ULTEM™ RESIN 2310EPR

REGION ASIA

DESCRIPTION

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

INDUSTRY	SUB INDUSTRY
Electrical and Electronics	Electrical Devices and Displays, Electrical Components and Infrastructure
Industrial	Electronic Material Handling, Electronic Material

TYPICAL PROPERTY VALUES

Revision 20190925

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL			
Tensile Stress, yld, Type I, 5 mm/min	158	MPa	ASTM D 638
Tensile Stress, brk, Type I, 5 mm/min	158	MPa	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	8580	MPa	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	228	MPa	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	9140	MPa	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
Ball Indentation Hardness, H358/30	160	MPa	ISO 2039-1
IMPACT			
Izod Impact, unnotched, 23°C	450	J/m	ASTM D 4812
Izod Impact, notched, 23°C	85	J/m	ASTM D 256
Instrumented Impact Total Energy, 23°C	9	J	ASTM D 3763
Izod Impact, unnotched 80*10*4 +23°C	35	kJ/m²	ISO 180/1U
Izod Impact, unnotched 80*10*4 -30°C	35	kJ/m²	ISO 180/1U
Izod Impact, notched 80*10*4 +23°C	10	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	10	kJ/m²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	10	kJ/m²	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80*10*4 sp=62mm	10	kJ/m²	ISO 179/1eA
Charpy 23°C, Unnotch Edgew 80*10*4 sp=62mm	30	kJ/m²	ISO 179/1eU
Charpy -30°C, Unnotch Edgew 80*10*4 sp=62mm	35	kJ/m²	ISO 179/1eU
THERMAL			
Vicat Softening Temp, Rate B/50	217	°C	ASTM D 1525
HDT, 0.45 MPa, 3.2 mm, unannealed	205	°C	ASTM D 648

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
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
Relative Temp Index, Elec [1]	105	°C	UL 746B
Relative Temp Index, Mech w/impact [1]	105	°C	UL 746B
Relative Temp Index, Mech w/o impact [1]	105	°C	UL 746B
PHYSICAL			
Specific Gravity	1.48	-	ASTM D 792
Mold Shrinkage on Tensile Bar, flow	0.3 – 0.5	%	SABIC method
Mold Shrinkage, flow, 3.2 mm	0.4 – 0.6	%	SABIC method
Mold Shrinkage, xflow, 3.2 mm	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/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	12	cm³/10 min	ISO 1133
ELECTRICAL			
Comparative Tracking Index (UL) {PLC}	4	PLC Code	UL 746A
Hot-Wire Ignition (HWI), PLC 1	≥3	mm	UL 746A
Hot-Wire Ignition (HWI), PLC 2	≥1.5	mm	UL 746A
Hot-Wire Ignition (HWI), PLC 3	≥0.75	mm	UL 746A
Hot-Wire Ignition (HWI), PLC 4	≥0.4	mm	UL 746A
High Amp Arc Ignition (HAI), PLC 4	≥0.4	mm	UL 746A
High Voltage Arc Track Rate {PLC}	4	PLC Code	UL 746A
Arc Resistance, Tungsten {PLC}	6	PLC Code	ASTM D 495
FLAME CHARACTERISTICS [1]			
UL Yellow Card Link	E207780-104152651	-	-
UL Recognized, 94V-0 Flame Class Rating	≥0.4	mm	UL 94
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	

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
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	

(1) UL Ratings shown on the technical datasheet might not cover the full range of thicknesses and colors. For details, please see the UL Yellow Card.

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