ULTEM™ RESIN 3310TD

DESCRIPTION

ULTEM 3310TD resin is an amorphous, modified, near infra-red transparent polyetherimide (PEI) thermoplastic, offering a material with an unique combination of low CTE and high near infra-red transparency.

GENERAL INFORMATION	
Features	Chemical Resistance, High Flow, Low Warpage, Thin Wall, Dielectrics, Amorphous, IR Transparent, Transparent/Translucent, Creep resistant, Dimensional stability, High stiffness/Strength, High temperature resistance, No PFAS intentionally added
Fillers	Mineral
Polymer Types	Polyetherimide (PEI)
Processing Techniques	Injection Molding

INDUSTRY	SUB INDUSTRY
Industrial	Electrical

TYPICAL PROPERTY VALUES

Revision 20260424

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL [1]			
Tensile Stress, brk, Type I, 5 mm/min	62	MPa	ASTM D638
Tensile Strain, brk, Type I, 5 mm/min	1.5	%	ASTM D638
Tensile Modulus, 5 mm/min	5000	MPa	ASTM D638
Flexural Stress, brk, 1.3 mm/min, 50 mm span	106	MPa	ASTM D790
Flexural Strength, 1.3 mm/min, 50 mm span	109	MPa	ASTM D790
Flexural Modulus, 1.3 mm/min, 50 mm span	5000	MPa	ASTM D790
Tensile Stress, break, 5 mm/min	67	MPa	ISO 527
Tensile Strain, break, 5 mm/min	1.6	%	ISO 527
Tensile Modulus, 1 mm/min	4900	MPa	ISO 527
Flexural Stress, break, 2 mm/min	124	MPa	ISO 178
Flexural Modulus, 2 mm/min	4900	MPa	ISO 178
IMPACT [1]			
Izod Impact, notched, 23°C	47	J/m	ASTM D256
Izod Impact, unnotched, 23°C	580	J/m	ASTM D4812
Izod Impact, notched 80*10*4 +23°C	4.7	kJ/m²	ISO 180/1A
Izod Impact, unnotched 80*10*4 +23°C	36.5	kJ/m²	ISO 180/1U
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	4.1	kJ/m²	ISO 179/1eA
Charpy 23°C, Unnotch Edgew 80*10*4 sp=62mm	21.1	kJ/m²	ISO 179/1eU
THERMAL [1]			
HDT, 0.45 MPa, 3.2 mm, unannealed	206	°C	ASTM D648
HDT, 1.82 MPa, 3.2mm, unannealed	196	°C	ASTM D648
Vicat Softening Temp, Rate B/50	211	°C	ASTM D1525
Vicat Softening Temp, Rate B/120	211	°C	ASTM D1525

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
CTE, -40°C to 150°C, flow	3.9E-05	1/°C	ASTM E831
CTE, -40°C to 150°C, xflow	4.0E-05	1/°C	ASTM E831
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	208	°C	ISO 75/Bf
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	197	°C	ISO 75/Af
Vicat Softening Temp, Rate B/50	211	°C	ISO 306
Vicat Softening Temp, Rate B/120	212	°C	ISO 306
PHYSICAL (1)			
Specific Gravity	1.546	-	ASTM D792
Melt Flow Rate			
337°C/6.7 kgf	10.3	g/10 min	ASTM D1238
Density	1.545	g/cm³	ISO 1183
Melt Volume Rate			
337°C/6.7 kg	6.84	cm³/10 min	ISO 1133
Moisture Absorption, (23°C/50% RH/24hrs)	0.077	%	ISO 62-4
Water Absorption, (23°C/24hrs)	0.12	%	ISO 62-1
Mold Shrinkage, flow (2)	0.58	%	SABIC method
Mold Shrinkage, xflow (2)	0.55	%	SABIC method
OPTICAL (1)			
Light Transmission			
at 1.0 mm and 850 nm	81	%	ASTM D1003
at 1.0 mm and 1350 nm	85	%	ASTM D1003
Refractive Index			
at 850 nm	1.637	-	ISO 489
at 1350 nm	1.626	-	ISO 489
Abbe number	19	-	ISO 489
INJECTION MOLDING (3)			
Drying Temperature	135 – 150	°C	
Drying Time	4 – 6	Hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	360 – 390	°C	
Nozzle Temperature	350 – 380	°C	
Front - Zone 3 Temperature	350 – 380	°C	
Middle - Zone 2 Temperature	350 – 370	°C	
Rear - Zone 1 Temperature	350 – 370	°C	
Mold Temperature	150 – 190	°C	

(1) The information stated on Technical Datasheets should be used as indicative only for material selection purposes and not be utilized as specification or used for part or tool design.

(2) 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.

(3) Injection Molding parameters are only mentioned as general guidelines. These may not apply or may need adjustment in specific situations such as low shot sizes, large part molding, thin wall molding and gas-assist molding.

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