LNP™ FARADEX™ COMPOUND ES003E

EMI-X ES-1003 EM

DESCRIPTION

LNP FARADEX ES003E compound is based on Polyetherimide (PEI) resin containing 15% stainless steel fiber. Added features of this grade include: Electrically Conductive, EMI/RFI shielding, Easy Molding.

GENERAL INFORMATION	
Features	Electrically Conductive, EMI/RFI Shielding, Good Processability, High temperature resistance, No PFAS intentionally added
Fillers	Stainless Steel Fiber
Polymer Types	Polyetherimide (PEI)
Processing Techniques	Injection Molding

INDUSTRY	SUB INDUSTRY
Consumer	Commercial Appliance
Electrical and Electronics	Electronic Components
Industrial	Electrical, Material Handling
Packaging	Industrial Packaging

TYPICAL PROPERTY VALUES

Revision 20241025

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL [1]			
Tensile Stress, yld, Type I, 5 mm/min	105	MPa	ASTM D638
Tensile Stress, brk, Type I, 5 mm/min	105	MPa	ASTM D638
Tensile Strain, yld, Type I, 5 mm/min	4.8	%	ASTM D638
Tensile Strain, brk, Type I, 5 mm/min	5	%	ASTM D638
Tensile Modulus, 5 mm/min	4660	MPa	ASTM D638
Flexural Modulus, 1.3 mm/min, 50 mm span	4590	MPa	ASTM D790
Tensile Stress, yield, 5 mm/min	99	MPa	ISO 527
Tensile Stress, break, 5 mm/min	98	MPa	ISO 527
Tensile Strain, yield, 5 mm/min	4	%	ISO 527
Tensile Strain, break, 5 mm/min	4.3	%	ISO 527
Tensile Modulus, 1 mm/min	4340	MPa	ISO 527
Flexural Strength, 2 mm/min	155	MPa	ISO 178
Flexural Modulus, 2 mm/min	4310	MPa	ISO 178
IMPACT [1]			
Izod Impact, unnotched, 23°C	485	J/m	ASTM D4812
Izod Impact, notched, 23°C	34	J/m	ASTM D256
Multiaxial Impact	1	J	ISO 6603
Instrumented Dart Impact Total Energy, 23°C	7	J	ASTM D3763
Izod Impact, unnotched 80*10*4 +23°C	33	kJ/m²	ISO 180/1U

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Izod Impact, notched 80*10*4 +23°C	5	kJ/m²	ISO 180/1A
THERMAL [1]			
HDT, 0.45 MPa, 3.2 mm, unannealed	190	°C	ASTM D648
HDT, 1.82 MPa, 3.2mm, unannealed	180	°C	ASTM D648
CTE, -30°C to 30°C, flow	4.E-05	1/°C	ASTM D696
CTE, -30°C to 30°C, xflow	4.4E-05	1/°C	ASTM D696
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	194	°C	ISO 75/Bf
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	177	°C	ISO 75/Af
PHYSICAL [1]			
Specific Gravity	1.46	-	ASTM D792
Density	1.46	g/cm³	ASTM D792
Moisture Absorption, (23°C/50% RH/24 hrs)	0.19	%	ASTM D570
Mold Shrinkage, flow, 24 hrs [2]	0.6 – 0.8	%	ASTM D955
Mold Shrinkage, xflow, 24 hrs [2]	0.8 – 1	%	ASTM D955
Moisture Absorption (23°C / 50% RH)	0.27	%	ISO 62
ELECTRICAL [1]			
Volume Resistivity [3]	8.9E+01	Ω.cm	ASTM D257
Surface Resistivity [3]	1.0E+01 – 1.0E+03	Ω	ASTM D257
Shielding Effectivness @ 2.5mm	60	dB	SABIC method
INJECTION MOLDING [4]			
Drying Temperature	150	°C	
Drying Time	4 – 6	Hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	360 – 400	°C	
Rear - Zone 1 Temperature	360 – 380	°C	
Middle - Zone 2 Temperature	370 – 390	°C	
Front - Zone 3 Temperature	380 – 400	°C	
Nozzle Temperature	390 – 400	°C	
Mold Temperature	140 – 180	°C	
Back Pressure	0.3 – 0.7	MPa	
Screw speed (Circumferential speed)	0.2 – 0.3	m/s	
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) 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) Measurement meets requirements as specified in ASTM D4496.

(4) 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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