

PRE-ELEC® ESD 5500

Polypropylene

Premix Oy

Message:

PRE-ELEC® ESD 5500 is a static dissipative thermoplastic compound based on polypropylene. The dissipative property is permanent and built into the polymer chain. PRE-ELEC® ESD 5500 can be injection moulded, extruded, blow moulded and blown into film.

Surface resistance values of $1e9 \Omega$ (EOS/ESD S11.11-1993, IEC 61340-5-1) can be achieved with optimum processing parameters. The products made out of PRE-ELEC® ESD 5500 are washable, reusable and recyclable. PRE-ELEC® ESD 5500 is designed for clean applications with extremely low amount of extractable ions.

Typical applications include bins, trays, bottles and bags where permanent ESD protection and high cleanliness are required. These products can be used mainly in electronics packaging, but in many other application areas as well.

General Information			
Features	Recyclable materials		
Uses	Electrical/Electronic Applications		
	Electrical components		
	Bottle		
	Container		
RoHS Compliance	RoHS compliance		
Forms	Particles		
Processing Method	Extrusion		
	Injection molding		

Physical	Nominal Value	Unit	Test Method
Specific Gravity			
--	0.913	g/cm ³	ASTM D792
--	0.920	g/cm ³	ISO 1183
Melt Mass-Flow Rate (MFR) (230°C/2.16 kg)	8.0	g/10 min	ISO 1133
Molding Shrinkage			
Flow	1.6	%	ASTM D955
Flow direction	1.6	%	ISO 294-4

Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
4.00 mm	248	MPa	ASTM D638
4.00 mm	250	MPa	ISO 527-2
Tensile Strength			
Yield	20.0	MPa	ASTM D638, ISO 527-2
--	15.9	MPa	ASTM D638
4.00 mm	16.0	MPa	ISO 527-2
Tensile Elongation			

Yield	15	%	ASTM D638, ISO 527-2
Fracture	600	%	ASTM D638
Fracture, 4.00mm	600	%	ISO 527-2
Flexural Modulus (4.00 mm)	1100	MPa	ASTM D790, ISO 178
Impact	Nominal Value	Unit	Test Method
Notched Izod Impact (23°C, 4.00 mm)	12.6	kJ/m ²	ASTM D256
Notched Izod Impact ¹ (23°C)	13	kJ/m ²	ISO 180
Unnotched Izod Impact (23°C, 4.00 mm)	No Break		ASTM D256
Unnotched Izod Impact Strength ² (23°C)	No Break		ISO 180
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
0.45 MPa, not annealed	80.0	°C	ASTM D648B, ISO 75-2/Bf
1.8 MPa, not annealed	50.0	°C	ASTM D648A, ISO 75-2/Af
Vicat Softening Temperature	135	°C	ISO 306/A50, ASTM D1525 3
Electrical	Nominal Value	Unit	Test Method
Surface Resistivity	1.0E+9	ohms	ESD STM11.11, IEC 61340-2-3
Static Decay			
--		sec	ESD S20.20
--		sec	IEC 61340-5-1
Flammability	Nominal Value	Unit	Test Method
Flame Rating ⁴			UL 94
0.991 mm	HB		UL 94
1.00 mm	HB		UL 94
3.00 mm	HB		UL 94
Injection	Nominal Value	Unit	
Drying Temperature	60.0 - 80.0	°C	
Drying Time	2.0 - 4.0	hr	
Processing (Melt) Temp	190 - 210	°C	
Mold Temperature	30.0 - 40.0	°C	
Injection Pressure	60.0 - 80.0	MPa	
Injection Rate	Moderate		
Extrusion	Nominal Value	Unit	
Drying Temperature	60.0 - 80.0	°C	
Drying Time	2.0 - 4.0	hr	
Cylinder Zone 1 Temp.	180	°C	
Cylinder Zone 2 Temp.	190	°C	
Cylinder Zone 3 Temp.	200	°C	
Cylinder Zone 4 Temp.	210	°C	
Cylinder Zone 5 Temp.	210	°C	
Extrusion instructions			
Cylinder Zone 6: 210°C			

NOTE	
1.	4 mm thickness
2.	4 mm thickness
3.	速率 A (50°C/h), 载荷2 (50N)
4.	RD 524

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