Technical Data Sheet

TERmmINATOR™ 2 JUDGMENT DK

Elect Nano THE TERmmINATOR™ 2 is a specialty electromagnetic interference (EMI) absorbing and shielding injection molding compound with a toughened high temperature cyclic olefin copolymer (COC) base resin. This material utilizes Elect Nano's patented discrete carbon nanotube technology (dCNT) to achieve superior electrical property uniformity across molded specimens with precision tuned dielectric properties for Extremely High Frequency (EHF) millimeter wave bands. Other benefits include high temperature stability, excellent surface finish, low moisture uptake, low outgassing and low optical reflectance.

	Test Method	Unit	Values
Physical Properties			
Density	ASTM D792	g/cm³	1.06
Melt Flow Index (260˚C, 2.16 kg)	ASTM D1238	g/10 min	7.9
Mold Shrinkage (Flow Direction)	ASTM D955	%	0.59
Mold Shrinkage (Transverse Direction)	ASTM D955	%	0.64
Mechanical Properties			
Tensile Strength	ASTM D638	MPa	38.8
Tensile Modulus	ASTM D638	GPa	1.9
Tensile Elongation at Break	ASTM D638	%	12.3
Flexural Strength	ASTM D790	MPa	61.6
Flexural Modulus	ASTM D790	GPa	1.7
Notched Izod Impact Strength	ASTM D256	kJ/m²	3.9
Notched Izod Impact Strength	ASTM D256	J/m	49.6
Thermal			
Heat Deflection Temperature (0.45 MPa)	ASTM E 2092	˚C	164
Electrical			
Surface Resistance	ANSI STM11.11	Ohm	1.0E+06
Dielectric Constant (30 GHz)	Internal	–	<10
Dielectric Loss Tangent (30 GHz)	Internal	–	>0.4

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Processing Guidelines

Elect Nano THE TERmmINATOR™ 2 is generally noted to have negligible moisture absorption at equilibrium, and therefore drying is not required. Proper mold cavity design is critical for achieving high strength, defect-free parts. Ensure cavities have uniform wall thickness where possible and smooth transitions in areas with varying wall thickness to avoid jetting and backfilling which can entrap air. Maximize the injection speed until flow instabilities or surface defects are observed. Increase venting at the end of flow patterns and weld lines until flash appears.

	Unit	Recommended	Range
Drying Conditions			
Max Moisture Content	ppm	<100	0 – 100
Drying Time	hrs	NA	NA
Drying Temperature	˚C	NA	NA
Processing Parameters			
Injection Pressure	MPa	100	80 – 140
Injection Holding Pressure	MPa	60	40 – 100
Back Pressure	MPa	5	5 – 10
Holding Time	s	10	5 – 15
Cooling Time	s	40	30 – 50
Injection Rate	cc/s	25	15 – 50
Injection Speed*	mm/s	50	20 – 80
Suck Back (Decompression)	mm	1	0 – 4
Melt Cushion	mm	4	3 – 5
Feed Zone Temperature	˚C	280	250 – 280
Compression Zone Temperature	˚C	290	280 – 310
Metering Zone Temperature	˚C	300	290 – 310
Nozzle Temperature	˚C	300	280 – 310
Melt Temperature	˚C	295	280 – 310
Mold Temperature	˚C	130	120 – 150
Screw Tangential Speed	mm/s	130	80 – 200
Screw Rotational Rate*	RPM	100	60 – 150

**Note: Linear injection speed (mm/s) and screw rotational rate (RPM) values depend on screw diameter. Values shown are calculated from the injection rates and screw tangential speed ranges for a 25mm diameter screw.*

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