Property Data

Envalior
Imagine the Future

ForTii® Eco E11

PPA–GF30 FR(40)

30% Glass Reinforced, PA4T, Good Flow, Halogen free and free of red phosphorous, Certified V–0 at 0.15mm

Print Date: 2024–03–27

ForTii® Eco E11 has an excellent balance in flow, toughness and stiffness with superior processing performance for injection molding. It has improved toughness and is suitable for SMT processes. Eco E11 has a high electrical RTI rating of 150°C at 0.75 mm and has CTI 600V. Eco E11 is Eco–friendly due to its partly bio–based content.

Sustainability

Bio–based

PROPERTIES	TYPICAL DATA	UNIT	TEST METHOD
RHEOLOGICAL PROPERTIES	DRY / COND		
Molding shrinkage (parallel)	0.35 / *	%	ISO 294–4
Molding shrinkage (normal)	1.2 / *	%	ISO 294–4
MECHANICAL PROPERTIES	DRY / COND		
Tensile modulus	11500 / 11000	MPa	ISO 527–1/–2
Tensile modulus (–40°C)	12000 / –	MPa	ISO 527–1/–2
Tensile modulus (80°C)	9000 / –	MPa	ISO 527–1/–2
Tensile modulus (100°C)	7000 / –	MPa	ISO 527–1/–2
Tensile modulus (120°C)	5500 / –	MPa	ISO 527–1/–2
Tensile modulus (140°C)	4700	MPa	ISO 527–1/–2
Tensile modulus (160°C)	4200	MPa	ISO 527–1/–2
Stress at break	155 / 145	MPa	ISO 527–1/–2
Stress at break (–40°C)	180 / –	MPa	ISO 527–1/–2
Stress at break (80°C)	110 / –	MPa	ISO 527–1/–2
Stress at break (100°C)	85 / –	MPa	ISO 527–1/–2
Stress at break (120°C)	70 / –	MPa	ISO 527–1/–2
Stress at break (140°C)	60	MPa	ISO 527–1/–2

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Stress at break (160°C)	55	MPa	ISO 527-1/-2
Strain at break	2.3 / 2.4	%	ISO 527-1/-2
Strain at break (-40°C)	2.4 / –	%	ISO 527-1/-2
Strain at break (80°C)	2.8 / –	%	ISO 527-1/-2
Strain at break (100°C)	3.8 / –	%	ISO 527-1/-2
Strain at break (120°C)	4.5 / –	%	ISO 527-1/-2
Strain at break (140°C)	4.5	%	ISO 527-1/-2
Strain at break (160°C)	4.5	%	ISO 527-1/-2
Flexural modulus	10000 / –	MPa	ISO 178
Flexural strength	230 / –	MPa	ISO 178
Charpy impact strength (+23°C)	55 / –	kJ/m²	ISO 179/1eU
Charpy notched impact strength (+23°C)	8 / 8	kJ/m²	ISO 179/1eA
THERMAL PROPERTIES	**DRY / COND**		
Melting temperature (10°C/min)	325 / *	°C	ISO 11357-1/-3
Temp. of deflection under load (1.80 MPa)	275 / *	°C	ISO 75-1/-2
Coeff. of linear therm. expansion (parallel)	0.2 / *	E-4/°C	ISO 11359-1/-2
Coeff. of linear therm. expansion (normal)	0.7 / *	E-4/°C	ISO 11359-1/-2
Burning Behav. at 1.5 mm nom. thickn.	V-0 / *	class	IEC 60695-11-10
Thickness tested	1.5 / *	mm	IEC 60695-11-10
UL recognition	Yes / *	–	–
Burning Behav. at 3.0 mm nom. thickn.	V-0 / *	class	IEC 60695-11-10
Thickness tested	3 / *	mm	IEC 60695-11-10
UL recognition	Yes / *	–	–
Relative Temperature Index – electrical	150	°C	UL746B
RTI electrical (Thickness (1) tested)	0.75	mm	UL746B
ELECTRICAL PROPERTIES	**DRY / COND**		
Volume resistivity	>1E13 / >1E13	Ohm*m	IEC 62631-3-1

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PROPERTIES	TYPICAL DATA	UNIT	TEST METHOD
Electric strength	33 / –	kV/mm	IEC 60243–1
Comparative tracking index	600 / –	V	IEC 60112
Relative permittivity (1GHz)	3.7 / 3.9	–	IEC 61189–2–721
Relative permittivity (10GHz)	3.6 / 3.75	–	IEC 61189–2–721

OTHER PROPERTIES	DRY / COND		
Humidity absorption	1.4 / *	%	Sim. to ISO 62
Density	1450 / –	kg/m³	ISO 1183

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