EXTEM™ RESIN XH2315

DESCRIPTION

EXTEM XH2315 Resin is a reinforced, 30% glass fiber filled amorphous Polyimide (PI) resin that may offer a extremely high glass transition temperature (Tg of 267°C). Features are excellent mechanical, electrical and dimensional properties up to highest temperatures. The material may offer very good chemical resistance for an amorphous material and is inherently flame-retardant offering UL94 V0 ratings at 0.75 mm and V0,5VA at 1.0 mm and 1.5-1.65 mm. The material is RoHS compliant. The base material is transparent amber colored and available in natural and black color.

GENERAL INFORMATION	
Features	Flame Retardant, Chemical Resistance, Good Processability, High Flow, Low Warpage, Low Smoke and Toxicity, Thin Wall, Dielectrics, Amorphous, Low Shrinkage, Lead free reflow soldering capable, Low Moisture Absorption, UV-C resistant, Non Cl/Br flame retardant, Non halogenated flame retardant, Electroplatable, Low ionics/Outgassing/Liquid particle count, Creep resistant, Dimensional stability, High stiffness/Strength, High temperature resistance, No PFAS intentionally added
Fillers	Glass Fiber
Polymer Types	Polyimide (PI)
Processing Techniques	Lead free soldering, Injection Molding
Regional Availability	Europe, Asia, Americas

INDUSTRY	SUB INDUSTRY
Automotive	Aerospace
Industrial	Electrical

TYPICAL PROPERTY VALUES

Revision 20240729

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL [1]			
Tensile Stress, yld, Type I, 5 mm/min	156	MPa	ASTM D638
Tensile Stress, brk, Type I, 5 mm/min	156	MPa	ASTM D638
Tensile Strain, yld, Type I, 5 mm/min	3	%	ASTM D638
Tensile Strain, brk, Type I, 5 mm/min	3	%	ASTM D638
Tensile Modulus, 5 mm/min	10230	MPa	ASTM D638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	206	MPa	ASTM D790
Flexural Modulus, 1.3 mm/min, 50 mm span	8960	MPa	ASTM D790
Tensile Stress, yield, 5 mm/min	147	MPa	ISO 527
Tensile Stress, break, 5 mm/min	147	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	10530	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	200	MPa	ISO 178
Flexural Modulus, 2 mm/min	9000	MPa	ISO 178
IMPACT [1]			
Izod Impact, notched, 23°C	86	J/m	ASTM D256
Izod Impact, Reverse Notched, 3.2 mm	320	J/m	ASTM D256
Instrumented Dart Impact Total Energy, 23°C	8	J	ASTM D3763

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Izod Impact, notched 80*10*4 +23°C	5	kJ/m²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	24	kJ/m²	ISO 179/1eA
THERMAL [1]			
Vicat Softening Temp, Rate B/50	267	°C	ASTM D1525
HDT, 0.45 MPa, 3.2 mm, unannealed	257	°C	ASTM D648
HDT, 1.82 MPa, 3.2mm, unannealed	254	°C	ASTM D648
HDT, 1.82 MPa, 6.4 mm, unannealed	255	°C	ASTM D648
CTE, 23°C to 150°C, flow	1.6E-05	1/°C	ASTM E831
CTE, 23°C to 150°C, xflow	5.3E-05	1/°C	ASTM E831
Relative Temp Index, Elec [2]	105	°C	UL 746B
Relative Temp Index, Mech w/impact [2]	105	°C	UL 746B
Relative Temp Index, Mech w/o impact [2]	105	°C	UL 746B
PHYSICAL [1]			
Specific Gravity	1.52	-	ASTM D792
Water Absorption, (23°C/48hrs)	0.59	%	ASTM D570
Melt Flow Rate, 367°C/6.6 kgf	4	g/10 min	ASTM D1238
Density	1.52	g/cm³	ISO 1183
ELECTRICAL [1]			
Comparative Tracking Index (UL) {PLC} [2]	4	PLC Code	UL 746A
FLAME CHARACTERISTICS [2]			
UL Yellow Card Link	E121562-100988559	-	-
UL Recognized, 94-5VA Flame Class Rating	≥1	mm	UL 94
UL Recognized, 94V-0 Flame Class Rating	≥0.4	mm	UL 94
INJECTION MOLDING [3]			
Drying Temperature	175	°C	
Drying Time	4 – 6	Hrs	
Drying Time (Cumulative)	24	Hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	380 – 405	°C	
Nozzle Temperature	375 – 400	°C	
Front - Zone 3 Temperature	380 – 405	°C	
Middle - Zone 2 Temperature	370 – 395	°C	
Rear - Zone 1 Temperature	360 – 380	°C	
Mold Temperature	160 – 200	°C	
Intake (throat) temperature	70 – 100	°C	
Back pressure (Plastic Pressure)	3 – 10	MPa	
Screw speed (Circumferential speed)	<0.2	m/s	
Shot to Cylinder Size	40 – 70	%	
Vent Depth	0.025 – 0.076	mm	

(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) 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.

(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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