3.5E-05	1/°C	ISO 11359-2
Ball Pressure Test, 125°C +/- 2°C	Passes	-	IEC 60695-10-2
Vicat Softening Temp, Rate B/50	211	°C	ISO 306
Vicat Softening Temp, Rate B/120	213	°C	ISO 306
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	204	°C	ISO 75/Bf
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	192	°C	ISO 75/Af
PHYSICAL			
Specific Gravity	1.48	-	ASTM D 792
Mold Shrinkage on Tensile Bar, flow (2) (5)	0.4 - 0.6	%	SABIC Method
Mold Shrinkage, flow, 3.2 mm (5)	0.4 - 0.6	%	SABIC Method
Mold Shrinkage, xflow, 3.2 mm (5)	0.4 - 0.6	%	SABIC Method

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PHYSICAL			
Melt Flow Rate, 337°C/6.6 kgf	13.7	g/10 min	ASTM D 1238
Density	1.48	g/cm³	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	14	cm³/10 min	ISO 1133
ELECTRICAL			
Arc Resistance, Tungsten {PLC}	5	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
FLAME CHARACTERISTICS			
UL Recognized, 94V-0 Flame Class Rating (3)	0.4	mm	UL 94

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PROCESSING PARAMETERS	TYPICAL VALUE	Unit
Injection Molding		
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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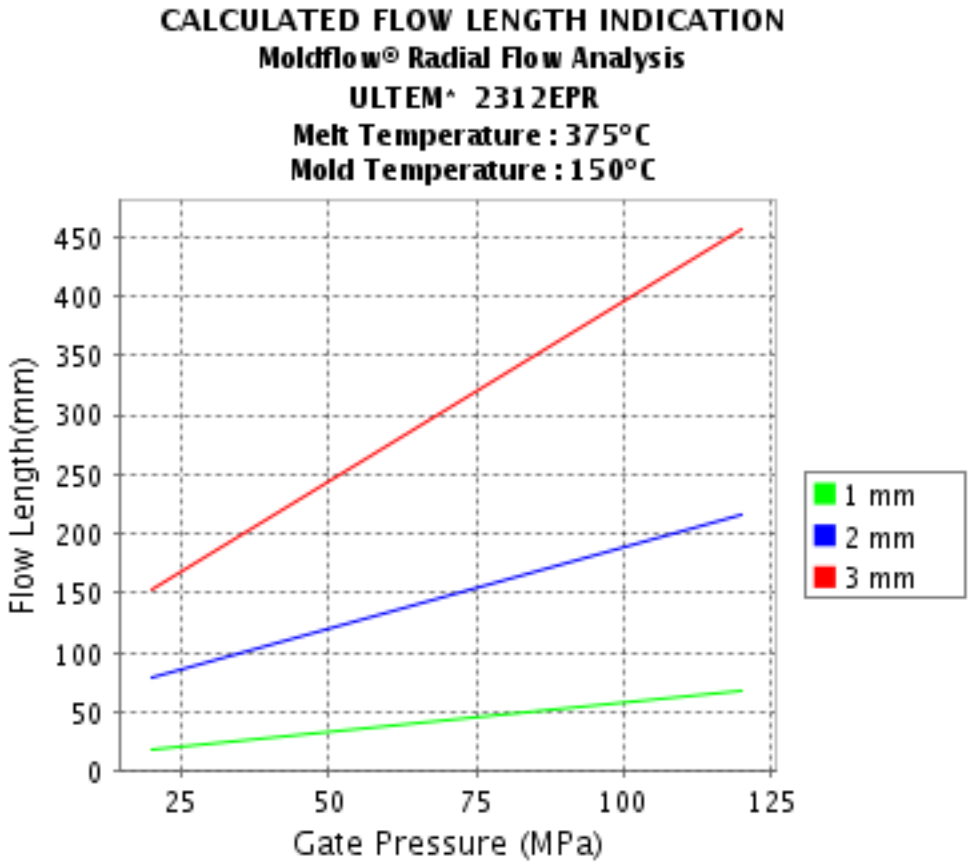

Note: Technical support is recommended if Gate Pressure is greater than 80 MPa. Contact your local representative.

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